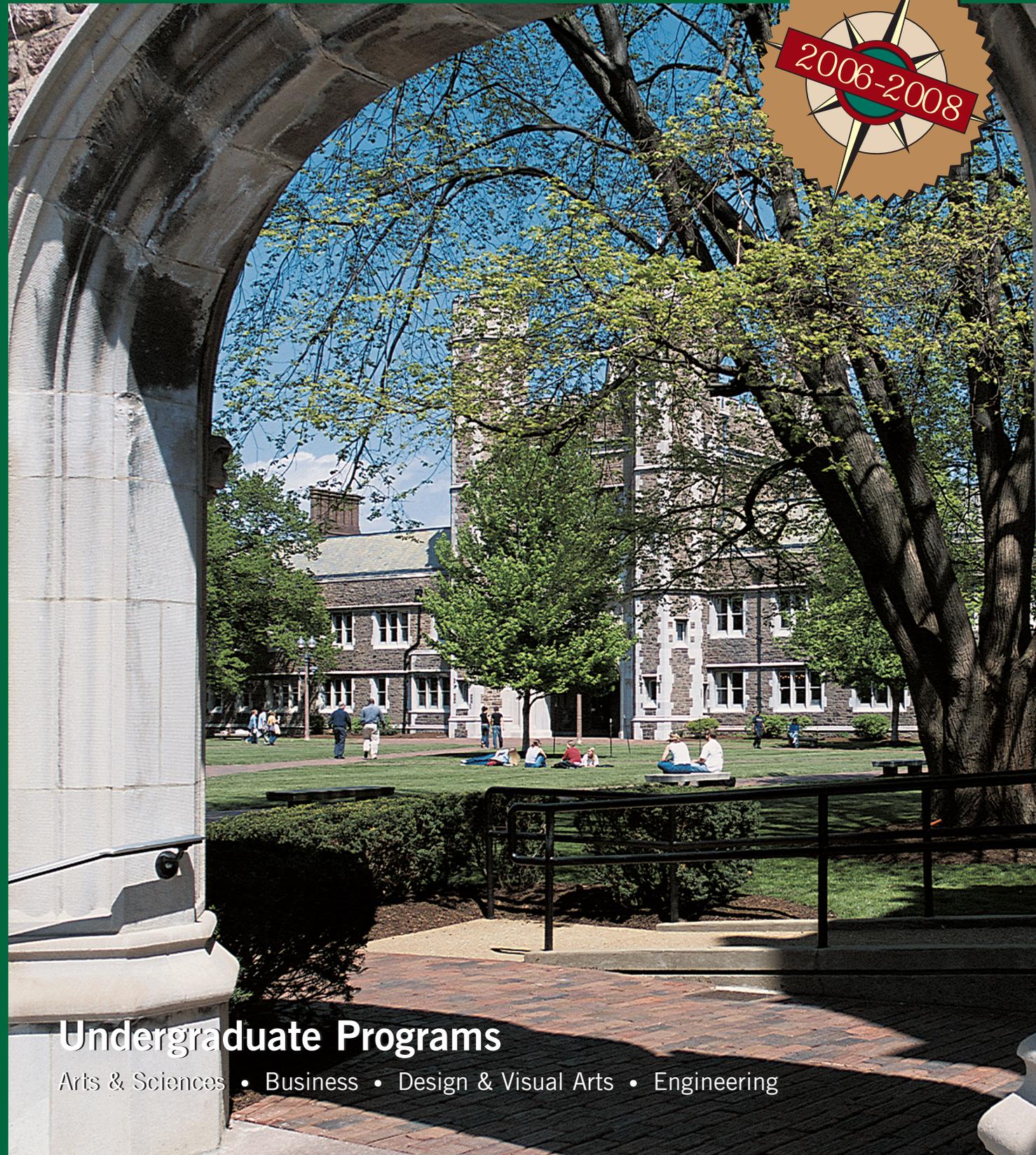


Washington University in St. Louis



Undergraduate Programs

Arts & Sciences • Business • Design & Visual Arts • Engineering

 Washington University in St. Louis

 Washington
University in St. Louis

(USPS: 078-340)
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One Brookings Drive
St. Louis, Missouri 63130-4899

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2006-2008

Arts & Sciences

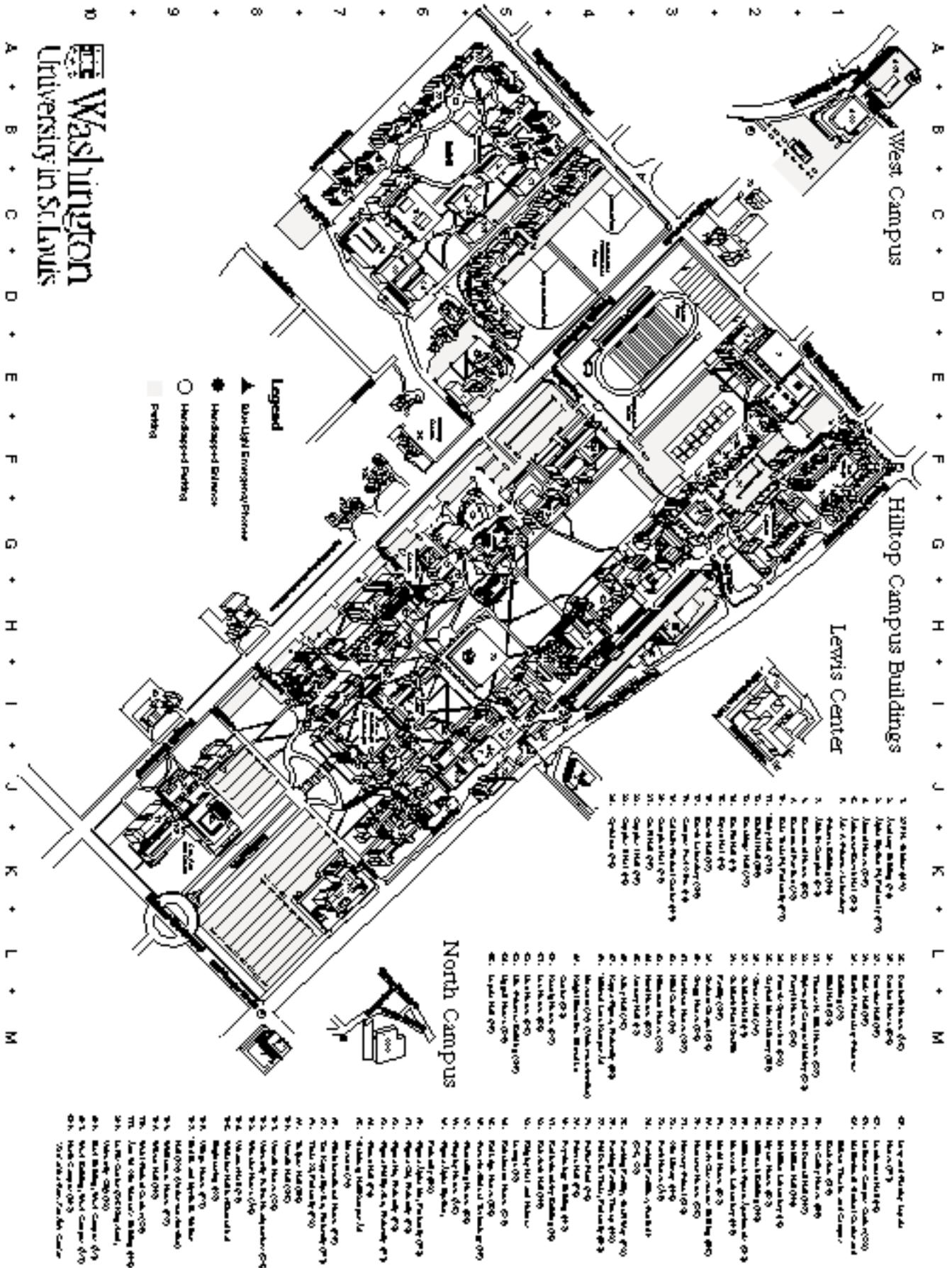
Business

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Architecture

Art

Engineering



WASHINGTON UNIVERSITY IN ST. LOUIS
 (USPS: 078-340)
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This *Bulletin* provides information on Washington University's programs and services available as of June 1, 2004, to the student or prospective student of the University. It offers an accurate presentation of the kinds of offerings the student may expect to find in Washington University's five undergraduate programs. However, curricula, courses, degree requirements, fees, and policies are subject to revision. Specific details may vary from the statements printed here without further notice.

Washington University in St. Louis

Undergraduate Programs 2006–08

College of Arts & Sciences

Olin School of Business

Sam Fox School of Design & Visual Arts

College of Architecture

College of Art

School of Engineering & Applied Science

2006–07 Academic Calendar

Fall Semester 2006

AUGUST	30	Wed.	Classes begin
SEPTEMBER	4	Mon.	Labor Day holiday
OCTOBER	20	Fri.	Fall break
NOVEMBER	22	Wed.	Thanksgiving break begins
	26	Sun.	Thanksgiving break ends
DECEMBER	15	Fri.	Final examinations begin
	21	Thurs.	Final examinations end

Spring Semester 2007

JANUARY	15	Mon.	Martin Luther King, Jr. Holiday
	16	Tues.	Classes begin
MARCH	12	Mon.	Spring break begins
	18	Sun.	Spring break ends
MAY	3	Thurs.	Final examinations begin
	9	Wed.	Final examinations end
	18	Fri.	Commencement

Summer 2007

MAY	21	Mon.	Summer I Session begins
	28	Mon.	Memorial Day holiday
JUNE	8	Fri.	Summer I Session ends
	11	Mon.	Summer II & III Sessions begin
JULY	4	Wed.	Independence Day holiday
	13	Fri.	Summer II Session ends
	16	Mon.	Summer IV Session begins
AUGUST	3	Fri.	Summer III Session ends
	16	Thurs.	Summer IV Session ends

Washington University recognizes individual students' choice in observing religious holidays that occur during periods when classes are scheduled. Students are encouraged to arrange with their instructors to make up work missed as a result of religious observance, and instructors are asked to make every reasonable effort to accommodate such requests.

Dates for the last days of classes and reading periods are given in *Course Listings*. A final examination schedule is distributed in the fall and spring to all students registered in the Olin School of Business.

2007–08 Academic Calendar

Fall Semester 2007

AUGUST	29	Wed.	Classes begin
SEPTEMBER	3	Mon.	Labor Day holiday
OCTOBER	19	Fri.	Fall break
NOVEMBER	21	Wed.	Thanksgiving break begins
	25	Sun.	Thanksgiving break ends
DECEMBER	14	Fri.	Final examinations begin
	20	Thurs.	Final examinations end

Spring Semester 2008

JANUARY	14	Mon.	Martin Luther King, Jr. Holiday
	21	Tues.	Classes begin
MARCH	10	Mon.	Spring break begins
	16	Sun.	Spring break ends
MAY	1	Thurs.	Final examinations begin
	7	Wed.	Final examinations end
	16	Fri.	Commencement

Summer 2008

MAY	19	Mon.	Summer I Session begins
	26	Mon.	Memorial Day holiday
JUNE	6	Fri.	Summer I Session ends
	9	Mon.	Summer II & III Sessions begin
JULY	4	Fri.	Independence Day holiday
	11	Fri.	Summer II Session ends
	14	Mon.	Summer IV Session begins
AUGUST	1	Fri.	Summer III Session ends
	14	Thurs.	Summer IV Session ends

Washington University recognizes individual students' choice in observing religious holidays that occur during periods when classes are scheduled. Students are encouraged to arrange with their instructors to make up work missed as a result of religious observance, and instructors are asked to make every reasonable effort to accommodate such requests.

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About This Bulletin

The degree programs, requirements, course listings, and faculty for the four undergraduate schools of Washington University in St. Louis—the College of Arts & Sciences, the Olin School of Business, the Sam Fox School of Design & Visual Arts, and the School of Engineering & Applied Science—are represented in this *Bulletin*.

All announcements in this *Bulletin* are subject to change without notice. Unless specified otherwise, changes become effective at the time they are announced. For the most current information on courses, you are encouraged to consult the course listings, which are available prior to registration. Course listings are available online through the Washington University homepage on the Internet at www.wustl.edu.

University Addresses

Office of Undergraduate Admissions

Room 135, S. Brookings Hall
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Campus Box 1089
One Brookings Drive
St. Louis, Missouri 63130-4899
314/935-6000
1-800/638-0700
Fax: 314/935-4290
Web site: admissions.wustl.edu
E-mail: admissions@wustl.edu

Office of Student Financial Services

Room 75, N. Brookings Hall
Washington University in St. Louis
Campus Box 1041
One Brookings Drive
St. Louis, Missouri 63130-4899
314/935-5900
1-888/547-6670
Fax: 314/935-4037
Web site: sfs.wustl.edu
E-mail: financial@wustl.edu

Director of International Recruitment

Washington University in St. Louis
Campus Box 1089
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E-mail: Jshimabukuro@wustl.edu

Office of Student Records/Registrar

Room 50, Women's Building
Washington University in St. Louis
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314/935-5959
Fax: 314/935-4268

College of Arts & Sciences

Room 205, S. Brookings Hall
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Fax: 314/935-5875
Web site: www.artsci.wustl.edu

Olin School of Business

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St. Louis, Missouri 63130-4899
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Sam Fox School of Design & Visual Arts

Washington University in St. Louis
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St. Louis, Missouri 63130-4899
Web site: www.samfoxschool.wustl.edu
E-mail: samfoxschool@wustl.edu

College of Architecture

Room 105, Givens Hall
Washington University in St. Louis
Campus Box 1079
One Brookings Drive
St. Louis, Missouri 63130-4899
314/935-6200
Fax: 314/935-7656
Web site: www.arch.wustl.edu
E-mail: wuarch@architecture.wustl.edu

College of Art

Room 1, Bixby Hall
Washington University in St. Louis
Campus Box 1031
One Brookings Drive
St. Louis, Missouri 63130-4899
314/935-6500
Fax: 314/935-4862
Web site: www.art.wustl.edu
E-mail: artinfo@art.wustl.edu

Mildred Lane Kemper Art Museum

Campus Box 1214
Washington University in St. Louis
One Brookings Drive
St. Louis, Missouri 63130-4899
314/935-5490
Fax: 314/935-7282
Web site:
www.kemperartmuseum.wustl.edu
E-mail: kemperartmuseum@wustl.edu

School of Engineering & Applied Science

Room 105, Sever Hall
Washington University in St. Louis
Campus Box 1163
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Web site: www.seas.wustl.edu

Office of Residential Life

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Office for International Students and Scholars

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St. Louis, Missouri 63130-4899
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Fax: 314/935-7642
Web site: www.artsci.wustl.edu/~ias

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Educational Goals for Our Undergraduates

Noted novelist and essayist William H. Gass, the David May Distinguished University Professor Emeritus in the Humanities, composed the following piece on our educational goals for undergraduates at the University. The goals were formulated by the University's Undergraduate Council, a group of faculty, students, and staff who meet regularly to focus on undergraduate education.

Education should be lifelong and lifewide. You may leave college, but you ought not to leave learning. And knowledge is not a pet you put in a kennel while you go on vacation.

Education is not like the flat earth either; its landscape has many dimensions. You need to know well a few things, not only because depth and focus in a field will get you a good job, but because those who have been to the bottom of the mine know how superficial their knowledge of the hills is. Yet in the mine you may see only a short way. It is also essential to hike over those

hills and experience the view from the top.

Undergraduates at Washington University may enroll in one of four schools and may proceed within them to concentrate in major fields or specialized areas. Like vines, specialties have support systems, so the University provides plenty of opportunity for minors, second majors, and cross-school enrollments. Students may share the same river, but they will each form their own delta.

Studios, laboratories, classrooms, libraries are places for study; however, a great deal of your learning will occur in part-time jobs, in internships and cocurricular activities, in student organizations and athletics, where both leadership and teamwork can be learned; on various publications where your writing skills can gain a polish; and in public service where values are challenged and clarified. Your fellow students are your teachers too. You and your friends will grow up and get out and go on together.

Skill and savvy, knowledge and ability are like old clothes on a scarecrow—only the crows will be fooled—unless they are connected to a strong, open, and vibrant intellectual character the way flesh grows over bone.

This *Bulletin* may tell you where to go to learn classics or calculus or chemistry, but course work alone won't enable you to express social concern, value excellence, or deal honestly with the world.

Consequently, Washington University supports a number of personal and educational goals for its undergraduates, and you and those who advise you should keep these goals in sight when you select courses and plan programs. And your success should be regularly reviewed.

Personal Development

Set high standards. Excellence is the University's central concern. It should be yours. Define both short- and long-term goals for social and intellectual achievement.

Know thyself. Each of us is a world of golden opportunities. Locate those interests that are worthwhile and lasting. Students should have experiences that will help them in their choice of careers.

Solidify good character. A good character is anyone's best possession. Each student should strive to meet the highest standard of civilized conduct and should be able to

Why Students Choose Washington University in St. Louis

Pursuing a college education is about exploring choices, discovering possibilities, and developing talents. As a student at Washington University, you will have the opportunity to explore who you are, to discover what you want to do in the future, and to develop your potential to the fullest.

Students come from across the United States and from around the world to study at Washington University because we offer a broad range of educational and cultural opportunities within a friendly, supportive environment. In our medium-sized university setting, you will enjoy the advantages associated with a large university—comprehensive academic resources and extracurricular activities—plus the individualized attention and friendliness that a small college community provides.

Washington University is recognized internationally for academic excellence. Whatever your interests—architecture, art, chemical engineering, international business, life sciences, performing arts, social science—we have classes available from which you may design a course of study that is right for you.

And whatever you may choose to study, you'll learn from teachers who are leaders in their fields. Our faculty are renowned for their scholarly, creative, and research achievements and are committed to both teaching and learning.

Outside the classroom, you can take advantage of special internships and cooperative education programs, enroll in study abroad programs, and participate in exciting research and fieldwork alongside faculty and graduate students. In addition to studying, you have the opportunity to pursue a wide

range of interests in approximately 200 student-run organizations.

Students choose Washington University because our focus is on our students, our mission is learning, and our commitment is to quality education.

About Washington University

Who We Are Today

When Wayman Crow and William Greenleaf Eliot founded Washington University in 1853, they envisioned it as a great center of learning for the youth of St. Louis. Since then, Washington University has grown in both size and stature, adding undergraduate and graduate schools, degree programs, departments, facilities, and student resources. Through the years, the University expanded not just its opportunities for learning, but also its campus boundaries, student populations, and faculty accomplishments.

Today, Washington University is a medium-sized, independent university with a national reputation and an undergraduate student body of about 6,000. We offer more than 300 undergraduate, graduate, and doctoral programs through the College of Arts & Sciences; the Graduate School of Arts & Sciences; University College; the Sam Fox School of Design & Visual Arts' College of Architecture, College of Art, Graduate School of Architecture & Urban Design, and Graduate School of Art; the Olin School of Business; the School of Engineering & Applied Science; the Sever Graduate School of Engineering; the School of Law; the School of Medicine; and the George Warren Brown School of Social Work.

Our 169-acre Danforth Campus is set just

west of the city of St. Louis in a friendly, suburban setting, adjacent to Forest Park, site of the 1904 World's Fair and one of the nation's largest urban parks. The Danforth Campus comprises a beautiful mixture of Gothic architecture and modern buildings.

At the other end of Forest Park is our 59-acre Medical Campus, which includes the School of Medicine and associated hospitals and institutes of the Washington University Medical Center. Our West Campus is in nearby downtown Clayton, the North Campus is in the city of St. Louis, the Trinity Building is in University City, and the University's Tyson Research Center is 20 miles southwest of St. Louis.

Undergraduate Enrollment by School (as of November 2005)

College of Arts & Sciences	3,798
Olin School of Business	707
Sam Fox School, College of Architecture	193
Sam Fox School, College of Art	324
School of Engineering & Applied Science	1,075
<i>Total Full-time Undergraduate Students</i>	6,097

Committed to Our Students: Mission Statement

Washington University's educational mission is the promotion of learning—learning by students and by faculty. Teaching, or the transmission of knowledge, is central to our mission, as is research, or the creation of new knowledge. The faculty, composed of scholars, scientists, artists, and members of the learned professions, serves society by teaching; by adding to the store of human art, understanding, and wisdom; and by providing direct services, such as health care.

Our goals are to foster excellence in our teaching, research, scholarship, and service; to prepare students with the attitudes, skills,

explain and justify those norms.

Be ready to accept social and environmental responsibility. We all lead local lives; we have close regional concerns; we each have a flag; we are members of the human community; and we share our world with the trees, the bees, and the bears. The compass of citizenship directs us to family, city, and nation, world.

Recognize that the arc of learning is lifelong. Learning is the same as living. It isn't any old apple a day that keeps the doctor away. It is an apple from the tree of knowledge.

Intellectual development

Reasoning. The student should develop a strong, supple, disciplined mind, which can understand and analyze complex arguments and is able to formulate and support informed opinions on a wide variety of issues.

Communication. The student should strive to write clearly, correctly, and forcefully; to speak fluently and well. These skills signify the presence of a careful, uncluttered, and imaginative mind.

Aesthetic appreciation. Unless the student is satisfied to be someone who "knows

what they like," he or she should have an appreciation of aesthetic principles and some knowledge of the accomplishments of the arts, gained through formal study, personal creative endeavor, or attending exhibitions and other arts-related programs.

Mathematical skill. The student should understand basic mathematics and be able to use mathematical techniques to solve practical problems, as well as have some appreciation of the role of mathematics in the history of ideas.

Historical perspective. Those who are ignorant of history are not only doomed to repeat it, they are doomed to be beaten by it. Some understanding of the historical development and current state of human activities, knowledge, inventions, and institutions is essential.

Scientific understanding. We live in a scientific and technological world, and what the scientists discover and the technologists invent is sometimes more important in the long run than who rules in what country. The student should become familiar with scientific methodology and gain an awareness of the impact scientific discovery has had in shaping the past and will continue to have in the future. Students should also have an

appreciation of the principles on which technology is based and the creative procedures through which knowledge is transformed into useful mechanisms and processes.

Literature. Students should be able to read and analyze a wide range of texts, including significant works of literature, and have some grasp of the impact on a culture of language well and powerfully used.

International and cultural awareness. A language as wide-ranging, rich, and powerful as English may not seem confining, but those who put another tongue in their mouths have changed more than their anatomy. It will be unthinkable, in the world to come, to be ignorant of other climes and cultures, other languages and literatures.

Information acquisition and research. Students must master the techniques of locating and retrieving information by learning to use a variety of information sources.

Does this seem like a lot? You cannot do everything at once. College is only preparatory. It will possibly let you know what you don't know; it should give you the tools to fill in the blanks; but above all, it should fill you with a fire for a lifetime of learning.

and habits of lifelong learning and with leadership skills, enabling them to be useful members of a global society; and to be an exemplary institution in our home community of St. Louis, as well as in the nation and in the world.

Through our goals Washington University intends to judge itself by the most demanding standards; to attract people of great ability from all types of backgrounds; to encourage faculty and students to be bold, independent, and creative thinkers; and to provide the infrastructure to support teaching, research, scholarship, and service for the current and for future generations.

Teaching and Learning at Washington University

A Statement of Expectations

Endorsed by the Undergraduate Council

All members of the Washington University community share responsibility for creating an atmosphere conducive to learning. A collaborative learning environment involves the active participation of both instructors and students in the classroom and in activities outside the classroom. This environment requires:

- the best effort on the part of both faculty and students to enhance the learning experience for the benefit of all persons involved;
- the recognition that all present play important roles; all participants in the learning experience deserve respect for what they bring to it, and all should be sensitive to the importance of the others in this process;
- an atmosphere in the classroom of mutual respect for all persons regardless of political, ethnic, religious, gender, sexual orientation, and disability considerations.

Expectations and responsibilities of the faculty. The faculty member is involved in several major roles, including those of teacher, scholar-researcher, and citizen in the University. For the unimpeded performance of these functions, the faculty member is guaranteed academic freedom. At the same time, faculty members have clear responsibilities to the students and to the institution, particularly in her/his role as teacher. Instructors should provide the basic outlines for the learning experience and provide guidance as appropriate, generally in the form of a handout. Such guidance should normally involve:

- the presentation of a syllabus that clearly identifies the goals of the course and its prerequisites, a schedule of major assignments and examinations, explicit criteria for how student work will be evaluated, and a clear articulation of ground rules for classroom interaction (How much active participation is expected of the student? Is attendance required? If the course meets over the lunch hour, is it acceptable to eat during class?);
- reminding students of the University's standards for academic integrity (see also pages 17-18);
- bringing new perspectives and insights to assigned readings and other text materials;
- regularly meeting class and punctuality in starting and dismissing class;

- prompt and responsible grading, with evaluative comments and opportunities for students to discuss their grades with the faculty person;
- adherence to the announced office hour schedule and offering as many avenues as possible for contact, including by telephone and e-mail;
- the use of appropriate technology as relevant both inside and outside the classroom to enhance communication between faculty and students (including Web pages, microphones, and overhead projectors);
- close oversight of teaching assistants (TAs), especially to ensure grading uniformity in large classes;
- facilitation of regular student evaluations of their teaching methods and materials, including mid-semester evaluations, as a means to create an atmosphere of shared responsibility within the classroom;
- when possible, avoiding prohibitive costs when ordering textbooks and other course materials;
- adhering to the published final examination schedule to avoid interfering with students' preparation for other classes.

Expectations and responsibilities of the students. Students must take responsibility for their own learning. Students also share with the instructor the responsibility for providing an environment conducive to learning.

Students should personally:

- be actively engaged with the material and with the process of education;
 - build their own knowledge and skills (faculty guide students to materials and methods, but the learning is up to the student);
 - attend all classes, both lecture and discussion sessions, and participate in discussions;
 - prepare for classes in accordance with the class syllabus;
 - be punctual in completing assignments;
 - behave in the classroom in a manner that demonstrates concern for other students;
 - share responsibility for the flow of communication concerning a course (this may involve regularly checking the course Web page for changing assignments and relevant information and responding to e-mail from instructors; using the e-mail address assigned by the University is the easiest way to ensure that instructors can reach all students in the class);
 - be familiar with and adhere to matters of academic integrity as identified by their School within the University;
 - participate in objective and constructive evaluations of the instructor and of the course (this helps to clarify problems and strengths that will help the instructor to improve the course in subsequent semesters).
- Special student concerns.** Students should take the initiative in discussing special arrangements with the instructor when for any reason they miss class. Students should also recognize that the collective needs of the faculty and other students in a course may outweigh individual preferences. Faculty should be sensitive to individual student needs for special arrangements:
- to accommodate disabilities, illnesses,

or academic or professional opportunities that interfere with usual class attendance or performance;

- for students who miss class because of religious holidays.

Responsibilities of the University administration. For its part, University administrators must:

- continue to provide facilities and to ensure adequate classroom and laboratory space that is stocked with sufficient appropriate equipment;
- give priority to supporting both faculty and students in teaching and learning;
- be responsive when normal communications between faculty and students break down by providing for discussion and negotiations;
- facilitate communications among various constituents of the University;
- facilitate the flow of visitors to the classroom by notifying faculty in advance of such matters in a timely fashion.

Where to get help

For instructors: The departmental chair, the Teaching Center, colleagues, and the relevant dean's office can offer useful advice on teaching techniques, materials, and methods.

For students: The instructor, TAs, and Cornerstone can provide guidance on how best to learn; the Writing Center can be a helpful resource for all sorts of written assignments. For complaints, contact the relevant dean's office for further advice.

Flexible Options

With more than 1,900 courses in more than 150 undergraduate programs, you can chart your own course at Washington University. Many major programs allow you to tailor a course of study that fits your particular needs. Depending on your interests and goals and the requirements of the school in which you are enrolled, you may even be able to design your own major.

If you're uncertain about which major to pursue, we provide the opportunity to explore your choices. To help you develop a program that best meets your long-term goals, you will work with an academic adviser who will get to know you and your academic requirements.

As an undergraduate student at Washington University, you have the opportunity to study across a variety of disciplines. Many majors incorporate courses from several disciplines. You also may be eligible as a third- or fourth-year student to enroll in specialized graduate courses.

You may choose to concentrate your major in one discipline, which allows you to focus on a particular area either specifically or broadly. Through a number of Combined Studies programs, you may elect to major in one subject and minor in another, which gives you an intensive focus in one area and a solid introduction to another. Students combine such areas as engineering and art, business and Russian, architecture and history, or computer science and visual communications.

Another Combined Studies option is to

major in two areas under one degree, such as a Bachelor of Arts degree in both history and French, earned within the College of Arts & Sciences. Alternatively, you may choose two majors from different schools earned under one degree, such as a Bachelor of Arts degree in English literature from the College of Arts & Sciences, with a second major in finance from the Olin School of Business.

Earning two degrees from two different schools also is an option that usually requires additional units to complete. Programs such as a Bachelor of Arts degree in mathematics from the College of Arts & Sciences and a Bachelor of Science degree in Mechanical Engineering from the School of Engineering & Applied Science are available.

University Scholars Program. The University Scholars Program gives selected students the opportunity to be admitted to undergraduate study and to a graduate program at the same time. This gives a select group of highly motivated students an early orientation to a career path that interests them. Before entering college, students apply for admission to both undergraduate and graduate degree programs.

Those accepted into the University Scholars Program will receive pre-professional advising and will be invited to attend special events, such as guest lectures, taking place within the graduate program. They will have a mentor from their graduate program. For students who enter Washington University in Fall 2006, graduate study is available through this program in architecture, art education, business, education, engineering, law, medicine, occupational therapy, physical therapy, and social work. In some programs, scholars can shorten the time needed to complete both degrees as opposed to pursuing them sequentially. **If your plans change, you are not required to attend the graduate program.**

To participate in the University Scholars Program, you must be admitted to Washington University and enter the University as a full-time student in the fall. In addition, you will need to complete the application for the University Scholars Program. The University Scholars Committee will select a group of finalists, who will be invited to visit campus during the spring of their senior year of high school, at the University's expense, to participate in special activities and interviews. Those who are named University Scholars will be notified shortly thereafter. All application forms are available on our Web site at admissions.wustl.edu. Additional information about the University Scholars Program is available at uscholars.wustl.edu.

Registration

Students register for classes online, using the University WebSTAC functions on the WU homepage (www.wustl.edu). Online registration for continuing students at Washington University begins in late-April for the following fall semester and in late-November for the spring semester. Prior to arrival on campus new students will receive information from their deans' offices outlining the procedures to follow for registration.

Class Size

More than three-fourths of Washington University's undergraduate classes range from 1 to 24 students. We believe smaller classes help you learn more through stimulating group discussion. Many of your classes may be larger at first, but they generally become smaller as you progress in your chosen field.

Depending on the department you choose, your classes may be smaller or larger than the overall average of 17 students per class.

Average Class Sizes by Level

(Introductory to Advanced)

Class Size	L-100	L-200	L-300	L-400
1-10	318	295	344	639
11-24	339	172	342	277
25-39	41	53	101	62
40-64	26	49	76	31
65-100	25	21	31	4
101-200	31	6	12	0
Over 200	14	5	2	0
Totals	794	601	908	1013

Undergraduate Degree Opportunities

College of Arts & Sciences

Majors, Second Majors, and Concentrations

African and African American Studies
 American Culture Studies
 Anthropology
 Arabic
 Archaeology
 Art History
 Biochemistry and Molecular Biology
 Biology
 Chemistry
 Chinese
 Classics/Ancient Studies
 Comparative Arts
 Comparative Literature
 Dance
 Drama
 Earth and Planetary Sciences
 East Asian Studies
 Economics
 Education
 Educational Studies
 English Literature
 Environmental Studies
 European Studies
 Film and Media Studies
 French
 German
 Geobiology
 Hebrew—Modern
 History
 Interdisciplinary Project in the Humanities
 International and Area Studies
 Italian
 Japanese
 Jewish, Islamic, and Near Eastern Studies
 Latin American Studies
 Linguistics
 Mathematics
 Medieval and Renaissance Studies
 Music
 Philosophy
 Philosophy, Neuroscience, and Psychology
 Physics
 Political Economy

Political Science
 Psychology
 Religious Studies
 Russian/Russian Studies
 Social Thought and Analysis
 Spanish
 Urban Studies
 Women and Gender Studies

Minors

Minors are offered in most of the above and in:

Ancient Studies
 Applied Statistics
 Biomedical Physics
 Children's Studies
 History and Philosophy of Science
 Institutional Social Analysis
 Jazz Studies
 Legal Studies
 Persian
 Renaissance Studies
 Text and Tradition
 Writing

Olin School of Business

Majors

Accounting
 Entrepreneurship
 Finance
 International Business
 Managerial Economics and Strategy
 Marketing
 Operations and Supply Chain Management
 Organization and Human Resources

Minor

Business

Sam Fox School, College of Architecture

Major and Minor

Architecture

Sam Fox School, College of Art

Majors

Digital Imaging and Photography
 Fashion Design
 Painting
 Printmaking/Drawing
 Sculpture
 Visual Communications—Advertising
 Design; Graphic Design; Illustration

Minor

Minors are offered in all of the above and in:
 Art

School of Engineering & Applied Science

Majors

Aerospace Engineering
 Biomedical Engineering
 Chemical Engineering
 Civil Engineering
 Computer Engineering
 Computer Science
 Electrical Engineering
 Mechanical Engineering
 Systems Science and Engineering

Second Majors

Computer Science
 Systems Science

Minors

Aerospace Engineering
 Bioinformatics
 Computer Science

Electrical Engineering
 Environmental Engineering Science
 Manufacturing Engineering
 Nanotechnology
 Robotics
 Structures

University College

University College is the evening division of Arts & Sciences and offers a wide range of courses in a variety of academic departments and interdisciplinary and professional areas of study. Part-time and full-time study in undergraduate degree programs, graduate degree programs, and certificate programs is available. In addition, University College offers several special credit programs, such as the College Credit Program for high school students, and special noncredit programs, such as short courses, writing workshops, and career workshops.

Faculty Dedicated to Teaching

In your courses, you will learn from renowned faculty who are dedicated to your undergraduate learning experience.

Washington University's faculty are distinguished both for their teaching and for their research and creative activities. Virtually all of the full-time teaching faculty hold the doctorate or final professional degree in their fields, and the same professors often teach both undergraduate and graduate courses.

Many faculty serve as undergraduate academic advisers, using their experience and knowledge to help you plan your courses. You'll have the opportunity to work with your professors on important research and independent study projects, to confer with them during their office hours, and to interact with them outside the classroom at lectures, at special events, and on field trips.

Some Honors Awarded to Faculty

- 1 Nobel Memorial Prize in Economic Sciences
- 1 Nobel Prize in Chemistry
- 2 National Book Critics Circle Awards
- 3 MacArthur Prize Fellowships
- 3 National Medals of Science
- 4 David and Lucile Packard Foundation Fellowships in Science and Engineering

Faculty Membership in Honorary Societies

American Academy and Institute of Arts and Letters
 American Academy of Arts and Sciences
 American Association for the Advancement of Medicine
 American Association for the Advancement of Science
 American Institute of Architects
 American Institute of Medical and Biological Engineering
 American Law Institute
 American Philosophical Society
 Institute of Electrical and Electronics Engineers
 Institute of Medicine
 National Academy of Engineering
 National Academy of Sciences

Academic Opportunities

At Washington University, the undergraduate experience offers a variety of exciting opportunities for exploring your intellectual interests.

Residential Colleges. All new students who live on campus reside in one of the residential colleges located on the "South 40" residence hall area. Each residential college comprises two or three buildings that form a single community. Each college has its own identity and offers residents a wide variety of programs and activities.

The newest residential colleges offer an opportunity for students to be part of a living and learning environment that includes a faculty member who lives in the college and provides academic counseling to students.

Research. Washington University is a leading research institution, and we encourage students to pursue research interests. Interested students may have the opportunity to collaborate with faculty on significant research projects in the studio, in the laboratory, or in the field. In addition to faculty research, there also are special research programs available, such as the Department of Biology's Summer Scholars Program in Biology and Biomedical Research.

Internships, cooperative study, and employment opportunities. These are available in a wide range of disciplines. The Career Center is a clearinghouse for information on internships and employment opportunities (see page 8). Students also can use alumni contacts to help craft a unique experience. You may choose to work locally or out of town in corporations, nonprofit organizations, or governmental agencies.

Information about a variety of public service internships and volunteer service opportunities is available from the Gephardt Institute for Public Service.

The Career Center offers the Engineering Cooperative Program (Co-op) to qualified engineering students. This program integrates professional work experience with formal academic training, practically preparing students for advanced positions in some of the more progressive companies in the United States. Recognition of the work experience is indicated by entries on your academic record.

Students will find many exciting opportunities for internships in Washington, D.C., at the world-class Washington University School of Medicine, and within the individual departments of the undergraduate schools. The Olin School of Business and the Department of Romance Languages and Literatures in Arts & Sciences offer internship programs in international business.

The Mildred Lane Kemper Art Museum offers opportunities for museum administration and curatorial internships. It also runs a volunteer student docent program, as well as employs approximately 40 Federal Work-Study students each year. Some of these positions qualify as community service.

Study abroad. International study provides a valuable learning experience that helps you gain knowledge and understanding

of cultures and societies other than your own. Each year, students study in more than 25 different countries. Through the Office of International and Area Studies in the College of Arts & Sciences (314/935-5958), students in Arts & Sciences can choose a program that best suits their interests and the requirements of their major or minor.

Each undergraduate school or college has its own Study Abroad policy and programs. Students in Business, Design & Visual Arts, and Engineering should consult with their Dean's Office.

In Arts & Sciences, semester and year-long Study Abroad programs are available in Australia, Britain, the Czech Republic, Chile, China, Egypt, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Japan, Kenya, Korea, the Netherlands, Russia, South Africa, Spain, and Taiwan, depending on your major.

Summer programs, many focusing on intensive language learning, are offered in China, Ecuador, France, Germany, Italy, Kenya, Mexico, and Spain. A four-week summer course in acting and directing is available at the Shakespeare's Globe Theatre in London.

Business students have the opportunity to participate in various Study Abroad programs offered both through the Olin School of Business and the College of Arts & Sciences. Olin's International Internship Program offers students the opportunity to combine classroom learning with an internship experience in Germany, Britain, or France. A summer program in London offers a unique opportunity to study international business in the center of the world's leading international financial center.

The Colleges of Architecture and Art each has a semester abroad program in Florence. The College of Art has a summer program there; the College of Architecture has a summer travel program in Europe. As part of the Architecture Study Abroad program, students can spend four and one-half weeks studying and documenting significant buildings and spaces in Barcelona, Berlin, Helsinki, and Paris. Senior architecture students may also study at the Denmark International Studies Program in Copenhagen, Denmark.

To study abroad on a semester or year-long program, you must be in your junior or senior year and have a B average. You also must be able to speak and write competently in the language of instruction (some programs offer instruction in English). Credit hours earned abroad will be determined upon your return to Washington University and according to your degree requirements; normally, you may earn 15-30 credit units toward the Bachelor of Arts degree or the Bachelor of Science degree.

Participating in a Washington University-sponsored or approved program may allow financial assistance to follow you abroad. Plan ahead if you're considering going abroad — talk to your adviser, declare a major, and contact the Study Abroad representative for your school at least one year before you intend to depart.

Our Community Outside the Campus

The University's central location in St. Louis makes it easy for you to explore our exciting city and surrounding metropolitan area. We're located just seven miles west of the famous Gateway Arch and downtown riverfront St. Louis, easily accessible by MetroLink, the city's light rail system.

The St. Louis metropolitan area is ranked as the 18th largest in the United States and ranks 13th in the number of Fortune 500 company headquarters.

Neighborhoods. St. Louis is a region of distinct neighborhoods, each with its own charm and character. Surrounding our suburban campus are the neighborhoods of University City, Clayton, and the Central West End, which are filled with parks, office buildings, historic homes, ethnic restaurants, museums, and interesting shops.

You will have the opportunity to spend leisure time in beautiful Forest Park, site of the 1904 World's Fair, which is now a sprawling municipal park located on the east side of the Danforth Campus. The park is home to the Saint Louis Zoo, Saint Louis Art Museum, the Missouri History Museum, and the St. Louis Science Center. It features numerous lakes, sports fields, and miles of wooded areas and bike paths, which thousands use for ice skating, canoeing, picnicking, soccer, softball, in-line skating, cycling, jogging, and walking. The park also features an 18-hole golf course, tennis courts, and handball courts.

Cultural advantages. St. Louis is home to exciting cultural treasures, such as the acclaimed Saint Louis Symphony Orchestra; the ornate Fox Theatre, which was once the second-largest movie theater in the United States and now hosts touring theatrical productions; the Black Repertory Theatre; the Repertory Theatre of St. Louis; the internationally recognized Saint Louis Art Museum, Pulitzer Foundation for the Arts, Contemporary Art Museum St. Louis, Laumeier Sculpture Park, and Opera Theatre of St. Louis; many other small theaters and experimental drama studios; UMB Bank Pavilion; dance groups; art film houses; art galleries and museums; and music and comedy clubs. Other area universities also sponsor a wide range of programs and performances.

Professional sports teams include the baseball Cardinals, the hockey Blues, and the football Rams.

Advantages of Being a Washington University Student

A complete undergraduate experience should include opportunities for learning outside the walls of a classroom, studio, or laboratory. That's why, at Washington University, you can broaden your experience by joining student organizations that range from musical to political to athletic, by attending special entertainment events, and by taking advan-

tage of a broad spectrum of campus services and programs.

Student Activities: Learning Beyond the Classroom

Students and faculty represent approximately 130 international locations and every ethnic group in the United States. This diverse population helps to contribute to the richness of cocurricular student-sponsored activities.

Campus groups, clubs, and organizations. As an undergraduate student, you can explore your interests, discover new experiences, and develop lasting friendships in our approximately 200 campus groups, clubs, and organizations. Student leaders administer an activities fund of approximately \$1.8 million for such student groups.

You may choose to get involved in:

- academic and preprofessional organizations
- community and volunteer service
- fraternity and sorority life
- intramural sports and recreation
- media and literary organizations
- multicultural opportunities
- music, dance, theater, and visual art
- politics and social action groups
- religious life
- student government

Information about student activities may be obtained through the Office of Student Activities, located in the Women's Building.

Other activities. Campus entertainment serves a wide variety of interests and provides opportunities to socialize. For example, there are film series, weekly coffeehouses, bands and other musical groups, and weekend parties and dances sponsored by various organizations. Theatrical performances, concerts, films, lectures, exhibitions, museum tours, and readings are frequently scheduled on campus and around the St. Louis area. Chief among them is the Assembly Series, which brings to campus leading scholars, authors, artists, and other public figures of national and international renown, whose campus visits complement the curriculum and broaden the classroom experience.

You can participate in such popular student-sponsored events as Thurtene Carnival, the nation's oldest and largest student-sponsored fair; Service First, Into the Streets, Campus Y programs, and STONE Soup, programs through which students are introduced to and become involved in community service; Black Anthology, a student-run theatrical production; Lunar New Year's Festival and Diwali (Indian Festival of Lights), both student-produced cultural performances; All Student Theatre, a student-produced production held outdoors; and WILD (Walk In Lay Down), a semiannual outdoor festival that features music, food, and games.

Varsity sports. You may choose to take part in varsity sports either as a team member or as a fan. Washington University is an NCAA Division III school and a founding member of the University Athletic Association (UAA), which includes Brandeis, Carnegie Mellon, Case Western Reserve, Chicago, Emory, New York, and Rochester universities.

The University's men's varsity sports are baseball, basketball, cross country, football, soccer, swimming/diving, tennis, and indoor and outdoor track and field. Women's varsity sports include basketball, cross country, soccer, softball, swimming/diving, tennis, indoor and outdoor track and field, and volleyball.

To learn more about the varsity sports programs or to contact a coach, visit the Athletic Web site: bearsports@wustl.edu.

Musical ensembles. You may audition and participate in University musical ensembles either for academic credit or as an extracurricular activity. The following ensembles perform publicly at least once a semester: Symphony Orchestra, Chamber Winds, Concert Choir, Jazz Band, Flute Choir, Opera Production, small chamber ensembles, and jazz combos.

Student ID Cards

New students may obtain a student identification card from the Office of Student Records. This card allows eligible students to withdraw books from the library, cash checks at Bank of America, use the Athletic Complex facilities, and purchase food on campus through the University meal plans. Additionally, the student ID card provides access for authorized students to various classroom buildings after hours, as well as the residence halls.

Campus Housing

Living in one of the University's residential colleges, located in an area called the South 40, provides an opportunity to get to know other students well and allows you to take full advantage of campus offerings. As a full-time freshman student, if you live outside the St. Louis metropolitan area (more than 25 miles away), you are required to live in a residential college. (The majority of other undergraduate students choose to live in University housing as well.)

For your first year, housing in one of our residence halls is guaranteed. You may choose to live in one of our limited number of single rooms or in a double room or in a triple room. Most first-year students live in double and triple rooms. Each floor has a resident adviser (RA), who provides support services and advising and arranges social and educational events. Each residential college has a residential college director (RCD).

Housing applications are mailed to you upon admission to the University. You must fill out the application and return it along with the required advance payment before a room assignment is made.

New students may occupy rooms on the first day of New Student Orientation and may stay until the day following the last day of final examinations. Residence halls are officially closed during winter recess.

The Office of Residential Life also manages a wide variety of other housing options for upper-class students ranging from suites to on- and off-campus apartments. The Village housing complex, located on the Northwest Corner of campus, provides living opportunities for groups of students who share common interests and goals. Each group, which ranges

in size from 4 to 24 members, has a faculty or staff mentor.

You may contact Residential Life for more information about student housing at 314/935-5050 or the Web site: reslife.wustl.edu.

Meal Plans

Meal plan options for resident students at Washington University consist of several different declining balance plans. Each plan provides students with a predetermined dollar amount from which food and beverage purchases are deducted throughout the year. Plans vary by price according to the student's dining needs, but first-year students are required to purchase one of the three larger plans.

Students who move off-campus are also required to purchase a meal plan. The Off-Campus Plan is much smaller than the resident meal plans and is designed to provide the convenience and savings of a meal plan to students who eat on campus only two or three times per week.

Kosher and fraternity meal plans are also available, with the fraternity plan being a requirement for members living in The Village.

For more information about meal plans, call Residential Life at 314/935-5050.

Parking & Transportation Services

Parking on campus requires a permit or pass. To learn more about the parking options available, contact Parking Services at parking@wustl.edu or (314) 935-5601.

There are many transportation options on and around campus. To learn more about transportation options in the area, contact Transportation Services at transportation@wustl.edu or (314) 935-4140. The parking and transportation office is located at the North Campus, 700 Rosedale Ct., St. Louis, MO 63112.

Off-campus University Housing

After your freshman year, you may choose to live more independently in one of the many University-owned apartment buildings located in nearby residential neighborhoods. Some of these buildings are wired for Internet access and the University phone system, and there is community-based staff available. In addition, there is an evening watchman patrol, and public transportation services are close and convenient. For more information on University-owned apartments, see the Off-campus Housing homepage at www.offcampushousing.wustl.edu or contact our management agent at Quadrangle Housing, 700 Rosedale Ct., St. Louis, MO 63112; 314/935-9511 or 1-800-874-4330; or fax 314/935-9515; or send e-mail to offcampushousing@wustl.edu.

Apartment Referral Service

The Apartment Referral Service (ARS) offices are a source of information and support for students who wish to live off-campus. The ARS provides apartment listings and can answer all your questions about leases, security and damage deposits, and other landlord-tenant concerns. The office also serves as a resource of community serv-

ices, such as schools, banks, transportation, sites to visit, and so forth.

If you have not made prior arrangements for housing, you should plan to arrive in St. Louis no later than five days to a week before registration to locate suitable accommodations. Late spring is the best time to search for housing for the fall; November or December is the best time to search for spring housing.

For more information, contact the Apartment Referral Service Office, Washington University, Campus Box 1016, 700 Rosedale Ct., St. Louis, MO 63112; 314/935-5092, or fax 314/935-7631; or send e-mail to ars@wustl.edu.

Student Support Services

Career Services

The staff members of the four on-campus career centers provide career advising and can help you improve your internship and job-seeking skills. They also offer workshops and seminars on résumé writing and interviewing and networking skills. The centers have comprehensive career resources libraries, offer on-campus recruitment interviews with major local, national, and international organizations, and assist you in finding employment after graduation. Because our career advisers work closely with you, they are able to tailor resources to fit your career objectives, interests, abilities, and preferences.

Washington University Career Center.

The Career Center helps students prepare for a lifetime of career management. We also offer personalized help to assist students as they search for an internship, engineering co-op or a first job. The Career Center serves all undergraduate students.

Start Your Search Here! Whether you are looking for a summer internship, a co-op, a full-time job, or a one- to two-year transitional job, we are here to help. We have many resources to support you on your search, including Career Options, our online job and internship database. We also offer Job and Internship Search Teams, special events, skill-building workshops, career fairs, Road Shows, networking receptions with alumni, and on-campus interviews and résumé referrals for job opportunities. Stop by our office today to get started.

Career Advising The Career Center offers one-on-one career guidance to students at any stage of their career planning process. The Career Center believes that one-on-one counseling is a critical component of each student's success. Students are encouraged to meet with a Career Advisor early in their academic career and at least once each year to establish a relationship. To schedule an advising appointment, please call 935-5930.

Locations We have two locations to serve undergraduate students: 157 Umrath Hall & 204 Lopata Hall. You can contact us via phone at (314) 935-5930, e-mail to careers@wustl.edu, or Web site at www.careers.wustl.edu.

College of Architecture Career Services. The College of Architecture has a Career

Development Director, Erika Fitzgibbon, who works with students at all levels. Workshops in interviews, résumés, portfolios, and career development strategies are provided for Architecture students throughout the academic year.

College of Art Career Services. The College of Art, in cooperation with the Career Center, offers a number of panels and workshops to assist students with post-graduation career planning. The "Life After Art School Seminar" taught by College of Art faculty covers a variety of topics specific to artists. Upper-level students also receive career guidance from faculty in the individual majors. Support in locating internships and residencies is available in Room 1 of Bixby Hall.

Weston Career Center. The Weston Career Center offers a full range of career-planning and job-search services and resources for students in the Olin School of Business. The center is also available to non-business students with business minor, math, or double major referred by other campus career centers for career, company, industry, and employment information relating to the business world.

Managing Your Career Strategy (MGT 200) is geared toward sophomore-level business students who wish to register for on-campus interviewing for summer internships and/or full-time jobs with corporations that visit campus. The course covers self-assessment, résumé- and cover-letter writing, networking, interviewing techniques, and information on the Olin School curriculum. Career panels with recent alumni provide students the opportunity to hear firsthand about a variety of careers and companies as well as to network with peers. Students are encouraged to work closely with the undergraduate adviser to design and implement a career plan suited to their interests and goals. The Career Preparation Series (CPS) is also available online and addresses career search strategy.

The Career Resources Library is well stocked with company and career information, reference materials, videotapes, and contact databases, including a large network of alumni who have volunteered to assist students.

Full-time, part-time, and summer job postings, as well as other useful information, are available via the center's homepage at www.olin.wustl.edu/wcc.

Additional Student Services

Cornerstone: The Center for Advanced Learning. Located on the first floor of Gregg Residence House on the South 40, Cornerstone offers a variety of academic and technology services and provides accommodations to students with disabilities. They provide course-specific mentors, study groups, and intensive intersession review programs in such gateway courses as chemistry, mathematics, and physics. They offer workshops on study skills, time management and note-taking, as well as evening walk-in help desks for calculus and writing. In addition, Cornerstone offers final exam work sessions for chemistry, math, and physics. Take advantage of their Tech Lab to

learn new software programs and access practice problem sets. Use their resource room and lobby area to study or relax. Services provided to students are free. Last year about 3,000 students participated in one or more Cornerstone programs. For more information, visit the Web site at

cornerstone.wustl.edu or call 314-935-5970.

Disability Resources. Cornerstone also administers Disability Resources, the official source for students with disabilities or suspected disabilities. If you have received accommodations in the past or have any physical or learning or attention disorder, you may request accommodations and services to insure equal access in the classroom. Visit the Web site at disability.wustl.edu or call Cornerstone at 314-935-5970 for more information. Disability Resources is located within Cornerstone, first floor Gregg Residence House, on the South 40.

Office for International Students and Scholars. If you're a student joining the University from a country other than the United States, this office can assist you through its orientation programs, by issuing certificates of eligibility (visa documents), and by offering a special program in the English Language Programs. In addition, the office provides personal and cross-cultural counseling and arranges social, cultural, and recreational activities that foster international understanding on campus.

The Office for International Students and Scholars is located on the second floor of the Stix International House at 6470 Forsyth Boulevard.

The Writing Center. This center provides free writing advice to all Washington University students. Tutors help with a variety of works in progress, including student papers, senior theses, and application essays. The Center also offers workshops for students (for example, "Writing a Research Paper") and for faculty who wish to assign more writing in their courses (for example, "Evaluating Student Writing").

The Center can help students at any stage of the writing process, including brainstorming, developing and clarifying an argument, organizing evidence, and improving style. Tutors do not edit or proofread papers; instead they emphasize the process of revision and teach students how to edit their own work. Students primarily are seen by appointment, although walk-ins will be accepted as the schedule allows. For more information or to schedule an appointment, call 314/935-4981 or stop by the Writing Center in Eads Hall, Room 111.

Reserve Officers Training Corps (ROTC)*

Military Science. Army ROTC is a program that develops leadership, management, and training skills regardless of your career plans. Those who successfully complete the program will earn a commission as a Second Lieutenant in the U.S. Army, Army Reserve, or Army National Guard. All students are eligible to participate in Army ROTC courses. Introductory courses are available in which you will develop confidence, self-esteem, and

motivation. The intent is to develop and refine your leadership traits and skills to ensure success. Instruction also includes the role of the military in national defense strategy. Once you accept a scholarship or enter the advanced courses (300 and 400 levels) you incur a military obligation. Military Science course work taken in the Army ROTC program does not count toward the A.B. degree in the College of Arts & Sciences.

For Army ROTC scholarship information, see page 21 of this *Bulletin*.

Aerospace Studies. Air Force Reserve Officers Training Corps (AFROTC) offers many opportunities for leadership and management training and development, leading to service in the U.S. Air Force. The program is open to all qualified Washington University students. The first two years of AFROTC are available to you without further obligation. When you enter the junior year in AFROTC, you become obligated to enter active duty in the Air Force. AFROTC commissions as second lieutenants all qualified students who complete the AFROTC program and receive a baccalaureate degree. The program is administered by the Department of Aerospace Studies, Saint Louis University, St. Louis, MO 63108. Aerospace Studies course work taken in the AFROTC program does not count toward the A.B. degree in the College of Arts & Sciences.

Campus Resources

Research Affiliations

Washington University is affiliated with the Central Institute for the Deaf, the Donald Danforth Plant Science Center, the Missouri Botanical Garden, the Newberry Library for Medieval and Renaissance Studies in Chicago, and the Saint Louis Zoo. The University also owns Tyson Research Center—2,000 acres located 20 miles west of the campus, which houses additional facilities for biology and physics. The Sam Fox School also houses the Newman Money Museum, a numismatic center.

In addition, the University has three interdisciplinary research institutes—the Division of Biology and Biomedical Sciences, the Center for Computational Biology, and the Institute of Biological and Medical Engineering—plus a number of interdisciplinary research centers on the Danforth and Medical campuses.

University Libraries

The University Libraries are a powerful academic resource with holdings of more than 3.6 million books, journals, maps, manuscripts, government documents, microforms, and AV titles. The University has 14 libraries (12 on the Danforth Campus, 1 at the medical school, and 1 at West Campus) plus extensive services and expert librarians whose first priority is helping students and faculty find the information they need.

The center of this rich network of libraries is the renovated John M. Olin Library, a 197,000-square-foot research library at the center of the Danforth Campus. Olin Library houses collections in humanities, social sciences, sciences, and engineering. It features a technology center, a café and 24-hour study space, display cases, compact shelving, reading rooms, and group studies.

New libraries are part of the recently completed Earth & Planetary Sciences building and the Sam Fox School of Design & Visual Arts (open Fall 2006). Dedicated libraries also serve biology, business, chemistry, East Asian studies, law, mathematics, the medical school, music, physics, and social work.

Using the Libraries' Web site at www.library.wustl.edu, students can see what books, journals, government documents, videotapes, or other materials are available. They can request titles, renew books, read full-text articles or reserve materials, search thousands of databases, chat with a reference librarian, or check out upcoming library events. Using a popular service called MOBIUS, students can borrow materials from 60 academic libraries across Missouri. Students can access the library Web site from a computer in the library, from a dorm room or apartment, or anywhere that Internet access is available.

Computers, printers, and copiers are available at each library. Laptop users can connect to the network wirelessly in Olin Library or in the Music, East Asian, and Earth & Planetary Sciences libraries. To learn more, visit www.library.wustl.edu/about/computer-services.html.

The University Libraries take part in programs to improve student research and writing skills and help faculty use technology in teaching.

Laboratories

The Department of Biology in Arts & Sciences has laboratories equipped for teaching and research in broad areas of biology—from molecular to field studies. Students and faculty have access to facilities at the Saint Louis Zoo and the Missouri Botanical Garden as well as our own 2,000-acre field station at Tyson. In addition, animal and plant growth facilities are available on our campus for research in advanced molecular and physiological studies. Numerous research laboratories at the Washington University School of Medicine and the Danforth Plant Science Center also introduce students who participate in faculty research groups to modern biomedical and biological instruments and techniques.

The Department of Chemistry in Arts & Sciences provides nine laboratories for undergraduate courses in general, organic, and physical chemistry and radiochemistry. Students also have access to a variety of visible, ultraviolet, infrared, and fluorescence optical as well as nuclear magnetic and electro-paramagnetic resonance spectrometers. Lab facilities provide training in laser spectroscopy, X-

* Present Department of Defense policy governing ROTC and AFROTC programs discriminates on the basis of sexual orientation; such discrimination is inconsistent with Washington University policy.

ray diffraction, microelectronics, and mass spectrometry. The department operates world-class nuclear magnetic resonance, mass spectroscopic, and computational laboratories and research support services. A new Arts & Sciences Laboratory Science Building houses 11 new state-of-the-art teaching laboratories.

The Department of Earth and Planetary Sciences in Arts & Sciences has teaching laboratories for environmental dynamics, remote sensing, petrology, geochemistry, and geophysics. The NASA regional planetary image facility supports digital-image computer-processing systems for earth and planetary studies.

The Department of Physics in Arts & Sciences has four undergraduate laboratories—one for the introductory course and three for advanced courses in optics, electronics, and physical measurements. Undergraduates also may work in laboratories on special projects in the McDonnell Center for the Space Sciences; in the Laboratory for Ultrasonics; in the Laboratory for Novel Carbon Materials; and with research groups in nuclear magnetic resonance, materials science, and high-energy astrophysics.

The School of Engineering & Applied Science has numerous undergraduate laboratories in biomedical engineering, chemical engineering, civil engineering, electrical and systems engineering, and mechanical and aerospace engineering. In addition to the undergraduate instructional laboratories in these areas, many of the students studying computer science and computer engineering have access to state-of-the-art research laboratories in a wide range of areas including networking and communications, advanced software systems, computer engineering, mobile computers, media and machines, and sensor networks.

Biomedical engineering laboratories support courses in quantitative physiology, biotechnology, bioinstrumentation, and signal analysis and protein structure. In addition, research opportunities are available in a variety of laboratories, including cell mechanics, biomechanics, cardiovascular biophysics, developmental mechanics, and cardiac imaging.

Chemical engineering laboratories are used by undergraduates to study the principles of thermodynamics, transfer, reaction engineering, bioprocessing, and environmental engineering science. Laboratory work includes the use of equipment to separate the components of gases, liquids, and soils; and bench- and pilot-scale reactor technology to study reactor optimization and scale up. Opportunities for undergraduates exist in various research laboratories to perform experiments.

Civil engineering laboratories support courses in environmental (aerosol, water treatment, and bioremediation), structural (steel, concrete, composite, and timber structural components), and geotechnical and earthquake engineering. The earthquake engineering laboratory includes a “shake table” which is a seismic simulator to simu-

late earthquake loads on structures. Additionally, the laboratory has four tabletop “shake tables” for students to study the effects of dynamic loads on self-built structures.

Electrical and systems engineering laboratories support courses in basic electrical circuits, advanced electronics and modern instrumentation, electrical machinery, power electronics, digital signal processing, optimization, decision making, linear and nonlinear control systems, robotics, and telecommunications. The systems engineering laboratories support courses in control systems, robotics, optimization, and transportation networks.

Mechanical and aerospace engineering laboratories support courses in dynamics and vibrations, fluid mechanics, mechanical engineering design, machine design, materials science, and thermal science. Combustion laboratories also allow students to participate in ongoing research programs.

Computing Facilities and Resources

Within the library, from computer centers on campus, and from your residence hall room, you can take advantage of computing resources, such as electronic mail, word processing, scientific applications, online library resources, and the Internet. The University’s extensive fiber-optic network connects more than 20,000 computers on campus.

Each undergraduate school has independent computing facilities designed to support and enhance your learning experience. Word processing, desktop publishing, spreadsheets, statistical programs, design programs, and other programs are available in Macintosh and PC formats. Each school’s computing facility offers students extended hours, with some open 24 hours. Support and assistance are always available.

All residence halls have computer connections to the Washington University network, as well as to the Internet. Most halls have computer centers that are open 24 hours, with Residential Computing Consultants available to assist you with problems or questions. If you own your own computer, hookup to the University network is available in all halls directly from your room (www.restech.wustl.edu).

Edison Theatre

Edison Theatre is the principal center for the performing arts on campus. Edison is home to OVATIONS!, an annual series that brings the highest-caliber national and international artists in music, dance, and theater to Washington University and the St. Louis community. Focusing on presentations that are interdisciplinary, multicultural, and/or experimental, OVATIONS! presents work intended to challenge, educate, and inspire. Edison is an affordable entertainment venue with student tickets to many events at half of the general public price.

Edison Theatre, along with the A.E. Hotchner Studio Theatre and Annelise Mertz Dance Studio, serves as home to an annual season of performing arts productions produced by the Performing Arts Department and Department of Music in Arts & Sci-

ences. In addition, the Edison hosts a vast array of student-produced events, including productions by ASHOKA, the Association of Black Students, and the Chinese Student Association, to name but a few.

Mildred Lane Kemper Art Museum

A part of the Sam Fox School of Design & Visual Arts, the Mildred Lane Kemper Art Museum is recognized as one of the finest university art museums in the country. The Museum’s new home is a vital meeting point for the University and larger St. Louis communities to consider the connections between art and culture to contemporary life. Each semester, the Museum presents a dynamic range of exhibitions and related public programs, including symposia, lectures, tours, films, concerts, and readings. The Kemper Art Museum is distinguished by its permanent collection of over 3,500 objects, which includes significant holdings of 19th-, 20th-, and 21st-century American and European paintings, sculpture, prints, photographs, and installations. A stroll through the permanent exhibition galleries and adjacent sculpture garden brings students into direct contact with major figures in the history of art, including George Caleb Bingham, Thomas Cole, Pablo Picasso, Alexander Calder, Jackson Pollock, Robert Rauschenberg, and Barbara Kruger. The Museum also oversees the Wulffing Collection of ancient Greek and Roman coins. The Museum offers undergraduates professional opportunities to serve as a museum docent or work for the Museum in a number of different capacities.

Design & Visual Arts Resources

The recently established Sam Fox School of Design & Visual Arts boasts a unique combination of academic, intellectual, and technological resources.

Art & Architecture Fabrication Workshop

Wood and metal workshop and darkroom facilities are an important part of the School’s curriculum and are used extensively for hands-on experimentation with materials, model building, full-scale detail construction, and furniture design and fabrication. The workshop equipment includes a laser cutter, CNC milling machines, and a 3-D printer.

Des Lee Gallery

Located in the heart of the historic Washington Avenue Loft District, this 2,500-square-foot facility is housed in the University Lofts, an eight-story, 100-year-old refurbished warehouse with living and studio space for emerging visual artists. The Des Lee is a noncommercial venue with a reputation for showing local and internationally known contemporary artists in addition to annual student exhibitions.

Nancy Spirtas Kranzberg Studio for the Illustrated Book

Established through the generous support of Nancy and Kenneth Kranzberg and in partnership with Washington University

Libraries, the Illustrated Book Studio brings together an unusual combination of scholarly and artistic practices. The Book Studio is dedicated to the study of narrative, the book, authorship, and publishing. Students explore the book form as artwork, consider narrative issues in image and text, and learn the craft of handmade books.

Visual Resources Collection

The Visual Resources Collection in the Department of Art History & Archaeology in Arts & Sciences holds over 200,000 slides and digital images encompassing a broad range of visual culture, particularly in the areas of art and architecture. Use of the collection is strictly limited to Washington University faculty and is by appointment only to ensure that service and space for your use will be available.

The Visual Resources Collection also plays a vital role in the development of Luna Insight, an innovative digital image management system. Luna Insight will allow faculty and students to search for, retrieve, and present digital materials in a visually dynamic image “workspace.” The Luna Insight system reflects the true potential of technology to provide broad and consistent access to digital resources, including images, film, and sound, while allowing its users to seek and create their own instructional materials.

Whitaker Foundation Learning Laboratory

The Whitaker Learning Laboratory will serve the collective digital media needs of the Sam Fox School. The Laboratory supports instruction and research initiatives of the students, faculty, and staff across the areas of design and visual arts by providing cross-platform resources in digital technologies. The Whitaker Foundation Learning Laboratory incorporates resources of the Carolyne Roehm Electronic Media Center.

Carolyne Roehm Electronic Media Center

The Carolyne Roehm Media Center is equipped with Apple dual processor G5's with 17-inch flat screen monitors, large format printers, Canon DV cameras, Canon digital cameras, and mobile video carts. The facilities support software including Final Cut Pro HD, Motion, DVD Studio, Logic Pro, Maya, Quark, Adobe Suite and Macromedia Suite.

The Center for the Humanities

The Center for the Humanities is dedicated to activities and projects that promote the humanities both on the campus and beyond. The Center sponsors a visiting writers series that includes biographers, essayists, arts critics, journalists, children's writers, science writers, and public intellectuals, all of whom read from their work and discuss their careers. It also conducts lectures and colloquia on the subject of translation and organizations and sponsors conferences. The Center sponsors an annual celebration of WU fac-

ulty book publications. In addition, it publishes the bimonthly *Belles Lettres: A Literary Review* and *The Figure in the Carpet*, which features a monthly literary calendar of St. Louis. The Center's library contains rich special collections that include children's books and magazines and mainstream and underground comics. For more information and to receive the Center's publications, call (314) 935-5576 or e-mail us at cenhum@artsci.wustl.edu.

Skandalaris Center for Entrepreneurial Studies

At Washington University, entrepreneurship is defined as “the process of seeing novel opportunities, acting energetically, and using limited resources and collaboration to create new value for others.”

Entrepreneurship is about collaboration and we believe the best collaboration happens among people with diverse experiences, perspectives, and interests. At Washington University, entrepreneurship is not just starting a business, but it is about fostering leaders who find new ways to benefit mankind. The Skandalaris Center was founded in 2004 when the Ewing Marion Kauffman Foundation selected Washington University for its Kauffman Campuses Initiative (KCI). Working with the Kauffman Foundation and the other seven KCI schools, the Center's multi-year commitment is to create a new model for entrepreneurship education that focuses on multidiscipline, cross-campus collaboration engaging all of Washington University's diverse population of students and faculty.

Murray Weidenbaum Center on the Economy, Government, and Public Policy

Founded in 1975, this center in Arts & Sciences has played a distinctive role in public policy research by providing timely, scholarly analyses of issues affecting America's system of private enterprise. Its mission is “to improve public understanding of the private enterprise system in a global context, thereby fostering a public policy environment in which the U.S. market economy can prosper.”

The center focuses on three important public policy areas: regulatory reform, environmental issues, and international competition. In addition, the center's studies on management issues provide valuable information to business executives and business school professors around the country.

Richard A. Gephardt Institute for Public Service

The Richard A. Gephardt Institute for Public Service, started in February 2005, is one of the newest parts of Washington University. The central mission of the Institute is to focus attention on public service — its value, its importance, its interest. The Institute encourages volunteering for public service and makes available information about a variety of volunteer opportunities, many of them in the St. Louis area. In addition, the Institute provides information about public service internships and public service careers. Through occasional lectures and other activities, the Institute focuses attention on

salient public issues and the necessity of public service.

Athletic Complex

Students may take advantage of the University's Athletic Complex, which includes an indoor swimming pool, fieldhouse, recreational gymnasiums, racquetball courts, handball courts, squash courts, saunas, indoor track, weight room, and fitness center.

For facility hours, call the 24-hour hotline at 314/935-4705.

Campus Store

The Washington University Campus Store is located in Mallinckrodt Center. The Campus Store offers a large selection of academic titles, as well as technical reference, popular fiction, nonfiction, travel, local interest, and more. Special orders are welcome. Students will find a selection of housing and school supplies, electronics, software, computer peripherals, and an extensive selection of art supplies. The store provides a full line of Washington University clothing and gifts, and is open nights and most weekends. Visit the Campus Store homepage at www.wustl.bkstr.com.

Student Health Services

Student Health Services staff members include licensed professionals in Medical Services, Mental Health Services, and Health Promotion Services. Please visit us in Forsyth House on the South 40, or visit our Web site at <http://shs.wustl.edu> for more information about each of our services and staff members.

Hours: Monday – Thursday 8 a.m. – 6 p.m., Friday 8 a.m. – 5 p.m., Saturday 10 a.m. – 2 p.m. Nursing staff is available until 11 p.m. Monday — Friday, and a nurse answer line is available to answer any medical questions a student may have when SHS is closed. For after-hours care, please call: 935-6666.

Medical Services staff members provide care for the evaluation and treatment of an illness or injury, preventative health care and health education, and nutrition, orthopedic, physical therapy, travel medicine, and women's health services. **All WU students should seek treatment at SHS first.** Any condition requiring specialized medical services will be referred to an appropriate community specialist. The WU student health insurance plan requires a referral any time care is not provided at SHS. **Call 935-6666 to schedule an appointment for medical care**, including allergy injections prescribed by your allergist, health consultations, for HIV or other STD testing, or for immunizations.

Appointments are also available for assessment, treatment, and referral for students who are struggling with **substance abuse**.

The **SHS dispensary (pharmacy)** is available to all students of WU and their dependents who participate in the student health insurance plan. Missouri law requires that all medication dispensed by the SHS dispensary is prescribed by one of the SHS providers. We cannot fill outside prescriptions.

The **SHS lab** provides full laboratory services. Approximately 20 tests can be performed

in the SHS lab. The remainder of all testing that is ordered by SHS is completed by Quest Diagnostics. Quest serves as our reference lab and is on the student health insurance plan as a preferred provider. The SHS lab can collect any test ordered by our providers.

All incoming students must provide **proof of immunization** for two Measles, Mumps, Rubella vaccines after the age of one year old. (A titer may be provided in lieu of the immunizations). A PPD skin test in the past 6 months is required for students entering WU from certain countries. This list of countries may be found on our Web site. We suggest all students also have Tetanus Diphtheria immunization within the past 5 years, Meningococcal Vaccine, Hepatitis A Vaccine series, Hepatitis B Vaccine series, and Varicella Vaccine. **Medical History Forms** are available online at shs.wustl.edu. Failure to complete the required forms will delay registration.

Mental Health Services staff members work with students to resolve personal and interpersonal difficulties, including conflicts with or worry about friends or family, concerns about eating or drinking patterns, and feelings of anxiety and depression. Although some concerns are more frequent than others, students' experiences are as varied as the students themselves. Staff members help each person figure out her or his own situation. Services include individual, group, and couples counseling, crisis counseling, psychiatric consultation, and referral for off-campus counseling. Call 935-6666 for an appointment.

Health Promotion Services staff members provide information and resources on issues of interest to WU students including alcohol and other drugs, weight and body image, sexual health, sleep, and stress; customize professional health education programs for groups; and work with groups of students dedicated to educating their peers about healthy decision making. Call 935-7139 for more information.

Important Information About Health Insurance

Washington University has a student health fee designed to improve the health and wellness of the entire Washington University community. All full-time Washington University students are automatically enrolled in the Student Health Insurance Plan upon completion of registration. Specific fees and co-pays apply to students using Medical Services and Mental Health Services. More information is available at <http://shs.wustl.edu>.

Campus Security

The Washington University campus is among the most attractive in the nation and enjoys a safe, relaxed atmosphere. Your personal safety and the security of your property while on campus is a shared responsibility. Washington University has made safety and security a priority through our commitment to a full-time professional police department, good lighting, shuttle services, emergency telephones, and ongoing educational safety awareness programs. The vast majority of crimes that occur on college campuses are crimes of opportunity, which can be prevented.

The best protection against crime is an informed, alert campus community. Washington University has developed several programs to help make your experience here a safe and secure one. An extensive network of emergency telephones, including more than 100 "blue light" telephones, are connected directly to the University Police Department and can alert the police to your exact location. In addition to the regular shuttle service, an evening walking or mobile Campus Circulator is available on the Danforth Campus.

The University Police Department is a full-service organization staffed by certified police officers who patrol the campus 24 hours a day throughout the entire year. The Police Department offers a variety of crime prevention programs including a high-security bicycle lock through a unique "lease-purchase" program, free personal-safety whistles, computer security tags, personal safety classes for women and men, property inventory services, and security surveys. For more information on these programs, check out the police Web site at police.wustl.edu.

In compliance with the Campus Crime Awareness and Security Act of 1990, Washington University publishes an annual report, *Safety and Security on the Danforth Campus—A Guide for Students, Faculty, and Staff*, which is available to all current and prospective students on the Danforth Campus and University employees on the Danforth and West campuses. To request a copy, contact the Washington University Police Department, Campus Box 1038, One Brookings Drive, St. Louis, MO 63130-4899, 314/935-9011. This information also is available on the Washington University Police Department Web site at police.wustl.edu.

Admission Procedures

Applying for Freshman Admission

Washington University encourages and gives full consideration to all applicants for admission, financial aid, and employment. The University does not discriminate in access to or treatment or employment in its programs and activities on the basis of race, color, age, religion, sex, sexual orientation, national origin, veteran status, or disability. Inquiries about compliance should be addressed to the University's Vice Chancellor for Human Resources, Washington University in St. Louis, Campus Box 1184, One Brookings Drive, St. Louis, MO 63130-4899, 314/935-5990.

The Committee on Admissions studies each undergraduate application, seeking talented students of aptitude and character who will not only benefit from the demands of a strong academic program but also contribute to the Washington University community. While the most important factors in the selection process include the rigor of high school courses, grades, class rank, and standardized test scores, personal talents and extracurricular activities also are considered.

As preparation for study at Washington University, the Office of Undergraduate Admissions requires all students to have a high-school diploma or equivalent. The following courses are recommended:

- four years of English
- four years of mathematics (calculus is recommended for the schools of Architecture, Business, and Engineering and for premedical students)
- three to four years of history and social sciences
- three to four years of laboratory sciences (chemistry and physics are recommended for the School of Engineering; biology, chemistry, and physics are recommended for biomedical engineering and premedical students)
- at least two years of a foreign language.

To compete with other applicants, you should have challenged yourself as much as possible within your high school curriculum. This includes taking honors, advanced placement, and international baccalaureate courses, if offered.

Admission procedures applicable for the five undergraduate programs are explained in a specific section for each school.

Submitting the Application

If you are a freshman applicant, you should submit the freshman application, the nonrefundable application fee, and various support materials, which include secondary school report and official transcript, teacher recommendation, standardized test scores, and midyear grade report. All application materials should be sent to the Office of Undergraduate Admissions (see page 1 for address). Alternatively, the application is available online at admissions.wustl.edu.

Entrance Examinations

All applicants to the freshman class are required to take either the Scholastic Assessment Test (SAT I) of the College Board or the American College Test (ACT). You should request a report of your test scores to be sent to the Office of Undergraduate Admissions. If you take an examination more than once, you will be evaluated on the basis of your highest individual scores. Test scores taken during your junior year in high school are acceptable, but we encourage you to take the test(s) during the first semester of your senior year. The College Board SAT II Tests are not required, but are recommended.

If English is your second language, you are required to submit results from the Test of English as a Foreign Language (TOEFL), in addition to the SAT or ACT. The test administered in January of your high school senior year will be the last one accepted for fall admission.

Notification and Response

The application for admission is evaluated after the application, the nonrefundable application fee, and all support materials are received. You are encouraged to submit your application early in your senior year of high school, but no later than the deadlines published in the Freshman Application Calendar.

For current application deadlines and details regarding decision plans, you may contact the Office of Undergraduate Admissions or visit admissions.wustl.edu.

Deferred Enrollment

If you are an admitted student who has submitted the enrollment deposit and you wish to begin your studies at a later date, you may defer enrollment at Washington University for a period of one year with an option to extend. Deferred enrollment is designed for students who wish to travel or work between high school and college. Courses taken during the deferred period normally will not be accepted for credit. Deferral should be requested in writing from the Office of Undergraduate Admissions. The Committee on Admissions will review your case and notify you of its decision. You must reapply for financial assistance during the application cycle immediately preceding the date of desired entry.

Admission of Undergraduate International Students

If you are a citizen of another country or are in the United States on a visa, you must submit an application for undergraduate admission, the nonrefundable application fee, the results of the Scholastic Assessment Test or American College Test, scores from the Test of English as a Foreign Language (TOEFL), detailed information about previous education, including original academic transcripts or certified copies, a description of the grading system, examination results, school-leaving certificates, certified English translations of all of the above, and two letters of recommendation. All applicants must also submit verification of the availability of funds in U.S. dollars to cover tuition and living expenses. All academic and financial credentials should be sent to the Director of International Recruitment in the Office of Undergraduate Admissions.

Admission Procedures by School

Arts & Sciences

You should follow the general admission procedures.

Architecture

You should follow the general admission procedures and should pursue mathematics for all four years of high school; calculus is strongly recommended. We strongly recommend studio art electives in lieu of drafting courses. You are strongly encouraged to submit a portfolio with samples of visual arts work completed either independently or in studio courses.

Although a portfolio is optional for entering freshmen, it is required if you wish to be considered for the Fitzgibbon Scholarship.

A slide portfolio should include good examples of artwork in any media (sculpture, painting, photography, etc.), as well as several drawings from direct observation of the still life, landscape, or figure. Rough sketches from notebooks are acceptable, as are exam-

ples of construction and furniture.

If you have questions, you should contact the Architecture liaison in the Office of Undergraduate Admissions.

Art

You should follow the general admission procedures. In addition to your completed application, you are encouraged to submit a slide portfolio with samples of your artwork. Although a portfolio is optional for entering freshmen, it is required if you wish to be considered for the Conway or Proetz Scholarship. You may also simply wish to have your artwork considered along with your other application materials.

Portfolios should contain 10 to 15 good-quality color slides of work completed in the last two years. Your name and Social Security number should be on each slide, and you should enclose an envelope with proper postage to ensure the return of your portfolio. (*While reasonable care will be taken to ensure the proper handling of your portfolio, the University is not responsible for loss or damage.*)

Your slide portfolio should include good examples of artwork in any media (sculpture, painting, photography, etc.), as well as several drawings from direct observation of the still life, landscape, or figure. Rough sketches from notebooks are acceptable. The scholarship committee is interested in your imagination and creativity, as well as your technical skills. If you have questions, you should contact the Art liaison in the Office of Undergraduate Admissions.

Business

You should follow the general admission procedures.

Engineering

You should follow the general admission procedures.

Transfer Admission

Washington University welcomes the application of eligible transfer students as space and faculty resources permit. Students in college transfer programs at community and junior colleges, as well as students from four-year institutions, are encouraged to apply for admission.

If you are applying as a transfer student, you are expected to present a strong and consistent record of academic achievement. Because requirements for degrees vary from institution to institution, you are advised to consult with the Office of Undergraduate Admissions early in your academic career to minimize problems with the transfer of credits.

If you are admitted from an accredited institution, you will be given full credit for work satisfactorily completed with a grade of C or better, if the work is equivalent to that accepted for graduation at Washington University. You will be advised of the transferability of credits upon admission. Although credits earned in courses may transfer, the grades earned do not.

You should apply for transfer admission one semester in advance of the semester for which you wish to enroll. We encourage first-

semester students to complete a full year at the current college. For current application deadlines, please contact the Office of Undergraduate Admissions.

Applicants must submit their high school transcripts, the application, official transcripts of all previous college work, standardized test scores (SAT or ACT), two letters of recommendation, and the nonrefundable application fee to the Office of Undergraduate Admissions.

If you wish to be considered for financial assistance, you must file the Financial Aid Profile. Detailed information on financial support can be found beginning on page 20 of this *Bulletin*.

Transfer admission information for individual schools is listed as follows.

Transferring into Arts & Sciences

Each year, in both fall and spring semesters, a number of students from other colleges and universities transfer into the College of Arts & Sciences. Upon their admission the transfer student adviser reviews and evaluates their previous academic work. Full credit is normally granted for courses taken at accredited institutions provided that the University offers comparable courses and the student has completed the courses with a grade of C or better. In addition, transfer credit may be counted where applicable and upon approval toward major or minor requirements. Transfer students must be enrolled for at least three consecutive full-time semesters to satisfy the residency requirement. They must earn no fewer than 45 units during that time.

All transfer students initially consult with an academic adviser. Once they declare a major, they meet with an adviser in the major department. The full range of curricular opportunities offered through the College, including overseas programs, is open to transfer students when prerequisites are satisfied. You should direct specific questions about transfer credit and course sequences at Washington University to the College of Arts & Sciences.

Transferring into Architecture

Places for transfer students are extremely limited and require strong performance in an arts and sciences curriculum, as well as preparation in the visual arts—preferably freehand drawing and 3-D design. Due to the sequence of design studios and their content, transfer admission is normally considered only into the sophomore year (200-level design studios); admission into other levels is extremely rare.

A transfer applicant into the College of Architecture should consult with the associate dean of the College as early as possible to assist in appropriate placement. It is advisable that the transfer applicant have demonstrated experience in two-dimensional and three-dimensional design. Your previous work should parallel as closely as possible the course work outlined on pages 290–303 of this *Bulletin*.

If you have taken studio courses (design, drawing, and others) at other schools, your application is best accompanied by a portfo-

lio with samples of that work. The associate dean of the College will determine at which point in the curriculum you may be admitted.

If you have not taken studio courses, we recommend that you take the equivalent of Washington University's first-year architecture curriculum at your other college or university and then apply for admission into the sophomore class, Introduction to Design Processes III, and that you follow the Office of Undergraduate Admissions' general admission procedures.

Transferring into Art

The number of studio art credits you already have earned, combined with an evaluation of your portfolio, determines the year and semester level at which you are admitted. You must have a minimum number of appropriate studio art credit units to be placed at a particular level in the program, as follows:

2nd semester, 1st year	=	6 units
1st semester, 2nd year	=	15 units
2nd semester, 2nd year	=	21 units
1st semester, 3rd year	=	30 units

As much as possible, the studio art courses taken at other institutions should correspond to the core drawing and design program at Washington University.

Portfolio Requirements

- Twenty color slides of completed work
- Examples of work from basic drawing and design classes that indicate your technical and conceptual level of accomplishment—some drawing should be from direct observation
- If possible, good examples of work in different media to demonstrate a range of art experiences
- If applying to the third-year level, one-half of the work should be in the area of your intended major.

Portfolio Instructions

- Mailed portfolios must consist of color slides submitted in a slide sleeve, and each slide should include your name and Social Security number. Portfolios should be mailed to the Art liaison in the Office of Undergraduate Admissions. (*Slides will be returned only if a return envelope with proper postage is included.*)
- Original work can be presented only if you plan to deliver and pick up the portfolio. Your name and Social Security number should be included on the back of each piece, with name, address, and telephone number on the outside of the portfolio. Work does not need to be matted, nor should it be in frames or under glass. Portfolios can be delivered to the Office of the Associate Dean of Students, Room 1, Bixby Hall. (*While reasonable care will be taken to ensure proper handling of the portfolio, the University is not responsible for loss or damage.*)
- To assist in appropriate placement, an interview with the associate dean, while not required, is strongly recommended.

Transferring into Business

Your previous course work should parallel as closely as possible the course work outlined on pages 275-286 of this Bulletin. This course work should include accounting, calculus, English composition, microeconomics, macroeconomics, and calculus-based statistics.

Transferring into Engineering

You may apply for admission for either the fall or the spring semester if you have completed a minimum of one year of college work elsewhere. You must demonstrate academic achievement (grade average of B or better) with strength in mathematics (calculus) and science (chemistry/physics). An evaluation of your record will be made to determine the transferability of college credit. Grades earned do not transfer, and you must earn a letter grade of C or better for the course credit to transfer. For English composition to transfer, a letter grade of B or better is required for the course credit to transfer. Courses taken pass/fail do not transfer.

To be recommended for any bachelor's degree, you must satisfy applicable requirements of the School of Engineering & Applied Science shown under Degree Requirements on pages 317-393.

Transfer students and undergraduates in the preprofessional division of the School of Engineering & Applied Science who are seeking professional degrees and who satisfy the entrance requirements listed below are admitted automatically to the Sever Institute of Technology.

- You must have earned at least 50 acceptable units applicable to the professional degree sought.
- You must have completed a sequence of courses in calculus, including ordinary differential equations.
- If your major is aerospace, civil, computer, electrical, or mechanical engineering, you must have completed a one-year (two-semester or three-quarter) sequence in physics.
- If your major is biomedical engineering or chemical engineering, you must have completed a one-year (two-semester or three-quarter) sequence in chemistry.
- If your major is computer science or systems science and engineering, you must have completed a one-year (two-semester or three-quarter) sequence in either physics or chemistry.

Pre-Matriculation Units

Pre-matriculation units are units of credit earned before you enroll as a first-year student at Washington University, which can be applied toward a Washington University degree. Sources for pre-matriculation units include Advanced Placement (AP) examinations, International Baccalaureate (IB), British Advanced (A) Levels, and college credit.

A student in the College of Arts & Sciences may be awarded up to 15 units of credit from all sources—standardized placement tests and college course work—that were completed prior to enrollment as a

first-year student at Washington University. The units of credit awarded from these sources do not apply toward the distribution requirements.

A student should submit official score reports from AP examinations, College Board Achievement and Aptitude Tests, the International Baccalaureate (higher-level scores), and British A-Level examinations. All appropriate test scores will have course equivalents assigned to them and noted on the transcript. However, a maximum of 15 units of credit will be awarded provided credit has not been already designated as the result of college course work having been transferred as well.

Grades for courses taken at another college or university do not transfer. A maximum of 15 units of credit may be awarded for college course work done prior to matriculation provided no other pre-matriculation credits have been awarded. In the College of Arts & Sciences, course work completed at another college or university prior to matriculation must meet the following standards:

- Enrolled in primarily by matriculated college students
- Taught by college faculty
- Taught on a college campus
- Taken after the junior year in high school
- The course is not on the high school transcript and did not count toward the high school diploma.
- The course was taken at a fully accredited college or university.

The 15-unit cap does not apply to the other undergraduate schools. See this page for more information about AP examinations and International Baccalaureate.

Secondary School Course Work

Washington University does not recognize credit for courses taken in high schools and taught by secondary instructors, even when offered under the aegis of a university. The University accepts credit for courses taken at and taught by faculty of a college or university, provided the course has not been credited toward the high school diploma.

The College of Arts & Sciences accepts credit only for college course work taken after the junior year of high school.

Proficiency and Placement Examinations

Students in the College of Arts & Sciences will have all accepted pre-matriculation work noted on their transcript so they may go directly into advanced courses, but the maximum number of pre-matriculation units awarded will be 15 units. Sources for pre-matriculation units are Advanced Placement exams, International Baccalaureate Exams, British A-Level grades, and college credit.

Superior results on proficiency and placement examinations allow you to enter advanced courses at the beginning of your college career, to fulfill some requirements for a major or a minor by examination rather than by course work, and to earn credit toward your degree.

Four types of examinations are recognized:

Washington University Placement Examinations. These placement examinations are administered by various departments and have different requirements for advanced placement.

International Baccalaureate. If you have earned the International Baccalaureate diploma, or you have successfully passed examinations in the program, you should consult a dean in your undergraduate division of the University about advanced placement and credit. Scores may be used for placement or granting of degree credit, according to the recommendations of the various departments. Subsidiary-level scores are not recognized.

British Advanced (A) Levels. These grades may be used for placement or granting of degree credit, according to the recommendations of the various departments.

Advanced Placement (AP) Examinations. These are used for placement, partial fulfillment of major or minor requirements, and the granting of degree credit, according to the recommendations of the various departments. Examinations are given by the College Board in May of each year for secondary school students who have been enrolled in a college-level course in the same subject or subjects of the exam. For the most current policy information, visit the Web site: http://artsci.wustl.edu/~college/First_Year/Placement/Advanced/

You may obtain information about these exams from the College Board Advanced Placement Examinations, Box 592, Princeton, NJ 08540 or by calling 1-888-225-5427.

SAT II Tests. These examinations in modern languages are administered by the College Board. They are required for study in certain languages.

College Level Examination Program (CLEP) scores are not accepted for credit or placement.

Accounting: British A-Levels

Advanced Level grades of A, B, C, & D to be awarded 3 units of credit for ACCT 2610.

Arabic: British A-Levels, University Placement Exam

Please see the departmental policy (Asian and Near Eastern Languages and Literatures) for more information.

Art: General Portfolio, Advanced Placement

A score of 5 on the AP examination in Art: General Portfolio, Art 2-D, or Art 3-D earns 3 units of art elective credit.

Art History: Advanced Placement

A score of 4 or 5 on the AP examination earns 3 units of credit for introductory art history upon completion of a 300- or 400-level art history course at the University with a grade of B or better.

Biology: Advanced Placement, International Baccalaureate, British A-Levels

A score of 4 or 5 on the AP examination or a score of 6 or 7 on the International Bac-

calaureate examination earns 6 units of credit for Biol 100A (elective credit). Students who plan to major in Biology or who are pre-med normally will enroll in Biol 2960 in the Spring of freshman year, Biol 2970 in the Fall of sophomore year, and Biol 3050 in the spring of the sophomore year. Grades of A or B on the British A-Level examination will be awarded 3 units of credit equivalent to Biol 100A.

Chemistry: Advanced Placement, International Baccalaureate, University Examination, British A-Levels

A score of 5 on the AP examination earns 10 units of credit equivalent to Chem 111A, 112A, 151, and 152 and will allow you to enroll in Chem 251. A score of 4 on the AP examination earns 6 units of elective credit, which do not correspond to any specific course. Grades of A or B on the upper level International Baccalaureate examination to be awarded 10 units of elective credit. Or, you may take the University departmental placement examination given during the first week of classes each fall. Grades of A or B on the British A-Level examination will be awarded 10 units of elective credit.

Classical Languages: Advanced Placement, Achievement Tests

To determine placement, the Department of Classics relies primarily on its own placement test, administered during registration week. Grades from Latin and Greek courses taken in secondary school, College Board Achievement Tests, the International Baccalaureate, and AP examinations may also be taken into consideration.

The department awards back credit based on AP examinations. Students who earned a score of 4 or 5 on the Latin AP exam may receive 6 units of back credit on completion of Latin 317C with a grade of B or better.

Computer Science: Advanced Placement, International Baccalaureate, British A-Levels

A score of 4 or 5 on the AB Computer Science AP examination earns 4 units of credit equivalent to CSE 126. Students also have the option of taking a CSE 131 placement exam. Any student who passes the placement exam will receive 4 units of credit for CSE 131 instead of the CSE 126 credit. No credit is given for the A Computer Science AP, International Baccalaureate, or British A-Level examination, but a student can take the CSE 131 placement exam. Contact the CSE office at 935-6160 for further information.

Upon request, the computer science department will evaluate a student for proficiency for any of our introductory courses. If a student is determined to be proficient in a given course, that course will be waived (without awarding credit) in the student's degree requirements, and the student will be offered guidance in selecting a more advanced course.

Economics: Advanced Placement, International Baccalaureate, British A-Levels

A score of 5 on the AP examination in microeconomics or macroeconomics or a score of 7 or 6 on the International Baccalaureate examination places a student into Econ 401 or 402. Completion of Econ 401 or 402 with a B- or better earns 3 units equivalent to Econ 103B or 104B. A score of 4 allows you to enroll in Econ 401 or 402 or in any 300-level course with an Econ 103B prerequisite, so long as the other prerequisites, such as calculus, are met; no units of credit are awarded. A Grade of A on the British A-Level examination is awarded 3 units of credit for 103B or 104B contingent upon completion of 401 or 402 with a B- or better.

English Composition: Advanced Placement, International Baccalaureate, SAT II, British A-Level

A score of 5 on the AP examination (Composition or Literature) or a score of 7 on the International Baccalaureate examination earns 3 units of elective credit contingent on completion of E Comp 100 with a grade of B or better. Engineering students follow a different policy than the one described here and should refer to page 320. No credit or placement is given for the British A-Level examination.

Environmental Studies: Advanced Placement

A score of 4 or 5 on the Environmental Studies AP examination earns 3 units of elective credit contingent on completion of a 300- or 400-level Environmental Studies course with a grade of B or better.

French: Advanced Placement, International Baccalaureate, British A-Levels, SAT II, University Placement Exam

A score of 5 on the AP examination (Language or Literature) earns 6 units of credit equivalent to Fr 102D and 201D. Students may enroll in a 300-level course conducted in the language. A score of 4 on the AP examination automatically grants 3 credits for Fr 102D, and gives another 3 extra credits for Fr 201D contingent upon satisfactory completion of a 300-level course—other than conversation—conducted in the language. A score of 3 on the AP examination earns 6 units of credit equivalent to Fr 102D and 201D, contingent upon completion of a 300-level course with a grade of B or better—other than conversation—conducted in the language. A grade of A on the British A-Level examination to be awarded 6 units for Fr 201D with 3 additional units being granted upon completion of a 300-level course (other than conversation). A grade of B on the British A-Level examination to be awarded 3 units upon successful completion of a 300-level course.

Scores from the Modern Language Achievement Test (SAT II) can be used

for placement. This exam is taken while in secondary school or in July following graduation. The College Board Bulletin of Information provides complete details as to dates, centers, and instructions for taking the tests. No automatic credit is awarded for the International Baccalaureate exam. Students must take the university placement exam, which is offered prior to the start of fall semester classes. Students who place into and successfully complete higher level courses can earn up to 6 units of back credit for preceding courses.

German: Advanced Placement, SAT II, International Baccalaureate, British A-Levels, University Placement Exam

A score of 5 on the AP examination earns 3 units of credit for Ger 102D and 3 units for Ger 210D awarded automatically; students may enroll in a 300-level course: Ger 301D, 302D, 313, 340C (Literature in Translation and German Tutorial). A score of 4 on the AP examination earns 3 units of credit for Ger 102D automatically; an additional 3 units of credit for Ger 210D is awarded upon satisfactory completion of Ger 301D. A score of 3 earns 3 units of credit for Ger 102D and 3 units for Ger 210D, contingent upon satisfactory completion of Ger 301D.

Scores from the Modern Language Achievement Test (SAT II) can be used for placement. This exam is taken while in secondary school or in July following graduation. The College Board Bulletin of Information provides complete details as to dates, centers, and instructions for taking the tests. Students who have completed German courses in the International Baccalaureate or British A-Level program should take the university placement exam. Students who place into and complete these courses with a B– or better will receive the following credit:

Ger 210D—3 units for Ger 102D

Ger 301D—3 units for Ger 102D, and 3 units for Ger 210D

Ger 302D—3 units for Ger 102D, and 3 units for Ger 210D

History: Advanced Placement, International Baccalaureate, British A-Levels

A score of 4 or 5 on the American History AP examination earns 3 units of credit equivalent to History 163. A score of 4 or 5 on the European History AP examination earns 3 units of credit equivalent to History 102. A score of 4 or 5 on the World History AP examination earns 3 units of credit equivalent to History 164. AP credits fulfill introductory course requirements for the History major and minor. Grades of A or B on the British A-Level examination earn 3 units of elective credit. No credit or placement is awarded for International Baccalaureate.

Italian: International Baccalaureate, University Placement Exam

Scores from the Modern Language Achievement Test (SAT II) can be used for placement. This exam is taken while in secondary school or in July following graduation. The

College Board Bulletin of Information provides complete details as to dates, centers, and instructions for taking the tests. No automatic credit is awarded for the International Baccalaureate exam. Students must take the university placement exam, which is offered prior to the start of fall semester classes. Students who place into and successfully complete higher level courses can earn up to 6 units of back credit for preceding courses.

Latin: Advanced Placement, International Baccalaureate, British A-Levels, University Placement Exam

Information about the Advanced Placement for Latin can be found online at artsci.wustl.edu/~college/first-year/Placement/Advanced.

Mathematics: Advanced Placement, International Baccalaureate, British A-Levels, University Placement Exam

The Mathematics Department gives a placement exam, available online and also during the Fall orientation period. We ask that all entering students planning to enroll in a calculus course (except those with an AP score of 5) take the placement exam. This gives us one more piece of information to try to ensure correct placement into the calculus sequence. Only an AP score of 5 receives automatic credit and placement into the calculus sequence.

Students with scores of 5 on the BC calculus examination are awarded 6 units of credit for Math 131-132 and placed into Math 233. Students with scores of 5 on the AB calculus examination are awarded 3 units of credit for Math 131 and placed into Math 132.

Students with BC scores of 4 are recommended for Math 233; students with AB scores of 4 are recommended for Math 132. Placement for other students is recommended in consultation with an adviser, based on the math department's placement test score and other information in the students' records.

Students with a 5 on the AP statistics examination will receive 3 units of credit for Math 1011.

Upon completing a course in the calculus sequence (Math 131, 132, 233) with a grade of C+ or better, students are eligible to receive credit for the preceding courses in the calculus sequence assuming you do not already have credit for earlier courses (for example, by transfer from another university).

A score of 6 or 7 on the International Baccalaureate exam earns 3 units of credit for Math 131.

British A-Level grades of A and B for Mathematics will be awarded 3 units of credit for Math 131 automatically. An Advanced Level grade of C for Mathematics will only receive credit for Math 131 upon successful completion of Math 132.

Advanced Level grades of A and B for Mathematics (further) will be awarded 6 units of credit for Math 131 and Math 132

automatically. An Advanced Level grade of C for Mathematics (further) will only receive credit for Math 131-132 upon successful completion of Math 233 (or for Math 131 contingent on completion of Math 132).

Music: Advanced Placement, International Baccalaureate, British A-Levels, University Placement Examination

A score of 4 or 5 on the AP examination (theory or literature/listening) or a score of 6 or 7 on the International Baccalaureate earns 3 units of elective credit for students who do not major or minor in music. This credit does not correspond to any specific course. Students must petition the College of Arts & Sciences to have this credit count toward the distribution requirement. This credit does not earn advanced placement in music courses and may not count toward the requirement for music majors and minors.

Instrumental placement is by audition, for which no units of credit are awarded.

Norwegian: International Baccalaureate

No credit awarded for the International Baccalaureate exam.

Philosophy: International Baccalaureate

A score of 7 on the higher-level examination of the International Baccalaureate will result in 3 units of credit for Phil 110F.

Physics: Advanced Placement, International Baccalaureate, British A-Levels

Placement and advanced credit will be awarded according to the following:

For Test B. Advanced placement scores of 3 qualify for 4 units of Physics 113A. Students who have received a score of 5 qualify for 6 units in lieu of Physics 113A and 114A and may take an advanced course.

For Test C. Advanced placement scores of 4 or 5 may be used for full or partial credit for Physics 113A or 114A. Students who have receive a 4 or 5 for both the mechanics and the electricity and magnetism sections qualify for 6 units of credit in lieu of Physics 113A and 114A and may take an advanced course. Students who receive a 4 or 5 on Test C for the mechanics section only qualify for 3 units of credit in lieu of Physics 117A and may enroll in Physics 118A. Students who receive a 4 or 5 on the electricity and magnetism section only qualify for 3 units of credit in lieu of Physics 118A and may enroll in Physics 117A. Advanced course means Physics 217, 312, 316, 321, 351, 411, or 421.

A score of 7 on the higher-level examination of the International Baccalaureate will result in 6 units of credit for Physics 101A and 102A. A score of 6 or 5 on the higher-level examination of the International Baccalaureate will result in 3 units of credit for Physics 101A.

A British A-Level grade of A to be awarded 3 units each for Physics 113A and Physics 114A. A grade of B to be awarded

3 units for Physics 113A.

If you have not taken the AP examination but seek advanced placement and/or credit, you should consult with the department during registration.

Political Science: Advanced Placement

A score of 5 on the AP examination (American politics or comparative politics) earns 3 units of credit for Pol Sci 101B or 102B. A score of 4 earns 3 units of credit contingent upon completion of a 300- or 400-level course in American or comparative politics at the University with a grade of B or better. You can get AP credit for American politics or comparative politics but not both. AP credit will not count toward the 30 graded units needed for the major.

Psychology: Advanced Placement, International Baccalaureate, British A-Levels

No credit or placement is awarded for Advanced Placement, International Baccalaureate, and British A-level examinations.

Social Anthropology: International Baccalaureate

Credit is evaluated on an individual basis by the Anthropology department.

Spanish: Advanced Placement, International Baccalaureate, British A-Levels

A score of 5 on the AP examination (Language or Literature) earns 6 units of credit equivalent to Span 102D and 201D. Students may enroll in a 300-level course conducted in the language. A score of 4 on the AP examination automatically grants 3 credits for Span 102D, and gives another 3 extra credits for Span 201D contingent upon satisfactory completion of a 300-level course—other than conversation—conducted in the language. A score of 3 on the AP examination earns 6 units of credit equivalent to Span 102D and 201D, contingent upon completion of a 300-level course with a grade of B or better—other than conversation—conducted in the language. A grade of A on the British A-Level examination to be awarded 6 units for Span 201D with 3 additional units being granted upon completion of a 300-level course (other than conversation). A grade of B on the British A-Level examination to be awarded 3 units upon successful completion of a 300-level course.

Scores from the Modern Language Achievement Test (SAT II) can be used for placement. This exam is taken while in secondary school or in July following graduation. The College Board Bulletin of Information provides complete details as to dates, centers, and instructions for taking the tests. No automatic credit is awarded for the International Baccalaureate exam. Students must take the university placement exam, which is offered prior to the start of fall semester classes. Students who place into and successfully complete higher level courses can earn up to 6 units of back credit for preceding courses.

Statistics: Advanced Placement, International Baccalaureate, British A-Levels, University Placement Exam

Information about the Advanced Placement for Statistics can be found online at artsci.wustl.edu/~college/first-year/Placement/Advanced.

University Policies

Medical Examinations

As an entering student, you must satisfy several medical requirements. You must submit a report of a physician's medical examination, including proof of a skin test for tuberculosis within six months prior to registration and a record of all current immunizations. Specifically, you must provide evidence of immunity to rubeola, rubella, and mumps by providing a physician's statement attesting to either a positive titer or an immunization subsequent to age 15 months.

If you fail to comply with these requirements prior to registration, you will be required to take the examination at the Student Health Services and obtain vaccinations for measles, mumps, and rubella, if there is no evidence of immunity. You will be assessed the cost of the examination and tests or vaccinations. You will be unable to complete registration for classes until all health requirements have been satisfied.

If you are unimmunized, you may be barred from classes and from all University facilities, including housing units, if in the judgment of the University your continued presence would pose a health risk to yourself or to the University community.

Student Conduct

The *University Student Judicial Code* addresses conduct expectations and discipline procedures for University students. The primary purpose of the behavior expectations set forth in the code is the protection of the campus community and the maintenance of an environment conducive to learning and inquiry.

Disciplinary proceedings are meant to be informal, fair, and expeditious. Charges of nonserious misconduct are heard by the judicial affairs officer. Serious or repeated allegations are heard by the campus-wide University Judicial Board.

Students may be accountable to both governmental authorities and to the University for acts that constitute violations of law and the Student Code.

For a complete copy of the *University Student Judicial Code* see *Bearings*, the student handbook, which is published each summer.

Undergraduate Student Academic Integrity Policy

Effective learning, teaching, and research all depend upon the ability of members of the academic community to trust one another and to trust the integrity of work that is submitted in classes for academic credit or conducted in the wider arena of scholarly research. When such an atmosphere of

mutual trust exists, the free exchange of ideas is fostered, and all members of the community are able to work to achieve their highest potential. In all academic work, it is important that the ideas and contributions of others be appropriately acknowledged, and that work that is presented as original is in fact original. Ensuring the honesty and fairness of the intellectual environment at Washington University is a responsibility that is shared by faculty, students, and administrative staff.

This statement on academic integrity applies to all undergraduate students at Washington University. Graduate students are governed by policies in each graduate school or division. The purpose of the statement is to clarify the University's expectations with regard to undergraduate students' academic behavior and to provide specific examples of dishonest conduct. The examples are only illustrative, not exhaustive.

Students are expected to adhere to the highest standards of behavior, and the vast majority of Washington University students do so. Each year, however, a few students behave dishonestly. The following material describes the most common types of dishonest behavior.

It is dishonest and a violation of student academic integrity if you:

Plagiarize

You commit plagiarism by taking someone else's ideas, words, or other types of work product and presenting them as your own. You can avoid plagiarism by using proper methods of documentation and acknowledgement.

- Enclose every quotation in quotation marks, and acknowledge its source.
- Cite the source of every summary, paraphrase, abstraction or adaptation of material originally prepared by another person, and any factual data that is not considered common knowledge. Include the name of author, title of work, publication information, and page reference.
- Acknowledge material obtained from lectures, interviews, or other oral communication by citing the source (name of the speaker, the occasion, the place, and the date).
- Cite material from the internet just as if it were from more traditionally published sources. Follow the citation style or requirements of your instructor.

Cheat on an Examination

You must not receive or provide any unauthorized assistance on an examination.

During an examination you may use only materials authorized by the faculty.

Copy or Collaborate on Assignments without Permission

Unless the instructor explicitly states otherwise, it is dishonest to collaborate with others when completing graded assignments or tests, performing laboratory experiments, writing and/or documenting computer programs, writing papers or reports, and completing problem sets.

- Never use, copy, or paraphrase the results of another person's work and represent them as your own, regardless of the circumstances.

When you submit work with your name on it, you are in effect stating the work is yours and only yours, unless you acknowledge in an endorsement all the help of persons who have contributed to the completion of the assignment.

If the instructor allows group work, you must be sure you understand the degree of acceptable collaboration.

- It is never appropriate to simply copy another's work, or to permit another student to copy your work.
- If you have any questions regarding the instructor's definition of allowable behavior, it is your responsibility to ask for clarification prior to engaging in the collaboration.

It is dishonest to turn in work as a collaborative effort if you did not contribute your fair share of the effort.

Fabricate or Falsify Data or Records

It is dishonest to fabricate or falsify data in laboratory experiments, research papers, reports or other circumstances; fabricate source material in a bibliography or "works cited" list; or provide false information on a résumé or other document in connection with academic efforts. It is also dishonest to take data developed by someone else and present them as your own.

Engage in Other Forms of Deceit or Dishonesty

Do not submit the same work for more than one course without explicitly obtaining permission from all instructors. When a paper or project builds on work completed earlier in your academic career, you must bring that fact to the attention of the instructor.

Do not request any academic benefit, including an extension of time, a better grade, or a recommendation, from an instructor when the request is based on false information or deception.

Do not make any changes (including adding material or erasing material) on any test paper, problem set, or class assignment being submitted for a re-grade.

Do not willfully damage the efforts or work product of other students.

Do not steal, deface, or damage academic facilities or materials.

Do not collaborate with other students planning or engaging in any form of academic misconduct.

Do not engage in any other form of academic misconduct not covered here (since no list is necessarily exhaustive). If you are ever in doubt, ask the professor or teaching assistant for guidance.

Faculty Responsibility

Faculty are strongly encouraged to report incidents of student academic misconduct to the academic integrity officer in their school or college, so that the incident may be handled in a consistent, fair manner, and so that substantiated charges of misconduct may be noted in students' records.

Student Rights and Responsibilities

If you are accused of an academic integrity violation by a professor, teaching/graduate assistant, or academic integrity officer, you are entitled to do the following:

- Review the written evidence in support of the charge.
- Ask any questions you have.
- Offer an explanation as to what occurred.
- Present any material that would cast doubt on the correctness of the charge.

After you are notified of a charge of academic misconduct, you have several options:

- You may deny the charges and request a hearing in front of the appropriate academic integrity panel.
- You may admit the charges and accept the imposition of sanctions.
- You may request a leave of absence from the University. However, the academic integrity matter will have to be resolved prior to your re-enrollment.
- You may request to withdraw permanently from the University with a transcript notation that there is an unresolved academic integrity matter pending.

You have the following responsibilities in resolving the charge of academic misconduct:

- You must admit or deny the charge. This will determine the course of action to be pursued.
- You must provide truthful information regarding the charges. It is a student judicial code violation to provide false information to the University or anyone acting on its behalf.

Sanctions

If, after a hearing, you are found to have acted dishonestly, or if you have admitted the charges prior to a hearing, the School academic integrity officer or hearing panel may do one or more of the following:

- Issue a formal written reprimand.
- Impose educational sanctions, such as completing a workshop on plagiarism or academic ethics.
- Recommend to the instructor that you fail the assignment.
- Recommend to the instructor that you fail the course.
- Recommend to the instructor that you receive a course grade penalty less severe than failure of the course.
- Place you on "Disciplinary Probation" for a definite period of time, or until defined conditions are met. The probation will be noted on your transcript and internal record while it is in force.
- In cases serious enough to warrant suspension or expulsion from the University, refer the matter to the University Judicial Board for consideration.

Withdrawing from the course will not prevent the academic integrity officer or hearing panel from imposing or recommending sanctions, including a failing grade in the course.

If the charges of academic misconduct

are not proven, you may withdraw from the course in question without prejudice. Whether you complete the course or not, no record of the allegation will appear on your transcript or in your student file.

Appeals

If you believe you did not receive a fair hearing from the academic integrity officer or the hearing panel, or if you believe the sanction imposed for misconduct is excessive, you may appeal to the University Judicial Board within fourteen days of the original decision. Appeals are governed by Section VII. C. of the University *Student Judicial Code*.

Reporting Misconduct by Others

If you observe other students violating this policy, you are strongly urged to confront the student(s), report the misconduct to the instructor, and/or seek advice from the academic integrity officer in the school in which the misconduct is occurring.

Administrative Procedures

Individual undergraduate Colleges and Schools are free to design specific procedures to resolve allegations of academic misconduct by students in courses offered by that school, so long as the procedures comply with this policy and with the University *Student Judicial Code*.

Administrative Record-Keeping Responsibilities

It is the responsibility of the academic integrity officer in each school to keep accurate, confidential records concerning academic integrity violations. When a student has been found to have acted dishonestly, a letter summarizing the allegation, the outcome, and the sanction shall be placed in the student's official file in the office of the School or College in which the student is enrolled.

Each school's academic integrity officer shall make a report of the outcome of every formal accusation of student academic misconduct to the Director of University Judicial Programs, who shall maintain a record of each incident. When a student is formally accused of academic misconduct and a hearing is to be held by an academic integrity officer, a hearing panel, or the University Judicial Board, the person in charge of administering the hearing shall query the Director of Judicial Programs about the student(s) accused of misconduct. The Director shall provide any information in his/her records concerning that student to the integrity officer. Such information is to be used only in determining sanctions if the student is found to have acted dishonestly in the present case. Evidence of past misconduct may not be used to resolve the issue of whether a student has acted dishonestly in a subsequent case.

School and College academic integrity officers are encouraged to make periodic (at least annual) reports to the students and faculty within the school concerning accusations of academic misconduct and the outcomes, without disclosing specific informa-

tion that would allow identification of the students involved.

Statement of Intent to Graduate

You are required to file an Intent to Graduate with the Office of Student Records prior to the semester in which you intend to graduate. Additional information is available in your dean's office and in the Office of Student Records.

Student Academic Records and Transcripts

The Family Educational Rights and Privacy Act of 1974 (FERPA)—Title 20 of the United States Code, Section 1232g, as amended—provides current and former students of the University with specific rights of access to and control over their student record information. In compliance with the statute, appropriate federal regulations, and guidelines recommended by the American Association of Collegiate Registrars and Admissions Officers, the University has adopted procedures that implement these rights.

A copy of the University policies regarding educational records and the release of student record information is available from the Office of Student Records and the University Web site.

Transcript requests may be made in person, at WebSTAC, or by writing to the Office of Student Records. The written request must include your name, signature, student number, date of birth, and approximate dates of attendance.

Tuition and Fees

Tuition

Washington University relies on tuition income to pay more than 60 percent of the cost of undergraduate education. Most of the remaining cost is generously funded by gifts from the University's alumni and friends and from income from the University's endowment.

In setting the tuition rate, our emphasis is on being able to hire a high-caliber faculty and to offer extensive extracurricular opportunities.

Tuition for the 2006-07 academic year is \$16,400 per semester for full-time study. Full-time study is considered to be 12 to 18 units. If you enroll in more than 21 units per semester, you will pay additional tuition of \$1,367 for each credit unit beyond the 21. Freshman and sophomore architecture students who wish to enroll in more than 18 units per semester must have permission of the dean or associate dean and pay additional tuition of \$1,367 for each credit beyond 18. Junior- and senior-year architecture students who wish to enroll in more than 16 units must have the permission of the dean or associate dean of the School.

First-year, first-semester students register online after arriving on campus. For all subsequent semesters, continuing students have the chance to register in April for the fall

semester and in November for the spring semester. You will be billed for tuition in July for the fall semester and in December for the spring semester. You must pay tuition by the date specified on the bill or you will incur a late fee.

If you cannot afford to pay the full tuition bill, you should explore the University's extensive financial assistance opportunities, which are described in the Financial Support section of this *Bulletin*.

Many families prefer to pay educational expenses on a monthly basis. The interest-free monthly payment plan, TuitionPay, allows students and families to spread all or part of the academic year's expenses over equal monthly payments (see page 21). The Washington University Partners in Education with Parents (PEP) plan may provide tax savings for some families and offers monthly payment options over a period as long as 10 years at a competitive, fixed-interest rate. The PEP plan is described in the Financial Support section of this *Bulletin* (see page 20).

Your family should begin planning for educational costs as soon as possible following the decision to enroll. It is important to allow sufficient time to complete financial arrangements prior to your registration.

Fees

Student Activities. The mandatory student activities fee is 1 percent of tuition; for the 2006-07 academic year, it is \$164 per semester. This special fee may vary from year to year. You may obtain information about the fee from the Office of Student Activities.

Student Health. Washington University has a student health fee designed to improve the health and wellness of the entire Washington University community. The student health fee of \$330 is billed to the student tuition statement each semester. Students are automatically enrolled in the plan at the time of registration. More information about the fee and the plan is available at <http://shs.wustl.edu>.

Late Registration. You may register for classes through the end of the second week of the semester. If you register after the second week, you must do so in person in the Dean's Office, and you will be assessed a late registration fee of \$100 per week. A 5 percent late payment fee may also be assessed by the Dean's Office if payment in full is not made with late registration.

The late registration fee is not applicable to graduate resident and nonresident candidates. Students in University College programs will incur a flat late fee of \$30. Part-time engineering students will incur a late fee of \$50 per week.

Returned Checks. The University assesses a service charge for handling and processing returned checks.

Enrollment Deposit

First-year students and transfer students are required to pay a deposit upon admission to Washington University. Your \$200 enrollment deposit is not credited toward tuition and will be forfeited if you do not complete one full

semester at Washington University. However, after you graduate, or if you withdraw for any reason after the first semester, your deposit will be refunded (minus any unpaid bills, such as parking or library fines).

Withdrawals and Refunds

The College of Arts & Sciences, the Olin School of Business, the Sam Fox School of Design & Visual Arts, and the School of Engineering & Applied Science have similar policies on withdrawals and refunds. During the first two weeks of a semester, a student may withdraw from all course work via the online registration system or by notifying the Dean's Office in writing. After the second week of classes, a written request to be dropped from courses must be received by the Dean's Office.

Tuition Refund Schedule (as of Fall 2006)

Withdrawal Date	Refund*
1st or 2nd week of classes	100%
3rd or 4th week of classes	80%
5th or 6th week of classes	60%
7th or 8th week of classes	50%
9th or 10 week of classes	40%
After 10th week of classes	0%

Refunds are calculated based on the date the student notifies the University of withdrawal.

If a medical condition makes attendance for the balance of the semester impossible or medically inadvisable, the University will make a pro rata tuition refund, as of the date of withdrawal when that date occurs prior to the 12th week and the condition is verified by the Student Health Services or a private physician. The date of withdrawal may correspond to the date of hospitalization or the date on which the medical condition is determined.

If a Federal Title IV aid recipient withdraws from school before the end of the academic semester, Washington University must refund (send loan funds back to the lender) the unearned (amount of time in the academic semester that the student did not attend) amount of Title IV funds. Unearned Title IV funds will be returned to the Title IV program. Students will be responsible for any disbursed but unearned portion of their Title IV funds.

An example of a typical refund calculation can be obtained from the Office of Student Financial Services.

Changes in Fees

The University reserves the right to change the fees stated or to establish additional fees at any time without prior written notice. When fee changes or additions are made, they become effective with the next payment due.

Nonpayment of Fees

Nonpayment of tuition or other charges due the University or otherwise affecting the University will prohibit the student from

* No refunds are available if individual courses are dropped.

receiving certain services. Students with outstanding financial obligations to the University will not be allowed to register or to obtain transcripts or official verification of enrollment.

Financial Support

Washington University bases most financial assistance on a careful assessment of two factors: financial need and your academic promise. In addition, the University offers a limited number of academic scholarships and fellowships based solely on academic merit. You may apply for both kinds of support simultaneously. Other financing options and innovative plans, such as the Partners in Education with Parents (see page 21) and TuitionPay, the monthly payment plan (see pages 21-22), assist students and parents in financing the University's costs.

About 60 percent of Washington's undergraduates receive need-based financial assistance, which is offered in combinations of scholarships and grants, long-term subsidized loans, and in many cases, part-time campus employment. The average award in 2005 was more than \$29,000.

Your financial circumstances are considered individually in the financial assistance process. In evaluating the extent of each applicant's need, the University considers many factors besides family income, such as the number of children in your family, the number in college at the same time, and unusual medical expenses. When you apply for financial assistance, you are considered for all types of assistance—grants, student loans, and part-time employment.

The University strives to make attendance a financial reality for qualified students, even when financial need is great. Information about application procedures may be obtained from the Office of Student Financial Services.

Veterans. If you are seeking benefits from the Veterans Administration, you should contact the Office of Student Records.

Scholarship Funds

The following scholarship funds, which are administered by Washington University, are provided by generous donors to assist the University in supporting financially needy and deserving students. Note: These awards are part of financial assistance and do not need to be applied for separately.

A list of scholarships, fellowships, and loan funds specifically designated for students in a particular school (as part of their financial assistance award) can be found in that school's section of this *Bulletin*.

General Scholarship Funds for Undergraduates in Any School

These scholarships are used to fund scholarship commitments the University makes to students in awarding financial assistance. Qualifying for one or more of these scholarships does not affect eligibility for other scholarship support.

Endowed Scholarships

Grace Bergner Abrams Scholarship
Buddy, Alan, and Andy Adler Memorial Scholarship
Terry W. Allen Scholarship
Anheuser-Busch Scholars Program
Loretta A. Backer Missouri Scholarship
Harold M. Baer Scholarship
Jessie R. Barr Scholarship
Ella Leona Beck Scholarship
Richard G. Bengel Memorial Scholarship
Clara Urquhart Blair Scholarship
Jacob C. and Mary G. Van Blarcom Scholarship
Scott H. Blewett Memorial Scholarship
Blossom Scholarship
William H. Boehm Scholarship
E. R. and Patti C. Breaker Scholarship
Lydia D. Buder Scholarship
Adeline and Edna L. Burger Scholarship
Charlotte B. Burkitt Scholarship
Captain Taylor Kaye Castlen Memorial Scholarship
Dr. Larry T. Chiang Scholarship
Elizabeth Clark Scholarship
Class of 1903 Scholarship
Noel Steven Conner Scholarship
Corporate Express Scholarship
Della S. Crowe Scholarship
Mary E. and Charles V. Dains, Sr. Scholarship
Antoinette Dames Scholarship
Elizabeth Gray Danforth Scholarship
William H. and Elizabeth Gray Danforth Scholars Program
H. James Davidson Memorial Scholarship
Francis M. Dunford Scholarship
Eastern Star of Missouri Scholarship
William G. Eliot Scholarship
Enterprise Rent-A-Car Scholars Program
John B. Ervin Scholars Program
Lloyd H. Faidley Scholarship
First National Bank in St. Louis Scholarship
Harry F. Fischer Scholarship
Frank and Esther Fishgall Scholarship
Andrew Rankin Fleming and Susan Fleming Scholarship
James G. and Margaret H. Forsyth Scholarship
Joseph W. and Kate Abby Givens Scholarship
Hiram E. Grant and Marguerite H. Grant Scholarship
Helena Sessinghaus Graves Scholarship
Jerry Hajek United Auto Workers Scholarship
Frederic Aldin Hall Scholarship
Lenora B. Halsted Scholarship
Hartmann Family Scholarship
Lillian Heltzell Scholarship
Jules Henry Scholarship
Kiyoshi Hikoyeda Scholarship
Paul Ho Scholarship
Hosmer Hall Scholarship
Howorth Scholarship
James Lee Johnson Scholarship
John N. and Georgianna B. Judson Fund
Kahn-Morris Scholarship
Kappa Sigma Scholarship
G. A. Knight Memorial Scholarship
Myra T. and Leroy Kopolow APAP Scholarship
Paul Kovacik Memorial Scholarship
Mary and Ike Levinson Scholarship
John Ashbury Lewis II Scholarship

John Allan Love Scholarship
William W. and Drue Smalling May Scholarships
Amy B. McCormack Scholarship
Eliza McMillan Scholarship
Mercantile Library Association of St. Louis Scholarship
George Strodtman Metcalfe Scholarship
Joseph W. and Ida F. Müller Scholarship
Missouri Pacific Railroad Lines Scholarship
Philip S. Mountjoy, M.D. and Anne Weir Mountjoy Scholarship
Janet Shapiro Mustin Memorial Scholarship
LaVerne Noyes Scholarship
Dr. and Mrs. Robert A. and Rae W. Nussbaum Scholarship
Julia Jean Cromer O'Connor Scholarship
Helen Ette Park Scholarship
Peach Scholarship
Peifuss Memorial Scholarship
Albert J. Plessner Scholarship
Virginia and James Power Scholarship
Joseph H. Roblee Scholarship
Maude A. Schrage Scholarship
Sumner Shapiro Scholarship
William Eliot Smith Memorial Scholarship
Spirit of Washington University Scholarships
Spirit of America Scholarships
Clara Gertrude Springmeier Scholarship
I. Louis Stein Scholarship
Julia C. Stimson Scholarship
Solon E. Summerfield Scholarship
Harold E. and Bess A. Thayer Scholarship
Larry Thomas Scholarship
Marie Davis and Harry Thomson Scholarship
USS Scholarship
Mildred Wagener Scholarship
Washington-DuBois Scholarship for African Americans
Leroy A. Wehrle Scholarship
Western Sanitary Commission Scholarship
Gloria W. White Scholarship
Jeanette L. Windegger Scholarship
Andrew L. Wunsch Memorial Scholarship
Zeffren Family Scholarship
Zonta Club of St. Louis Scholarship

Annual Scholarships
Black Alumni Council Scholarship
Black Senior Scholarship
George F. Durant Scholarship
Washington University Employee Scholarship
John B. Ervin Scholarship
Farmer's Group, Inc. Scholarship
William Pablo Feraldo Memorial Foundation Scholarship
Alia Fischer Scholarship
Guller Joint Program Scholarship
Annika Rodriguez Scholarship
Helen Hook Hume Scholarship
Krouwer Foundation Scholarship
Landau Scholarships
Musial Baseball Scholarship
Northern Trust Scholarship
Cora E. O'Rourke Scholarship
Pineapple Scholarship
Edward L. Pipkin Scholarship
Phenie Pott Scholarship
Rangel Uribe Scholarship
Adolph M. Schmitt Scholarship

1999 Division III Sears Trophy Scholarship
 Chester F. Shortall Scholarship
 Herbert P. Stellwagen Memorial Scholarship
 Orin Bruce Brown-Weingart Scholarship

Army and Air Force ROTC Scholarships

High school seniors may compete for four-year Army Reserve Officer Training Corps scholarships; college students, for three- and two-year scholarships. These scholarships are awarded based on merit. Army ROTC scholarships provide the full amount of tuition and mandatory fees for undergraduate study at Washington University. Army ROTC scholarships also include support for textbook purchases and a monthly allowance during the period the student is in school on scholarship status. Some students who receive Army ROTC scholarships also receive stipends from the University for room and board. The source of the student's stipend will be the University, federal, or state government, or other scholarships, depending on the student's eligibility for assistance. For more information, write the Military Science Department, Washington University, Campus Box 1206, One Brookings Drive, St. Louis, MO 63130-4862, or call 314/935-5521, or visit the Washington University Army ROTC Web site at www.rotc.wustl.edu. The Four-Year Scholarship application may be submitted through the Army ROTC National Headquarters Web site, www.goarmy.com/rotc/.

An Air Force ROTC scholarship program is available to assist outstanding students who enroll in the Air Force ROTC program. Four-year scholarship awards are made on the basis of national competition during the applicant's senior year of high school and can be up to full tuition plus room and board. An application can be obtained at www.afrotc.com. Three-year and two-year scholarships are awarded based on academic excellence and Air Force ROTC participation. More information is available from the Department of Aerospace Studies, Saint Louis University, St. Louis, MO 63108; 314/977-8227 or 888/4-AFROTC or www.slu.edu/organizations/airrotc.

Corporation Awards to Children of Employees

An increasing number of companies have scholarship programs open to children of their employees. Inquiries about such plans should be made through your parents' employer(s).

Loans

In addition to privately sponsored loan programs (refer to individual schools' sections for restricted loan funds), Washington University participates in the federal Stafford and Perkins student loan programs, and the parent PLUS loan program. These loans provide reasonable interest rates and long-term repayment schedules; they make attendance possible for more than half of the University's students.

Partners in Education with Parents (PEP)

Partners in Education with Parents (PEP) is an innovative multiple-option program financed and operated by Washington University to help parents to pay University charges—tuition, fees, and room and board.

PEP continues Washington University's commitment to a partnership with the families of our students. This partnership includes a variety of choices to make parents' contributions as affordable as possible. Parents may choose the Multiyear Option, Prepayment Option, or Annual Option.

The PEP **Multiyear Option** allows families to borrow one initial amount at the start of the freshman year to cover all, or part of, all four years of tuition, fees, and room and board charges. This option freezes the charges covered by PEP at the freshman-year rate, based on the percentage of costs covered by the PEP (participation rate). Families can benefit from the competitive, low-cost fixed interest rate and take up to 10 years to repay. There is no penalty for prepayment, and the family may be able to use the home equity option to claim a tax deduction for the interest.

The PEP program also offers the choice to prepay, without borrowing from Washington University, all or part of the tuition, fees, and room and board charges for all four undergraduate years at the freshman-year rate. This option, the **Prepayment Option**, assures families that the prepaid portion of college expenses is covered and will not be subject to later increases in University costs. You can also choose to prepay a portion of the charges and borrow the rest from Washington University. This combination works well for parents who may have saved for a portion or most of their student's college expenses and who want to take advantage of the benefit of increasing their participation rate by using PEP to finance the remaining charges.

If the family prefers to borrow for college costs one year at a time, then the PEP **Annual Option** might be their best choice. Each year they can borrow an amount up to or equal to that year's tuition, fees, and room and board charges and take up to 10 years to repay. There is no penalty for prepayment and they can benefit from the competitive fixed interest rate.

Financing under the Multiyear or Annual Options requires no security or collateral from participants. A prospective participant must have a good credit rating and provide evidence of being able to meet the required monthly payments to be approved for a loan.

A Home Equity Option is available under both the Multiyear and Annual Options. This option was developed so that the interest paid on a debt secured by a home may qualify for a tax deduction.

More information about Partners in Education with Parents is available from the

Office of Student Financial Services, Washington University in St. Louis, Campus Box 1041, One Brookings Drive, St. Louis, MO 63130-4899; 314/935-4139 or 1/800/468-0569, or fax 314/935-4037; e-mail: financial@wustl.edu.

TuitionPay (Monthly Payment Plan)

TuitionPay, the monthly payment plan, provides for the payment of total annual University charges—tuition, fees, and room and board—in 10 or 9 monthly installments. Information about this plan is provided to all admitted students or may be obtained directly from the Office of Student Financial Services.

Federal Work-Study

If you apply for financial assistance, you are considered for the Federal Work-Study program (FWS). FWS employees work an average of 10 to 12 hours a week on campus and typically earn \$2,000 over the course of the academic year.

University Affiliations

Washington University is a member of the Association of American Universities, the American Council on Education, the College Board, and the Independent Colleges and Universities of Missouri. We also are a member of and accredited by the North Central Association of Colleges and Secondary Schools (<http://www.ncahigherlearning-commission.org> or (312) 263-0456).

The College of Arts & Sciences is a member of the Association of American Colleges. Degrees in education offered by Arts & Sciences are accredited by the National Council for Accreditation of Teacher Education. Architecture was one of the eight founding members of the Association of Collegiate Schools of Architecture (ACSA) in 1912. The Graduate School of Architecture & Urban Design's Master of Architecture degree is accredited by the National Architectural Accreditation Board (NAAB). The College of Art is a founding member of, and is accredited by, the National Association of Schools of Art and Design. The Mildred Lane Kemper Art Museum is nationally accredited by the American Association of Museums (AAM). The Olin School of Business is a charter member of the Association to Advance Collegiate Schools of Business International (1921). In the School of Engineering & Applied Science, many of the professional degrees are accredited by the Accreditation Board for Engineering and Technology. The University Libraries are a member of the Association of Research Libraries.

Washington University also is a member of Argonne Universities Association, the organization that coordinates the use of research facilities at Argonne National Laboratory.

Using This Bulletin

On the following pages you will find descriptions of all the undergraduate academic departments and programs of Washington University, beginning with the College of Arts & Sciences. Each division contains a faculty list, followed by the “headnotes” section, which gives an overview of available majors and minors and their respective course requirements. To help you better understand how the course descriptions are structured, please note the following information.

Course Descriptions

- The number of weekly class hours corresponds with the number of units of credit assigned a course, unless different hours are specified in the course descriptions.
- Course numbering corresponds generally to the level of students for which the course is planned. Thus, courses numbered 100 through 299 are intended primarily for first-year students and sophomores; courses numbered 300 through 399 for sophomores, juniors, and seniors; and courses numbered 400 to 500 for juniors, seniors, and graduate students.
- When a course title is followed only by a reference to another department (e.g., Art-Arch 190B, *Same as Anthro 190B*), the course is offered in both departments but instruction is provided by the second department.
- Prerequisites are listed for individual courses except in those cases where a course has no prerequisite.
- Not all the courses listed will be given each year. Full information on the specific courses to be offered each semester is circulated to all members of the faculty and student body before preregistration in a publication titled *Course Listings*. Course Listings may also be found online at <http://courses.wustl.edu/>.

**College of
Arts & Sciences**

College of Arts & Sciences

Edward S. Macias, Ph.D.
Executive Vice Chancellor and
Dean of Arts & Sciences

James E. McLeod
Vice Chancellor for Students and
Dean of the College of Arts & Sciences

Henry Biggs, Ph.D.
Associate Dean

Darla Dale, Ph.D.
Assistant Dean

Warren Davis, M.A.
Assistant Dean

Carolyn Herman, Ed.D.
Assistant Dean

Delores K. Kennedy, Ph.D.
Associate Dean

Kristen Kerth, J.D.
Assistant Dean

Dirk Killen, Ph.D.
Assistant Dean

Mary Laurita, Ph.D.
Assistant Dean

Ian MacMullen, Ph.D.
Assistant Dean

Sean McWilliams, Ph.D.
Assistant Dean

Jennifer Romney, Ph.D. candidate
Assistant Dean

Sharon Stahl, Ph.D.
Associate Dean

Wilmetta Toliver-Diallo, Ph.D.
Assistant Dean

Arts & Sciences at Washington University

The College of Arts & Sciences is the largest undergraduate program at Washington University, offering you the most diverse range of courses in more than 50 different fields, ranging from anthropology and biochemistry to mathematics and performing arts.

The College draws on the rich and varied resources that this distinguished University has to offer—a creative and internationally recognized faculty, a diverse and able student body, a superior library, and excellent opportunities for advanced study. As the center of intellectual life of the campus, the College of Arts & Sciences benefits from and contributes to the studies of architecture, art, business, engineering, law, medicine, and social work.

Of central importance to the life of the College is the quality of teaching. As an undergraduate student, you have the opportunity to learn from and work beside stimulating teacher-scholars who are leaders in their fields. Our nationally recognized faculty, which numbers more than 500, is made up of artists, biologists, chemists, economists, historians, philosophers, and poets, who bring the excitement of new ideas into the classroom. Their varied intellectual pursuits add richness to your undergraduate experience.

Governance

The College of Arts & Sciences is bound by the charter of the University and is ultimately responsible to the University Board of Trustees, which delegates to the chancellor the administration of the University. In turn, the chancellor delegates to the deans and faculty of the College of Arts & Sciences responsibility for its internal governance.

Because the College is continually reassessing its objectives and policies, faculty and students alike may take the initiative in proposing changes in curriculum and policies. New programs or proposed modifications are reviewed by committees whose members represent the diverse points of view of the academic community.

By action of the Faculty of Arts & Sciences in January 1969, revised in May 1971, the ArtSci Council shares joint responsibility with the faculty for college-wide degree requirements, the grading system, and those policies that directly affect the lives of students. The ArtSci Council appoints representatives to various standing and ad hoc College committees.

The Curriculum

By studying in the College of Arts & Sciences, you can discover how the intellectual resources of people, libraries, laboratories, studios, and computers can best be used. More important, the College provides you with the opportunity to explore those resources necessary to all occupations: a heightened spirit of inquiry, an ability to organize and synthesize information, skills in written and oral expression, and a familiarity with the ways in which thoughtful men and women have discovered those commitments and values that make life worthwhile.

The College's academic program has two principal objectives: (1) to provide you with an understanding of the range of human knowledge and attainment by developing an appreciation of the characteristic problems, achievements, and limitations of the various fields of human endeavor, and (2) to give you the opportunity to pursue study of a subject or area in a sustained, intensive way.

A period of exploration, commonly called general education, helps you achieve an awareness of the richness inherent in the various fields of study. The College requires that you explore the curriculum widely for more than a quarter of the units needed to graduate. The College also requires you to choose one or more areas of concentration. Most students choose to master one of the traditional subject areas such as chemistry, economics, or music. You may choose from among 30 subject majors and 21 interdisciplinary majors. You may also develop special majors.

In all departments, you are encouraged to proceed as your capabilities and experience permit. Placement examinations are used in many departments to enroll you in courses at the levels your previous training warrants; in other departments, proficiency examinations are available (see Proficiency and Placement Examinations, beginning on page 14).

Academic Advising

To assist you with your undergraduate planning, the College provides a closely coordinated academic advising program. As a first-year student, you will have a peer adviser and a specially selected four-year academic adviser with whom you will meet periodically during the first year to help you with the transition into the University and to help you select courses for the fall and spring semesters. After the first year, you will meet each semester with your four-year academic adviser prior to registration to discuss your interests, goals, and academic course work. You are encouraged to consult with your four-year academic adviser any time you need assistance throughout the school year.

When you declare a major, you are assigned a major adviser in the department of your principal area of study. The extent of the adviser's assistance depends on your individual needs and wishes, but consultation with a major adviser is required each time you prepare to register for courses.

Students with problems or questions related to academic issues are invited to visit the College Office at any time. One of the deans is available every day on a drop-in basis to help you or refer you to an appropriate source of help. Important among these sources are individual faculty members with particular specialties who may be able to answer your questions. In addition, the Writing Center, Career Center, Student Health Services, and Cornerstone: The Center for Advanced Learning provide a wide range of services, including individual and group instruction, interest tests and advice, individual sessions with trained counselors about educational and personal problems, and the improvement of skills in learning.

Pre-Matriculation Units

Pre-matriculation units are earned before your enrollment at Washington University as a first-year student, which can be applied toward a Washington University degree. Sources for pre-matriculation units include Advanced Placement (AP) examinations, International Baccalaureate (IB), British Advanced (A) Levels, and college credit earned after your junior year in high school. Students in the College of Arts & Sciences have all accepted pre-matriculation work noted on their transcript so they may go directly into advanced courses, but the maximum number of pre-matriculation units awarded is 15 units. Pre-matriculation course work does not fulfill distribution requirements, but it may fulfill requirements for majors and minors.

Integrated Programs for Entering Students

As a first-year student, you may choose one of the following programs that provide a basic structure for your course selection. Each option provides an effective means of discovering personal and educational interests.

FOCUS Program

FOCUS is a one-year seminar program designed to bring you into close relationship with professors and other first-year students with similar interests. Several FOCUS plans are offered every year, each built around a seminar topic reflecting the professor's particular area of expertise. Students in each FOCUS seminar may also attend a "companion" course chosen to encourage exploration of the seminar topic from varying perspectives. The FOCUS program provides a coherent, group-oriented learning experience, while still allowing time for electives (see page 120).

International Leadership Program

The International Leadership Program is a one-year program designed to help you develop the skills and awareness needed to thrive in the globalized world. You will study the economic, political, social, and cultural issues that arise due to globalization. You will also study past and present international conflicts with a view to understand how and why they began and developed, and what is being done to resolve them. This program also features a speakers series giving you the opportunity to learn from and interact with proven leaders in international business, the State Department, foreign governments, and higher education.

The Mind, Brain, and Behavior Program

The Mind, Brain and Behavior Program is a two-year program that introduces students to the key ideas about the mind-brain interaction by examining attention, memory, and language—three central mental abilities that are primary areas of research in cognitive science. Professor-led discussion groups explore questions such as: What is the relation between attention and consciousness? Why do we misremember past experience? When the brain is damaged, why are only certain functions lost? In the second year, students engage in hands-on research under the guidance of a faculty mentor (see page 181).

Medicine and Society

The Medicine and Society Program is an exciting opportunity for undergraduate students in Arts & Sciences to address the important social and cultural foundations of health and illness in human societies, with a specific emphasis on service and research opportunities in health-related sites in St. Louis. Students who are accepted into the Medicine and Society Program are enrolled in a year-long Freshman Seminar on culture, health, and society in the Department of Anthropology. This seminar provides the academic foundation for future community health work in St. Louis.

Beginning in the sophomore year, students identify and select a local community health site for their internship. Internship sites may include the St. Louis city and county health departments, various non-governmental health aid agencies, sites for delivery of clinical care and research, and health philanthropic foundations.

During the junior and senior years, academic and service activities intensify at the internship site, culminating in a Senior project or Honors thesis based on original research, conducted at the community health internship site. This experience provides an excellent foundation for future study in medicine and public health, as well as any of the allied health professions. Students who complete the program will also be highly competitive for admission to other professional schools such as law, business, or social work (see page 177).

Memory in Mind and Culture

This two-year program introduces you to the domain of memory broadly construed, from its roots in brain function to its effects on culture and its role in history. The aim of this series of courses and individual projects is to give students the opportunity to explore the answers to such questions as: Is memory accurate? What makes some memories vivid? Are we aware of all our memories? Why are people in most nations so emotionally attached to their history? How can people survive trauma and atrocities? Is it possible to create false memories? Is eye-witness testimony reliable? What brain processes support memory? How is memory impaired by aging? Are our memory systems the same as those of other animals? These issues are approached in different ways and for different reasons by disciplines such as history, psychology, anthropology, and neuroscience. We designed special courses to give you fundamental notions of memory that span these different disciplines. The freshman year comprises two courses, and the sophomore year includes one course and one individual research project in collaboration with faculty. Participating faculty include psychologists, historians, neuroscientists, philosophers, anthropologists, and literary critics.

Pathfinder Program

The Pathfinder Program in Environmental Sustainability gives participating students a chance to engage in interactive study of the environment with a small group of motivated undergraduates, a senior faculty member, and a graduate fellow. Through case studies and field trips, students examine the issues surrounding environmental sustainability and the preservation of the environment for future generations. While participating in the Pathfinder Program, you may pursue a major in biology, chemistry, earth and planetary sciences, environmental studies, mathematics, or physics in the College of Arts & Sciences, or pursue a major within the School of Engineering & Applied Science. In addition to taking the Pathfinder core courses, you take courses tailored to your interests and major. The Pathfinder Program supports the concept that taking interrelated courses and learning both analytical and technical skills not only helps you complete a senior year capstone research experience, but also helps you with your career or graduate studies in the future (see page 187).

Text and Tradition Program

This two-year program explores many of the fundamental texts and concepts of Western history, which have served as both foundations and obstacles for the development of some of the most significant cultural, moral, and political institutions of modern society. Through close reading, critical analysis, and frequent short papers, two seminars each term explore texts by such writers as Homer, Plato, Machiavelli, Cervantes, Locke, and Marx. The discovery of the self, the origin of ideas such as liberty and property, and the impact of the scientific revolution are some of the themes examined. The program's professors serve as academic advisers. Text and Tradition courses serve as beginning courses in the major programs of many of the humanities departments and programs in Arts & Sciences; they also provide a foundation for students interested in pursuing an interdisciplinary major in the humanities under the auspices of the Interdisciplinary Project in the Humanities (IPH; see page 149).

Standard Program

This option is an excellent choice for you whether you already have made a firm commitment to a particular discipline in the natural sciences, social sciences, or humanities or you are uncertain about what you would like to pursue. In the standard program, we suggest that you consider a freshman seminar when you select courses in consultation with your four-year academic adviser. The course schedule can be either widely exploratory or oriented toward a particular objective such as medical school.

Major Fields of Study

The headnotes preceding the course offerings of each department or area of concentration explain which courses are recommended as prerequisites to advanced work. Information about other major requirements is also found there.

To declare a major, you must complete the declaration form and secure the written permission of the department or interdisciplinary committee. An adviser for the major will also be assigned by the department. You may complete more than one major; including a second major in the Olin School of Business or in the Engineering School.

If a student has two majors, each major must have 18 upper-level units of credit independent of each other.

If you are a student in business, engineering, architecture, or art, you may choose to pursue a second major in the College of Arts & Sciences. You will receive one degree, a B.S. or B.F.A., with two majors—one in the professional school and one in the College of Arts & Sciences.

Minor Fields of Study

If you develop a significant interest in one or more fields of study besides your major field, you may choose to pursue a minor in those fields. Optional minors may be fulfilled in an area closely related to the major or, to add breadth as well as depth to your

educational program, in a different discipline. A minor normally consists of 15 to 21 units of credit with a grade of C– or better. At least half or 9–11 units of credit must be at the 300 level or above and must be completed in residence at Washington University. The course requirements for a minor are determined by each department or program. If a student has a major and a minor, the major must have 18 upper-level units independent of the minor. The minor must have 12 units independent of the major.

The departments and interdisciplinary committees of the College have designed a broad array of minor programs, both general and specific. In addition, you may undertake minors in Architectural Studies; Art; Business; and Computer Science in the Engineering School. Detailed information on minor programs and procedures for declaring a minor are in the *Minors Handbook*, which is available in the College Office.

The Special Major and Special Minor

If you are interested in creating a special major or minor, you should confer with the dean charged with coordinating this program. After consultation, you must submit to the coordinator a formal proposal consisting of: (1) a description of the program of study, including an explanation of the integrating idea in the program; (2) a tentative list of courses to be taken; (3) the name of the proposed academic adviser; and (4) the name of a faculty member in a second department who has approved the proposal.

A proposal for a special major or minor must be submitted no later than the fifth semester of your undergraduate enrollment. The Committee on the Special Major and Minor is responsible for final action on proposals.

Bachelor of Arts Degree Requirements

Arts & Sciences places the primary responsibility for selection of an academic program on the student, in consultation with advisers. This freedom of choice carries with it a corresponding responsibility for the consequence of such choices. The faculty believes each student should strive toward breadth and intensity of study. This is represented in the formal requirements.

Planning

The degree requirements for the Bachelor of Arts Degree in Arts & Sciences are designed to provide you with strong and sustained training in writing and quantitative analysis; to enable you to construct a coherent program in which courses reinforce each other in challenging and productive ways; and to take advantage of two distinctive features of the academic environment at Washington University—the strong tradition of cooperation among faculty working in different intellectual disciplines and the fact that teaching and learning at Washington University draw energies from an environment of vigor and creative research.

We regard active student engagement in curricular planning as central to successful

student learning. Each semester, your advisers will help you project a personalized academic plan that responds to what you have already learned—about the University, about the structure and aims of intellectual disciplines, and about yourself.

By the end of your sophomore year you must have constructed and nominated online to your four-year academic adviser a curricular plan that will satisfy all the following General Education requirements:

I. Basic Skills

A. *Writing I* (3 units): You must demonstrate proficiency in reading and writing English and must begin to develop mature skills in framing and revising arguments by completing course work determined by the Department of English with grades of C+ or better. This should be completed in the freshman year.

B. *Quantitative Analysis* (3 units): You must develop your skills in quantitative analysis by completing one of an approved list of “QA” courses with a grade of C+ or better. You may well find that there is a QA course in your major field of interest.

C. *Cultural Diversity and Social Differentiation* (6 units): You must take one course designed to foster an understanding of cultural diversity and another course that substantially engages in the analysis of such forms of social differentiation as race, class, ethnicity, and gender. These courses, which may be taken credit/no credit, must be selected from an approved list of “CD” and “SD” courses; they may satisfy other requirements (although CD courses may not also satisfy SD requirements, and vice versa).

D. *Writing-Intensive Course* (3 units): So that you can consolidate your communications skills, you must take a writing-intensive course, preferably in your major field. You take the “WT” course in your junior year, or in your senior year. The course, which may satisfy other degree requirements, must be completed with a C+ or better.

II. Distribution Requirements

A. You must complete 8 or 9 units of course work in each of the following four academic areas:

1. Natural Sciences and Mathematics (NS)
2. Social Sciences (SS)
3. Textual and Historical Studies (TH)
4. Languages and the Arts (LA)

Up to 12 units of distribution requirements may be taken credit/no credit.

B. You must take 6 or more units in each of the four academic areas in approved course clusters. These clusters are designed to provide a deep and coherent experience of the four basic academic areas. Each complete major or minor may be used to satisfy a cluster requirement.

You may propose your own cluster, which will be reviewed by the student-faculty Curriculum Committee. You are permitted only one student-proposed cluster.

III. The Major

You must complete a major of no fewer than 18 units of courses numbered 300

or above with a grade of C– or better. A major consists of a regular major (a core specified by a department or area studies committee, plus a supporting program proposed by the student and approved by the department or area committee) or a special major (a program of studies planned by the student, together with a faculty adviser in one of the departments where the concentration will fall, and approved by the Committee on the Special Major and Minor). Degree completion is based on the primary major of record. At least half of the units for the major must be completed in residence. You are especially encouraged to complete a capstone experience in your major as a way of culminating your undergraduate education.

IV. Additional Requirements

- A. You must complete 120 units with at least 30 units in advanced courses (numbered 300, 400, or 500). The 30 units in advanced courses may include the number of advanced units required by the major.
- B. You must earn the final 30 units toward the degree at Washington University.
- C. You must be recommended by Arts & Sciences to the Board of Trustees.

V. Regulations

- A. No more than 24 units may be taken credit/no credit and no more than 12 of the 24 units may be for distribution requirements.
- B. No more than 15 units of pre-matriculation credit may be counted toward graduation. Pre-matriculation sources include Advanced Placement (AP), International Baccalaureate (IB), British Advanced (A) Levels, and college courses.
- C. You may not earn more than 12 units toward the bachelor’s degree in group and individual performance courses combined.
- D. Ordinarily, no more than 12 units of work may be taken outside the College of Arts & Sciences during the first and sophomore years. Thereafter, additional work may be taken with the approval of your adviser, provided the total applicable toward the A.B. does not exceed 30 units.
- E. No more than 18 units of credit in independent study may be applied to the A.B.; no more than 6 units of independent study may be attempted in a single semester.
- F. No more than 6 units of internship credit may be applied to the A.B.

VI. Transfer Students

- A. For transfer students, where appropriate, previous course work may be applied to the distribution requirements based on the following guidelines.
- B. For a student entering at the sophomore level:
 - i. one cluster may be fulfilled or
 - ii. one course may count as units in an area (NS, SS, TH, or LA) and

- one course may fulfill a basic attribute (QA if a grade of C+ or better was received, SD, or CD)
- iii. the writing-intensive course *must* be completed at Washington University
- C. For a student entering at the junior level:
- i. two clusters may be fulfilled or
 - ii. one cluster may be fulfilled and one basic attribute fulfilled (QA if a grade of C+ or better was received, SD, or CD) or
 - iii. two courses may count as units in two different distribution areas (NS, SS, TH, or LA) and one course (not two) may fulfill one of the basic requirements (QA if a grade of C+ or better was received, SD, or CD)
 - iv. the writing-intensive course *must* be done at Washington University

Special Academic Options

Overseas Study Programs

For information about study abroad, refer to page 6 of this *Bulletin*.

Individual and Group Performance

Opportunities for individual and group performance include participation in various musical organizations sponsored by the Department of Music (such as symphony orchestra, wind ensemble, mixed choir) and courses offered in physical education. To encourage you to pursue such physical, social, and creative activities, the College allows up to 12 units of credit toward the bachelor's degree for successful completion of enrollments in individual and group performance. This does not include music lessons or courses in the Performing Arts Department.

Internships

1. Students may not receive credit for work done for pay.
2. Each internship must have a faculty sponsor. The sponsor's primary role is to ensure that requirements for credit are met and that the work is of a substantial nature commensurate with the skills of college-educated employees. Detailed supervision of the intern in his or her job is the responsibility of the intern's site supervisor.
3. Registration in an internship for credit shall be conditional on satisfactory completion of the "Learning Agreement" form provided by The Career Center and the submission of this form to both The Career Center and faculty sponsor. The Career Center provides assistance in locating and organizing a good internship experience. If a student finds his or her own internship opportunity (either in the St. Louis area or another city), the student must contact The Career Center to file a Learning Agreement.
4. Work completed during the internship should contribute to the student's academic or professional development. Work should be of the type that requires a college education. (Completion of The

Career Center Learning Agreement will help to ensure that this requirement is satisfied.)

5. The credit awarded for an internship shall correspond to the time spent in work activities. For a typical 3-unit registration, the student is expected to work 45 hours of internship experience for each unit of credit or 135 hours for 3 units of credit. Registration for 1 or 2 units of credit is possible for internships that require less work time.
6. Students may complete the work for an internship over the summer (or other time when they are not registered) and receive credit during the subsequent semester. Any internship completed this way, however, must satisfy all requirements outlined here. The learning agreement must be filed and faculty approval must be obtained *prior to beginning work at the internship site*.
7. Every internship shall require written work to be reviewed by the faculty sponsor. The assignments shall be specified before work on the internship begins, and they shall be written into the Learning Agreement signed by the student and the faculty sponsor. Suggestions for written assignments include a periodic report on work activities and a brief end-of-term paper that describes the student's experience and links it to academic studies.
8. Students may count no more than 6 units of internship credit toward the 120 units required for graduation.
9. Students may not receive more than 3 units of internship credit in any semester.
10. Internship units do not count toward major or advanced unit requirements.
11. Because faculty are not involved in detailed supervision of the student's work during an internship, internship courses shall be offered for credit/no credit grades only. Internship credits therefore count toward the maximum of 24 credit/no credit units that may be applied toward graduation requirements.

Part-Time Study: Nontraditional Students

Arts & Sciences recognizes that for certain students with high educational goals, full-time study may not be feasible or appropriate. Employment in demanding positions, extensive family responsibilities, or other obligations may prevent an otherwise serious and competent student from completing the bachelor's degree at a rate of 15 units a semester. With their varied experiences outside the University, such students make valuable contributions to the classroom environment as they pursue programs of study suitable to their special circumstances. This opportunity is available to you if:

- at the semester of proposed enrollment you are at least 24 years of age and
- you have previously matriculated at Washington University but discontinued your studies; or
- you completed at least one year of college studies and were not able to enroll full-

time for the two previous academic years; or

- you are a high school graduate who wishes to begin collegiate study past the traditional age.

The residency requirement is waived for part-time students.

Full-time study is defined as 12 or more units. As a part-time degree candidate you will typically enroll in 6 to 11 units per semester. The program of study is chosen in consultation with an academic adviser, initially a dean of the College.

Satisfactory progress toward your degree consists of completing at least 6 units per semester and maintaining an average grade of C. Tuition charges for part-time study are assessed on a per-credit-unit basis, established annually in relation to the full-time undergraduate tuition fee.

To be considered for part-time study, you should present official transcripts recording all previous study in institutions of higher education, including high school, regardless of date, and SAT or ACT test scores to the dean of the College assigned to supervise this program. You should also submit a 1,000-word essay outlining your activities since high school graduation, the circumstances that make part-time study desirable, and your educational goals. Additionally, you will have an appointment with a dean to explore personal objectives in relation to the College's programs and demands.

Transcripts, essays, test scores, and interviews all weigh in the decision whether to admit each applicant to part-time degree candidacy; decisions will be reported at least two weeks prior to the opening of the semester. Application forms and additional information may be obtained from the College of Arts & Sciences, Washington University in St. Louis, Campus Box 1117, St. Louis, MO 63130-4899.

Tuition Reduction

Spring 2007 is the last semester that a tuition reduction may be granted to undergraduate students who have been full-time and have:

- met all distribution requirements,
- earned a minimum of 114 units (not including incompletes),
- only 6 units left to complete all degree requirements,
- filed an Intent to Graduate Form,
- filed a form requesting a tuition reduction in the College Office. A student will be notified by the College Office whether or not the request for part-time status has been granted.

For the classes that entered Fall 2004 and after, the tuition reduction option is not available. However, a student may still graduate early.

Combined Degree Opportunities

You may work toward the Bachelor of Arts degree in the College of Arts & Sciences at the same time you earn an undergraduate degree in business, engineering, architecture, or art. To do so, you must earn 150 units, 90 of the units in the College of Arts & Sciences; fulfill the minimum degree requirements for a major in each of the two schools,

as well as fulfill the distribution requirements for both schools. You should contact both a dean in the College and the designated dean in the appropriate school as early as possible in your undergraduate career.

Majors Across Schools

You may get an A.B. degree with a second major in business or engineering by fulfilling all the distribution requirements for the A.B. degree, completing the requirements for the first major in Arts & Sciences and the second major in business or engineering. With careful planning this can be done within the 120 units required for the A.B. degree. For further information on second majors in business go to the Web site:

www.olin.wustl.edu, and for further information on the second major in engineering go to the Web site: www.cse.wustl.edu.

The Joint A.B./A.M. Program

If you are an exceptional student who brings to the University a definite commitment to a field of study in the College of Arts & Sciences and a demonstrated capacity for intensive work, you may be able to complete simultaneously the Bachelor of Arts and the Master of Arts degrees within a four-year period. The joint A.B./A.M. program is open to students approved by their departments, after completing 9 or more units of 300-level work with high attainment. Eligible students usually enter the College with some college credits already earned and/or carry more than the normal course load in regular semesters and, as appropriate, in summer school.

The program is designed for students able to work in their chosen fields at a serious, professional level. Consequently, applicants should exhibit academic performance represented by a clear B (3.00) average throughout their programs of study, and in courses within the major field or their prerequisites no grade lower than B-. A student in the College who has achieved these academic standards and completed 9 or more units of advanced (300 level or above) course work should consult with the chair of the major department as early as possible in the junior year. Only in exceptional cases will candidates be admitted to the A.B./A.M. program after their fifth semester of study. If the department encourages candidacy, the student should confer with the Assistant Registrar of Graduate Arts & Sciences to assure completion of necessary procedures.

Once the projected course work and other requirements stipulated in the statement of intent have been approved by the Graduate School of Arts & Sciences, the student may embark upon the requirements described below:

Requirements for the joint A.B./A.M. are the following:

1. At least 135 units of college and/or graduate school course work, including all academic and residency requirements for the A.B.
2. At least 30 units of graduate (400- and 500-level) course work in the major field beyond the minimum required for the

A.B. by that department. All courses offered toward the graduate degree must be passed with a grade of B or better and may not be counted toward the major.

3. No more than 9 of the 30 graduate units should be earned in independent study, thesis preparation, or research.
4. Completion of a thesis and/or special examination such that the department can certify that the student has achieved the level of competence normally expected of candidates for the A.M.

Departments may, at their discretion, add requirements such as proficiency in foreign languages.

As in all cases, actual award of each degree will be contingent on successful completion of all requirements for that degree. It is expected that A.B./A.M. students will receive both degrees on the same date. On rare occasions, a student who needs only to finish incomplete course work or final preparation of a Master's thesis in order to complete the A.M. requirements may be permitted to receive the A.B. degree one semester prior to the A.M. degree. If the outstanding Master's work is not completed within one semester, the student will no longer be part of the A.B./A.M. program, but will become subject to the requirements in force for other Master's students in the discipline in question. Extensions of this nature will be granted only with the concurrence of the major department and the Dean of the Graduate School.

Registration and Financial Assistance

A.B./A.M. students are formally admitted into the Graduate School upon completion of the approval process but continue to register for this semester as undergraduates. (They thus assure access to government aid and loan programs available only to undergraduates who have not been certified for completion of the A.B.)

As undergraduate registrants, candidates remain eligible for all of the usual conditions of undergraduate study, including consideration for financial assistance by the Student Financial Services office in accordance with rules and practices adopted by that office for all undergraduates. They are not eligible for various forms of financial aid administered by the Graduate School: University Fellowships, University Scholarships (tuition remission), Teaching Fellowships. However, they may be employed by their major departments on a part-time basis to perform duties, whether classroom-related or other, assigned by that department. Since employment by a department may have a bearing on the amount of financial aid awarded, departments should consult with the Student Financial Services office prior to hiring an A.B./A.M. student.

Exceptions to the policy of awarding no Graduate School support to A.B./A.M. students will be contemplated only if all the following conditions are met:

1. For sound reasons attested to by the major department, students are unable to complete both degrees within four years but can complete them during all or part of a fifth year and

2. Students' financial resources are insufficient to allow them to attend Washington University during the fifth year without financial aid, and
3. In view of the major department and of the Graduate School, the student's academic performance is equal or superior to that of other Master's students currently receiving financial assistance.

If a decision is made to grant aid in these circumstances, students will be admitted into the Graduate School at the beginning of the fifth year. Departments are strongly urged to submit requests for such exceptions to the Dean of the Graduate School in the spring of the preceding academic year, simultaneously with aid requests for all graduate students.

The A.B. and Master Degrees in the Professional Schools

The College of Arts & Sciences—with the Olin School of Business, the School of Engineering & Applied Science, the School of Medicine (Program in Occupational Therapy), and the George Warren Brown School of Social Work—offers joint degree programs whereby you, if accepted into one of these schools, may work toward the A.B. and the first professional degree simultaneously.

All preprofessional students are admitted on the same terms as candidates for the A.B. Any student who expects to fulfill the requirements for entrance into a professional school by the end of any semester should, shortly after the semester begins, apply for admission by applying to the dean's office of that school.

Under this program, you must fulfill the professional school requirements and the following requirements of the College:

1. You must have satisfactorily completed at least 90 academic units in courses offered by the College.
2. You must have completed all of the general education requirements, major requirements, and at least 15 units or the 30 required units in advanced courses; these units will satisfy the A.B. requirements for advanced courses.
3. You also must satisfactorily complete the first year in the Washington University professional school.
4. A transfer student who seeks the A.B. under this plan must complete at least three semesters in full-time residence in the College of Arts & Sciences of Washington University. All other conditions must also be fulfilled.
5. You must be recommended by the faculty of the professional school to the dean of the College of Arts & Sciences.

Olin School of Business

A five-year program combining an undergraduate degree with an M.B.A. is available to a select number of students. (See page 275.)

School of Engineering

A student may apply for the A.B./M.S. program that leads to both a Bachelor of Arts and a Master in Computer Science. For further information visit the Web site:

www.cse.wustl.edu, or contact the department in 509 Bryan Hall.

Occupational Therapy

(Leading to the A.B. and M.S.O.T. or O.T.D. from the Washington University School of Medicine)

Admission to the Program in Occupational Therapy at the School of Medicine requires a bachelor's degree or participation in the 3-2 program. Occupational therapy is an application of the basic biological and social sciences; hence, bachelor's degrees in psychology and biology are useful. Other suitable majors include business, engineering, computer science, and art. Undergraduate students are encouraged to contact the pre-health professions adviser to discuss academic plans.

The 3-2 program blends three years of undergraduate liberal arts (90 academic units) with two years of graduate study in occupational therapy. If you elect the 3-2 option, you will complete the general requirements for the bachelor's degree in Arts & Sciences during the initial three academic years, while simultaneously completing the prerequisites for entry into the Program in Occupational Therapy (OT). Application to the OT program occurs in the fall of your junior year. Qualified, recommended 3-2 students from Washington University receive priority admission status to the Program in Occupational Therapy. The A.B. will be awarded following successful completion of the fourth year. You are awarded an M.S.O.T. following the fifth academic year and six months of fieldwork.

The following prerequisite courses must be completed with a grade of B- or better prior to matriculation in the Program in Occupational Therapy:

- 3 units in biology (200 level or above)
- 3 units in physiology
- 3 units in other physical sciences, such as anatomy, neuroscience, chemistry, or physics
- 3 units in developmental psychology
- 3 units in other social sciences, such as abnormal psychology, sociology, anthropology, or economics
- 3 units in statistics (behavioral, psychological, educational, or mathematical)

Pre-health professions students are encouraged to take OT courses offered to undergraduates, such as Issues of Disability in Society and Promoting Meaning and Quality of Life.

Applicants must also take the Graduate Record Exam and demonstrate competency in medical terminology and computer skills. Completion of at least 30 hours of volunteer/observation time in an occupational therapy-related setting is required.

The Doctor of Occupational Therapy (O.T.D.) is a professional degree providing students the opportunity to focus their OT studies in one of four areas of concentration: Productive Aging, Social Participation and the Environment, Work and Industry, and Pediatrics. The O.T.D. requires 39 months of course work and fieldwork. A full description of degrees in occupational therapy is available from the office of the Program in

Occupational Therapy, or you can visit the Web site: www.ot.wustl.edu.

Information on financial aid for this program may be obtained from the Office of Financial Aid at the medical school. Occupational therapy merit scholarships are available for students entering the program.

Social Work

(Leading to the A.B. and M.S.W. from the George Warren Brown School of Social Work)

Prerequisites for admission to the George Warren Brown School of Social Work are the same for those holding the A.B. or for those students who seek admission after the junior year in the College of Arts & Sciences. All applicants must have completed at least 30 units in the social sciences (anthropology, economics, political science, or psychology) and must have maintained at least a B+ average in all undergraduate work.

If you wish to enter the joint degree program, you should apply with the George Warren Brown School of Social Work during the first semester of your junior year. You will be evaluated on the same basis as students applying with an undergraduate degree. If you enroll for a joint degree, you will complete all requirements for both the A.B. and the M.S.W. at the end of five years of study.

Undergraduate Preprofessional Preparation

If you plan to pursue professional studies, you should refer to the recommendations given below.

Architecture

See the College of Architecture section in this *Bulletin*.

Business Administration

Students in the College of Arts & Sciences are welcome to consult with the associate dean for the undergraduate program in the Olin School of Business concerning any aspect of preparation for careers in business.

Law

The two most significant factors law schools use in determining whom to admit for legal study are the undergraduate GPA (taking into consideration the difficulty of courses attempted and the breadth of study) and the score on the Law School Admission Test (LSAT). Admission to law school requires a bachelor's degree. There is no required set of courses for pre-law study at the undergraduate level.

Many law school applicants have majors in political science, history, philosophy, economics, and English, but law schools also seek students with undergraduate majors in science, engineering, business, and other disciplines. Whatever area(s) you choose to emphasize in your undergraduate studies, be sure to take courses that require significant amounts of writing and courses that train you to think analytically. Seek out courses that require application of principles or theories to new situations, and courses requiring original writing and revision of your written work in response to comment and critique. It is also important to learn to read and analyze

complex written material and to develop sound research skills.

Political science, history, philosophy, and economics courses can help you develop an understanding of the traditions behind and the development of our legal system. Logic, accounting, and statistics courses also provide valuable background for legal study and the practice of law.

The pre-law adviser in the College of Arts & Sciences is available to help you plan your course of study and prepare a strategy for applying for admission to law school.

Medicine

Premedical students in the College of Arts & Sciences of Washington University must complete the bachelor's degree before admission to a medical school. Besides fulfilling the requirements for the A.B., you must fulfill the entrance requirements of the medical schools where you plan to apply. Specific requirements, which may vary, are summarized in the handbook *Medical College Admission Requirements*, published annually by the Association of American Medical Colleges.

As a premedical student, you must demonstrate high achievement in academic work and must possess the character, responsibility, and level of commitment suitable for a career in medicine. Since the competition for admission to medical schools is keen, you should follow an educational program that will provide competence in a field that may serve as an alternative to medicine.

All medical schools require at least one year each of English, general biology, inorganic chemistry, organic chemistry, and physics. Laboratory courses also are required in all the science core courses. Most medical schools require a year of college mathematics. Medical schools also encourage applicants to develop a broad intellectual background that includes the humanities and the social and behavioral sciences.

Students interested in the health professions may choose a major in any field—the humanities, the social sciences, or the sciences—as long as they complete the pre-medical requirements. All students who plan to apply to M.D.-Ph.D. programs are advised to major in the sciences and begin a research experience no later than the beginning of their sophomore year. Research opportunities are available both on the Danforth Campus and at the School of Medicine and are open to both science and nonscience majors. Health-related volunteer opportunities also are widely available.

If you enter the University planning to apply to medical school, you should, with the aid of your adviser, structure your course of study to include the medical school requirements. It is strongly recommended that mathematics and chemistry be among the first courses taken and that the medical school requirements be completed by the end of the third college year, when you would normally take the Medical College Admission Test (MCAT).

If you are interested in careers in the health professions, you can draw on the advice and counsel not only of your advisers,

but of the associate dean for pre-health professions in the College.

Physical Therapy

If you are interested in pursuing a career in physical therapy, you must complete a bachelor's degree before entering the Doctor of Physical Therapy (D.P.T.) program. This degree replaced the Master of Science in Physical Therapy (M.S.P.T.) in fall 2001.

Currently, preparation for the D.P.T. degree should include the following course work:

- 8 units in general biology
- 8 units in chemistry with laboratories
- 8 units in physics with laboratories
- 3 units in anatomy (human, vertebrate, comparative, or anatomical kinesiology)
- 3 units in physiology (human physiology preferred)
- 3 units in trigonometry (calculus is acceptable)
- 3 units in statistics
- 6 units in psychology (to include abnormal psychology)
- 6 units in English (to include English composition or an upper-level writing course)
- 6 units in social sciences or the humanities

You also must take the Graduate Record Examination and demonstrate competence in medical terminology. Among the factors on which admission is based are your grade point average (GPA), GRE scores, letters of recommendation, and written essays.

Our Web address is www.physicaltherapy.wustl.edu.

University College

Students in the College may enroll in course work offered by University College (see page 6) provided they do not exceed one course a semester. University College courses are subject to the degree requirement that stipulates only 30 units from one of the other schools of the University may be applied to the Bachelor of Arts degree. University College courses, unless so designated, do not fulfill distribution requirements.

Academic Regulations

Maximum and Minimum Loads

The average course load necessary to fulfill the required 120 units for the bachelor's degree in timely fashion is 15 units—typically, five courses—in each semester. If you receive grades of C– or better in all courses in the previous semester, however, you may carry up to 18 units. If you have completed outstanding work in previous semesters, you may take up to 21 units of work. You may not enroll for more than 21 units.

Courses in the College that require more preparation and class time than average—foreign languages, mathematics, and science—may carry 4 or 5 units of credit. When enrolled in these and other demanding courses, you are advised to take fewer than 15 units of academic work in particular semesters, then to balance such intensive semesters with modest over-enrollments in subsequent semesters.

Except for reasons of health or other spe-

cial circumstances, the minimum load is 12 units, but any enrollment between 12 and 18 units is considered normal.

Absences

Successful education at the college level depends to a large extent on regular attendance at classes and laboratories. The College of Arts & Sciences has no fixed rules for “cuts” or “excused absences” but leaves to the judgment of each department or instructor the number of absences of any kind a student may have and still expect to pass a course. The faculty expects each instructor to give reasonable consideration to unavoidable absences and to the feasibility of making up missed work. The student is expected to explain to instructors the reasons for such absences and to discuss the possibility of completing missed assignments.

The Grading System

The system now in use in the College of Arts & Sciences assumes that evaluation is useful to effective learning and that grades provide an indicator of accomplishment to the student, to advisers and the College Office, to graduate and professional schools, and to employers to whom the student chooses to submit them. Grades are symbols of achievement in a *particular* endeavor and should not be confused either with achievement itself or with personal worth.

Grades *are* important, particularly for students with preprofessional interests, but the student whose concern for grades is primary may lose sight of the total educational process.

Grade

- A** Superior
 - B** Good
 - C** Satisfactory
 - D** Passing, though marginal
 - F** Failing
 - CR** Credit awarded, but the work was not subjected to finer evaluation
 - NCR** No credit awarded due to unsatisfactory work
 - I** Incomplete. The semester's work was not finished.
 - W** Withdrawal. The student withdrew from the course prior to completion.
 - R** Repeat. The course has been retaken.
 - L** Audit. The student satisfactorily audited the course throughout its progress.
 - Z** Audit. The student did not satisfactorily audit the course.
 - N** No grade was submitted.
- Grades earned in physical education courses are not included in calculating the student's GPA.

The Credit/No Credit Option

To encourage students to enroll in courses they might not otherwise take, the faculty has established the credit/no credit option under which you may register in courses and receive a grade of credit or no credit. In any semester a full-time student may enroll in one course under the credit/no credit option. You may *not* apply toward the A.B. more than 24 units earned under this option. You must designate which course is to be taken

under the credit/no credit option each semester at the time of registration. No change into or out of the option may be made after the dates designated in the calendar of the College of Arts & Sciences, published in *Course Listings* each semester.

No more than 12 of the 24 units allowed for the credit/no credit option may be applied to distribution requirements.

The first-year writing course, the writing-intensive course, the quantitative analysis course, and courses in the major and minor, are excluded from the credit/no credit option. Preprofessional and prospective graduate students should also consider seriously the strong probability that professional schools may seek more definite grades than CR in courses that are required or strongly recommended for admission to professional or graduate study.

A few courses particularly designated by departments may require enrollment on a credit/no credit basis. When so required, you are permitted to elect an additional course to be taken credit/no credit but should consider carefully the consequences of that choice. You should be sure you understand from the instructor what the lowest letter grade is that will equate passing in a credit/no credit course.

Auditing a Course

You may register for a specific course as an auditor. This status entitles you to all the privileges of a regularly enrolled member of the class. Audit courses do not count toward the degree. Consult the instructor on the requirements of a successful audit, as unsatisfactory performance results in a grade of Z. A successful audit results in a grade of L.

Repeating a Course

A student may be allowed to retake the course with the department's permission. The department has the authority to refuse the student's request and will not feel obligated to grant permission after the fact if the student has enrolled on the assumption that the R will be granted automatically. A student wishing to repeat a course should do the following:

1. Pick up the Approval for Retake form in the College office;
2. Have the first instructor or department designee sign the form before retaking the course;
3. Have his/her adviser sign the form before retaking the course;
4. Turn the completed form in to the College of Arts & Sciences before retaking the course.

If permission to retake a course is granted, both registrations will show on the transcript. The grade in the first enrollment will always be replaced by the symbol R and the grade and units in the second enrollment used to calculate the GPA. No student may use the retake option to replace a grade received as a sanction for violation of the Academic Integrity Policy. Retaken courses must be taken for the same grade option as the course was originally taken.

This procedure is not pedagogically sound and should be avoided in all but seri-

ous cases, such as a grade of D in a course required for the major.

To repeat a College course in Washington University Summer School or in University College requires the department to certify in advance the course's equivalence to the College course.

Reporting of Grades

At the end of each semester, a full report of all grades for all students, based on work for the entire semester, is filed with the University Registrar. Students may access their final semester grades on WEBSTAC; grades are not mailed to students or parents.

Withdrawals and Course Changes

You may enroll in or withdraw from courses only at designated periods of the semester. You should consult with your adviser before doing so. The dates of these periods are given in *Course Listings* each semester. Exceptions will be made only if, in the opinion of the deans, circumstances warrant them.

Any student who, for any reason whatsoever, wishes to withdraw from the College of Arts & Sciences before the end of a semester should consult a dean so that the record of the student's work may be clear and complete. No such withdrawal will be official until you file in the College Office a written request for withdrawal and that request has been approved by a dean.

Incomplete Courses

By action of the Faculty and the ArtSci Council, the College limits the number of accrued grades of Incomplete (I). The policy is intended to protect the student from building an overwhelming burden of unfulfilled course work. The regulation reads as follows: "Students who accrue three or more Incompletes will not be permitted to enroll for any subsequent semester until the number is reduced to two or fewer." Should students have too many incompletes, they will be declared ineligible for the following semester until they have satisfied enough of their outstanding work. This is normally achieved by the posting of grades online, but it may also be achieved by a note from a professor (or professors) to the College Office confirming that the student has turned in all requisite assignments for the relevant class (or classes).

If you experience medical or personal problems that make satisfactory completion of course work difficult or unlikely, you may request a grade of I (incomplete) from one or more instructors. In such a situation you should take the following steps:

1. Pick up an Incomplete petition in the College Office.
2. Meet with the instructor before the final examination or due date for the final paper to discuss the request.
3. If the instructor consents, agree on the work remaining to complete the course and on a date—no later than a year following the conclusion of the course—when it will be submitted.
4. Leave a copy of the petition with the instructor, submit one to the College Office,

and retain one as your record.

If these steps are not followed, the instructor is under no obligation to award a grade of I. The dean will not accept more than two Incomplete petitions for a single semester without compelling medical evidence. An incomplete not made up within 12 months may revert to a grade of F.

Leaves of Absence

For certain students, time spent away from the academic setting is of great value in discovering objectives and gaining experience not available within the academic community. If you are an undergraduate in good standing at the completion of a term, you are eligible to take a leave of absence upon petition to the College Office. On a leave of absence you are assured re-enrollment within the next two years. Before returning you are asked to notify the College Office and submit a Reinstatement Form at least six weeks prior to the beginning of the appropriate term. A student wishing to have a medical leave of absence must have a recommendation for the MLOA from Student Health Services submitted to the appropriate dean in the College Office prior to leaving and prior to re-enrollment. The dean in the College Office will decide whether or not to grant the request for the MLOA and re-enrollment upon reviewing the recommendations from Student Health Services and the student's file.

Academic Probation and Suspension

Students are expected to maintain the highest level of scholarship of which they are individually capable as well as to meet the standards set by the faculty and, in the case of financial aid recipients, by the federal government. The minimum standard of academic progress to avoid loss of federally funded aid is completion of 20 units by the end of the first year, 45 units through the sophomore year, and 75 units through the junior year, in each case with a C– average.

The College, however, expects students to work at a level well above the minimum: Those who do not complete at least 12 units with a semester grade point average of C or better for each semester are subject to either an academic warning or, in extreme cases of poor academic performance, suspension.

In the event of an academic warning, the student will be matched with a progress counselor for the following semester and will be expected to sign an agreement with the progress counselor as to how improvement will be achieved. Failure to establish these guidelines with the progress counselor by the end of the second week of the relevant semester may result in the termination of the student's enrollment for that semester. Furthermore, should a student agree to, but persistently fail to, abide by the terms established in the agreement, suspension may be invoked during the semester.

A student on probation is expected to earn at least 12 units of credit and earn no single grade of C– or lower while on probation. Any student on probation whose performance in the following semester does not

show this level of improvement is subject to academic suspension from the College. If a student is suspended for academic deficiency, he or she will not be eligible for readmission to the College of Arts & Sciences for two semesters and until he or she has demonstrated, under the conditions set for each individual case, a readiness to work productively at the level required by the College curriculum.

Academic Honors

Honors Programs

All departments and most interdisciplinary programs offer Honors work for majors leading to Senior Honors. Senior Honors are determined on the basis of your performance throughout seven semesters in the College.

To be eligible for such Honors, you must have maintained a 3.5 grade point average through the sixth semester and must be accepted for candidacy by the department or area committee concerned. You must enroll in such courses as the department or interdisciplinary committee may require, complete satisfactorily a significant project appropriate to the nature of the discipline, and pass such written or oral examinations as the department or area committee may set. Upon completion of the Honors program, you may be awarded the A.B. cum laude, magna cum laude, or summa cum laude through achievement of cumulative averages of 3.5, 3.65, or 3.8, respectively, and recommendation by the department or area committee to the College Office for review, based in part on the evaluation of the senior project. Recommendations for Honors will ultimately depend on demonstrating genuine understanding of your discipline and high scholarly attainment.

The A.B. with College Honors will be awarded to you, upon assessment by the College Office, if you have achieved college-wide academic excellence as measured by a cumulative average of 3.5 or better throughout seven semesters but have chosen not to participate in a departmental Honors program.

To be eligible for Honors, transfer students must have earned 45 graded Washington University units prior to the final semester; grades earned at other institutions do not figure in the calculation of minimum averages required for eligibility for Honors.

The Dean's List

In recognition of exceptional scholarship at the end of each semester, the College Office compiles a list of those students whose work has been particularly worthy of commendation. You will be cited on the Dean's List if you meet the following academic standards: completion of a minimum of 14 units of graded work while achieving a grade point average of 3.5 that semester.

Phi Beta Kappa

For more than 200 years, election to Phi Beta Kappa has been a distinctive recognition of intellectual accomplishment in the liberal arts and sciences. The Washington

University Chapter, Beta of Missouri, established in 1913, strives to enhance worthy intellectual endeavors and to recognize individual achievement.

Candidates for Phi Beta Kappa should have demonstrated both superior scholarship, as well as breadth and depth of interest in the liberal arts. Study of a foreign language and of mathematics, while not required, strongly enhances candidacy. Extensive study in professional fields detracts from candidacy.

Each year the Washington University chapter elects students into membership from the College of Arts & Sciences. Students do not apply for membership. The chapter also gives the annual Burton M. Wheeler Book Award for distinguished achievement in the first year. Selection committees are composed of Washington University faculty who are members of Phi Beta Kappa.

Departmental Prizes and Awards

Several departments recognize the superior achievement of graduating seniors with election to the honor societies in their major fields. These honor societies include Sigma Gamma Epsilon for earth and planetary sciences students, Omicron Delta Epsilon for economics students, Delta Phi Alpha for German students, Phi Alpha Theta for history students, Pi Mu Epsilon for mathematics students, Mu Phi Epsilon for music students, Pi Sigma Alpha for political science students, and Psi Chi for psychology students.

In a number of academic fields, special recognition is given to students whose accomplishments have been noteworthy. The majority of such awards carry modest monetary benefits. They include the following:

Academy of American Poets Prize Achievement in German Prize Richard Admussen Prize in Romance Languages
Leota Diesel Ashton Prize in Playwriting Award for Contributions to Anthropology Award for Excellence in Research in Anthropology
Award for Outstanding Leadership in Anthropology
Award for Outstanding Senior Research in Social Thought and Analysis
James Baldwin Essay Prize in African and African American Studies
John W. Bennett Prize to the Outstanding Graduate in Anthropology
Rowland T. Berthoff Award in History Best Honors Thesis in Political Science
Margaret E. Bewig Memorial Field Camp Scholarship in Earth and Planetary Sciences
Leanna Boysko Essay Prize
David Bronsen Prize
David Bronsen Prize (German)
Ralph Bunche Prize in African and African American Studies
Ian D.W. Cramer Award in Dance
Antoinette Dames Prize in Political Science for the Outstanding Senior Honors Thesis
F. Ward Denys Prize in English
Liselotte Dieckmann Prize for Excellence in Comparative Literature

Dramatics Club Prize
Stephen H. Duncan Prize for Technical Theatre
Sherman Eoff Prize for Excellence in Spanish
Essay Prize in Literary Criticism in Russian
Margaret Ewing Prize for Acting Excellence in Anthropology
Joy Ezra Book Prize in English
Todd Lewis Friedman Prize in Political Science
Carrie S. Galt Award in Fiction
Goff Prize in English
J. Walter Goldstein Prize in History
Robert J. Greef Award in English
Henry Hampton Prize in African and African American Studies
Roger Conant Hatch Prize in English
John G. Jutkowitz Memorial Fund Prize in Performing Arts
Harriet Schwenk Kluver Prize for Excellence in Writing
Arnold J. Lien Prize in Political Science
Norma Lowry Memorial Fund Prize in English
Roberta Luery Award for Study in France
Patrice Lumumba Award in Black Studies
Nishi Luthra Prize in Philosophy
The William H. Matheson Prize for Excellence in Comparative Literature
Hyman Meltzer Memorial Award for Undergraduate Research in Psychology
Hyman P. Mensley Prize in Economics
Herbert E. Metz Prize for Dramatic Literature
Ross Middlemiss Prize in Mathematics
Howard Nemerov Prize in Creative Writing
Ernest L. Ohle Award in Earth Sciences
John M. Olin Prize for Excellence in Economics
Outstanding Paper for an Upper-Division Undergraduate Class in Political Science
William Benton Parshall Prize in Political Science
Prize for Excellence in Russian
Putnam Examination Prize in Mathematics
Paul and Silvia Rava Prize for Excellence in Italian Studies
Robert H. Salisbury Prize in Political Science
Steven S. Schwarzschild Prize in Jewish Studies and Philosophy
Senior Honors in Anthropology
Senior Physics Prize for Outstanding Performance
Service in Anthropology
Adam Smith Prize in Economics
John C. Sowden Prize in Chemistry
Marian Smith Spector Prize in Biology
Harrison Dailey Stalker Award in Biology
Helen Stenner Essay Competition in Philosophy
John A. Stern Award for Undergraduate Research in Psychology
Tavener Prize in Classics
Percy Tucker Scholarship in Economics
Robert N. Varney Prize for Introductory Physics
Jinx Walker Poetry Prize of the Academy of American Poets
Shirley McDonald Wallace Prize in History

Edward Weltin Prize in Ancient History
Courtney Werner Memorial Prize in Earth Sciences
Louis G. Zelson Prize in Spanish

Scholarship and Loan Funds

Scholarship Funds

Below is a listing of scholarship funds administered by Washington University for students in the College of Arts & Sciences exclusively:

George and Ethel R. Bishop Scholarship Fund. For undergraduates preparing for admission to schools of medicine.
Andrew Britva Memorial Scholarship. Established as a memorial to Andrew Britva by his family and friends for undergraduate students majoring in the biological sciences.
The Julia Ray Chassels Memorial Fund. A merit scholarship awarded to a freshman, sophomore, or junior pursuing the study of music.
Bernice Fuller Connell Scholarship Fund. For undergraduates enrolled in the College of Arts & Sciences.
Sarah A. Connor Scholarship Fund. A bequest of Sarah A. Connor for students enrolled in the College of Arts & Sciences.
Antoinette Frances Dames Awards for Productive Scholarship. A bequest of Antoinette Frances Dames for scholarships in various fields of study.
Andrew and Susie Fleming Scholarship Fund. For undergraduates enrolled in the College of Arts & Sciences.
Charlotte A. Friedman Scholarship Fund. For undergraduates enrolled in the College of Arts & Sciences.
Frank Blair and Harriet Cavender Hanson Scholarship Fund. Established in their memory by their daughters for undergraduates majoring in biological sciences.
Arthur Hoskins Scholarship Fund. For undergraduates enrolled in the College of Arts & Sciences.
Howorth Scholarship Fund. Endowed in memory of Minnie M. Howorth for students preparing for a teaching career, particularly in the elementary schools.
Stephen Klepka Scholarship Fund. For undergraduates majoring in history.
John Ashbury Lewis II Memorial Scholarship Fund. A bequest by Wilson Lewis in memory of his son for a junior or senior in the College of Arts & Sciences, preferably an athlete.
The Manufacturers' Bank and Trust Scholarship Fund. For undergraduates enrolled in the College of Arts & Sciences.
Aubrey C. Mills Scholarship Fund. Established as a memorial to Aubrey C. Mills by his wife, Marion L. Mills, for students in the College of Arts & Sciences.
Cornelia A. Mueller Scholarship Fund. For undergraduate women in the College of Arts & Sciences preparing for a career in education.
Frederick Nussbaum Scholarship Fund. For an undergraduate student majoring in music, the recipient to be selected by the Department of Music.

Dolores M. Paul Scholarship Fund. For undergraduates studying mathematics.

George W. Pieksen Memorial Scholarships. Established by gift of Margot I. Pieksen as a memorial to her husband for scholarships in the College of Arts & Sciences.

Ronald Prentke Scholarship Fund. Established by Marjorie Prentke and Mr. and Mrs. Ottesen Prentke for undergraduates majoring in psychology.

The Presser Foundation Scholarship. For undergraduate majors in music, with preference to those who expect to become teachers of music.

Mildred Rubin Memorial Scholarship Fund. Endowed in memory of Mildred Rubin by her parents, Miriam and Abraham Holtzer, for scholarships in the College of Arts & Sciences, with preference given to students of the natural sciences and literature.

Clarence W. Schnatzmeyer and Anna E. Seibuhr Memorial Scholarship Fund. A bequest by Catherine R. Schnatzmeyer in memory of her husband and mother for undergraduates in the College of Arts & Sciences.

John E. Simon Scholarship Fund. For undergraduates in the College of Arts & Sciences preparing for a career in medicine.

Marie Davis and Harry Thompson Scholarship. For juniors and seniors in the College of Arts & Sciences.

Tower Grove Bank and Trust Company Scholarship. Established by Tower Grove Bank and Trust Company for students in the College of Arts & Sciences.

Percy Tucker Scholarship Fund. A gift from Paul Tucker, honoring his father, for an undergraduate majoring in economics.

The Marie Weinreich Winchester Scholarship in Music. A merit scholarship awarded to a student majoring in music.

Zeip Memorial Scholarship. Established by Ben and Lydia Zeip in memory of their daughter Vera for undergraduates majoring in English or economics.

Arts & Sciences Scholarship Program

The College of Arts & Sciences, in collaboration with the Office of Alumni and Development Programs, offers a program of scholarships to talented and deserving undergraduate and graduate students. These scholarships, which provide both annual and endowed support, are funded by alumni and friends of Washington University.

An annual dinner, held each fall, provides an opportunity for students and sponsors to meet.

The following scholarships were funded through the Arts & Sciences Scholarship Program:

Benefactor Endowed Scholarships

The Berenice Fuller Connell Scholarships. Established by Mrs. Berenice Fuller Connell.

The Mr. and Mrs. Nicolas M. Georgitsis Scholarship. Established by Mrs. Nicolas M. Georgitsis.

Founder's Endowed Scholarships

The Charles W. Buescher Memorial Scholarship. Established by Adele M. Buescher.

The Thomas S. Duncan Scholarship. Established by Miss Eleanor A. Bergfeld.

The Charles C. and Hildur Mannebach Memorial Scholarship. Established by Mrs. Hildur Mannebach.

The Joseph and May Winston Memorial Scholarship. Established by Mr. and Mrs. David A. Winston and Mr. and Mrs. Allan B. Winston.

Sustaining Endowed Scholarships

The Bernard M. Barenholtz Scholarships. Established by Mrs. Bernard M. Barenholtz.

The Warren A. and Deloris Coy Boecklen Scholarships. Established by Mrs. Warren A. Boecklen.

The Otis and Carol Bowden Scholarship in Physics. Established by Mr. Otis H. Bowden II.

The Marianne Fischer Scholarship. Established by Mr. Charles W. and Dr. Margo Todd.

The Rosalind and Morris Golman Scholarships. Established by Mr. and Mrs. Morris Golman.

The Catharine M. Lieneman Scholarship. Established by Miss Catharine M. Lieneman.

The Cornelia A. Mueller Scholarship. Established by Mrs. Cornelia A. Mueller.

The Roma Schaefer Nooter Scholarship. Established by Mrs. Roma Schaefer Nooter.

The Gary Clemens Roth Scholarship Fund. Established by Mrs. Olga Roth.

The James H. and Mary Josephine Schudy Scholarship. Established by Dr. Fred F. Schudy.

The Elmer J. and Catherine F. Scott Endowed Scholarship. Established by Mrs. Catherine F. Scott.

The Maxwell Weiner Memorial Scholarship. Established by Mr. Maxwell C. Weiner.

Endowed Scholarships

The Ida Doris Pearline Appel Scholarship. Established by Dr. and Mrs. Michael F. Appel.

The Evadne Alden Baker Scholarship. Established by Mrs. Kenneth C. Baker.

The Dr. Leo Bartels and Pauline Bartels Hurlbut Scholarship. Established by Gen. and Mrs. Oren E. Hurlbut.

The Joseph H. Bascom Memorial Scholarship. Established by Rev. and Mrs. John D. Evans III.

The Grace E. Bergner Memorial Scholarships. Established by Dr. Grace Bergner.

The George H. and Ethel R. Bishop Scholarship. Established by Dr. and Mrs. George H. Bishop.

The Donald S. Bottom Scholarship. Established by Mrs. Donald S. Bottom.

The David B. Buffington Scholarship. Established by Mrs. Barbara Buffington.

The Clara Giese Cist Scholarship. Established by Mrs. Franklin M. Cist.

The Walter Clark and Kerstin Hruska Clark Scholarship. Established by Mr. and Mrs. Walter Clark.

The Susan and Emma Coultas Scholarship. Established by Miss Susan Coultas.

The Claire Gempp Davidson Scholarship. Established by Miss Elizabeth Gempp.

The H. James Davidson Memorial Scholarship. Established by Mr. E. Eugene Carter.

The Johan Egilsrud Memorial Scholarship. Established by Mrs. Helen L. Sverdrup.

The Fischer Family Scholarship. Established by Mr. and Mrs. Timothy Fischer.

The Michael Friedlander Scholarship. Established by an anonymous donor.

The Charlotte A. Friedman Scholarship. Established by Miss Charlotte A. Friedman.

The Rose and Emanuel Gahan Scholarship. Established by Mr. Arthur Gahan.

The Otto E. Gansow Memorial Scholarship. Established by Mr. Otto E. Gansow.

The Julia A. Gehm Scholarship. Established by Miss Julia A. Gehm.

The Anne Varhol and Mark Jay Ginsburg Scholarship. Established by Dr. Mark Jay and Ms. Anne Varhol Ginsburg.

The Edmund O. Godbold Scholarship. Established by Mr. Edmund O. Godbold.

The Sara Green Cohan and Jonathan Green Scholarship. Established by Mr. Daniel Alan and Ms. Sara Green Cohan and Mr. Jonathan Green.

The Anna R. and Edward O. Haenni Scholarship. Established by Dr. Edward O. Haenni.

The Blair Hanson Scholarship. Established by Dr. Blair Hanson.

The Lynne Cooper Harvey Scholarship. Established by Mrs. Lynne Cooper Harvey.

The August and Ruth Homeyer Scholarship. Established by Dr. and Mrs. August H. Homeyer.

The Houston Kirk Scholarship. Established by Mr. Houston Kirk.

The Alene and Meyer Kopolow Scholarship. Established by Mrs. Meyer Kopolow.

The Sandra Mizes Last Scholarship. Established by Dr. Sandra P. Last.

The John W. Lawless Scholarship. Established by Mr. and Mrs. John W. Lawless.

The Jeannette and John Lebens Scholarships. Established by Mrs. John C. Lebens.

The Levis Family Scholarships. Established by the Robert Levis Family.

The Milton Lewin Endowed Scholarship. Established by the Estate of Milton Lewin.

The Lucy and Stanley Lopata Scholarship. Established by Mrs. Lucy Lopata.

The Minnie Makovsky Scholarship. Established by Mr. and Mrs. Kenneth D. Makovsky.

The Robert McDowell Scholarship. Established by an anonymous donor.

The Frances L. Mensh Memorial Scholarship. Established by Dr. Ivan N. Mensh.

The Jack E. and Mina Dill Morris Scholarship. Established by Dr. Mina Dill Morris.

The Phillip Mountjoy and Anne Weir Mountjoy Scholarship. Established by Dr. Phillip and Mrs. Anne Mountjoy.

The Roma Schaeffer Nooter Scholarship.

Established by Mrs. Roma Schaefer Nooter.

The Kathy Gudermuth O'Donnell Scholarship.

Established by Mr. James V. and Mrs. Kathy G. O'Donnell.

The William Julius and Marie Prange Oetting Scholarship.

Established by Mrs. William J. Oetting.

The Verna Voisin Palecek Scholarship.

Established by Mr. Joseph Martin Palecek.

The Roland Quest Scholarships.

Established by Ms. Phyllis Tirmenstein.

The Morris B. Retner Scholarship.

Established by Mr. and Mrs. Ronald M. Retner.

The Peter Riesenberg Scholarship.

Established by an anonymous donor.

The Judith Ross Scholarships in Mathematics and Physics.

Established by Mrs. Judith F. Ross.

The Martin Rothman Scholarship.

Established by Mr. and Mrs. Douglas Sherman Rothman and Mr. and Mrs. Russell Rothman.

The William Henry and Alta Woodson

Rothschild Scholarship. Established by Ms. Ruth W. Rothschild.

The Dr. Edwin L. Sheahan and Deborah Martin Sheahan Scholarship.

Established by Dr. Mary Sheahan Lauderdale-Howard & Miss Deborah J. Sheahan.

The Martin K. Speckter Scholarship.

Established by Mr. and Mrs. Martin K. Sneider.

The Elvera Stuckenberg Scholarship.

Established by Miss Elvera Stuckenberg.

The Barbara S. Schaps Thomas and David M. Thomas Scholarships.

Established by Mr. David and Ms. Barbara Thomas.

The Dr. Carl Tolman Memorial Scholarship.

Established by Mrs. Carl Tolman.

The Fanchon and Herbert Weitman Scholarship.

Established by Mr. Herbert Weitman.

The George Williams Scholarships.

Established by Mr. George H. Williams.

The Roma and Raymond Wittcoff Scholarship.

Established by Mr. and Mrs. Raymond H. Wittcoff.

The Pearl and Albert Woll Scholarship.

Established by Mrs. Susan A. Woll.

The John R. and Eloise Mountain Wright Scholarship.

Established by Mr. and Mrs. John R. Wright.

The Zeffren Family Scholarship.

Established by Dr. Eugene and Mrs. Tita Zeffren.

Term Endowed Scholarships**The Class of 2001 Scholarship.**

Established by the Class of 2001.

The Orah L. Ahlberg Memorial Scholarship.

Established by Mrs. Orah L. Ahlberg.

The Ameren Scholarships.

Established by the Ameren Corporation.

The Irby and Bernice Schramm Cooper Scholarship.

Established by Mrs. Bernice Cooper.

The Frisch Family Scholarship.

Established by Drs. David M. and Janis Frisch.

The Gold Family Scholarship.

Established by Dr. and Mrs. Mark Stephen Gold.

The Marion E. Horstman Scholarship.

Established by Miss Marion E. Horstman.

The David Horton Scholarship.

Established by Mrs. Amy G. Miller.

The Therese K. and Robert A. Kreier Scholarship.

Established by Mrs. Ann Brown.

The Levin Family Scholarship.

Established by Mrs. Lois C. Levin.

The Wilbur May Foundation Scholarships.

Established by Ms. Dee May-Baker.

The Frances L. and Dr. Ivan N. Mensh Scholarship.

Established by Dr. Ivan N. Mensh.

The Lydia and C. Theodore Richter Scholarship.

Established by Mr. Remi Eberenz.

The Edna and Adam Rosenthal Scholarship.

Established by Mr. and Mrs. Richard S. Rosenthal.

The SEMCOR Scholarship.

Established by Mr. and Mrs. Rudolph Freedman.

The Strenger-Beckmann Scholarship.

Established by Mr. David C. and Dr. Esther S. Beckmann.

The Reverend Dr. David B. White and Mrs. Betty J. White Scholarship.

Established by Rev. Dr. and Mrs. David B. White.

Annual Patron's Scholarships**The Distler Family Scholarships.**

Established by Mr. and Mrs. Stephen Distler.

The Hancock Family Scholarships.

Established by Mr. and Mrs. Kenneth R. Hancock.

The Virginia Storer Scholarships.

Established by Mr. and Mrs. William M. Van Cleve.

Annual Benefactor's Scholarships**The Jesse Nathan Abramowitz Memorial Scholarship.**

Established by Dr. Joel W. and Dr. Joan Abramowitz.

The John Alpern Scholarship.

Established by Mr. and Mrs. Robert A. Wagner.

The Judith Tytel Catalano Scholarship.

Established by Ms. Judith Tytel Catalano.

The Clear Family Scholarships.

Established by Mr. John Michael Clear and Ms. Isabel Marie Bone.

The Virginia and William E. Cornelius Scholarships.

Established by Mr. and Mrs. William Edward Cornelius.

The Distler Family Scholarship.

Established by Mr. and Mrs. Stephen Distler.

The Laurie E. Lang Scholarship.

Established by Ms. Laurie Ellen Lang.

The Bryn Sara Linkow Foundation Scholarship.

Established by Dr. and Mrs. Mark Linkow.

The Louise and Louis Lockwood Scholarships.

Established by Mrs. Louise Lockwood.

The Sandy Loewentheil-Jackie Robinson Minority Scholarship.

Established by Mr. Sanford Loewentheil.

The Priscilla and Sanford McDonnell Scholarship.

Established by Mr. and Mrs. Sanford N. McDonnell.

The Susan Jane Miller Scholarship.

Established by Ms. Susan Jane Miller.

The A. Wellborne Moise Scholarships.

Established by Mrs. A. Wellborne Moise.

The Marie and William J. Oetting Scholarship.

Established by Mrs. William J. Oetting.

The Renée and William Pollard Scholarship.

Established by Mr. and Mrs. William B. Pollard III.

The Roth Family Scholarship.

Established by Mr. and Mrs. Laurence Roth.

The Aaron Schneider Memorial Scholarships.

Established by Mrs. Ruth Beidler Schneider.

The Maurice E. and Clarice B. Serling Scholarship.

Established by Miss Susan H. Serling.

The Virginia Storer Scholarship.

Established by Mr. and Mrs. William M. Van Cleve.

The Theodore H. Von Laue Scholarship.

Established by Mr. Kenneth M. Grandberg and Ms. Marcy D'Agostine.

The Orpha B. Wayland Scholarship.

Established by Mr. Joseph Franklin Wayland and Ms. Patricia Verrilli.

The Mary T. Zeller Memorial Scholarship.

Established by Mr. and Mrs. Lyle Dean Zeller.

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lished by Mr. and Mrs. William G. Tragos.

The Amelia Troik Scholarship. Established by Dr. Diana Troik.

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The George A. Zimmer Scholarships. Established by Mr. and Mrs. George A. Zimmer.

Other Awards

The Lynne Cooper Harvey Fellowships. Established by Mrs. Lynne Cooper Harvey.

The Lennette Field Research Award. Established by Drs. David and Evelyne Lennette.

The SRC Education Alliance Graduate Scholarship. Established by SRC Education Alliance.

Special Awards

Each year, the College of Arts & Sciences offers up to 12 fellowships—distributed among the humanities, the social sciences, the life sciences, and mathematics and physics—to outstanding entering first-year students. These merit-based scholarships, which are awarded in a national competition, honor distinguished former faculty members Florence Moog, George Mylonas, and Arnold J. Lien, and former Chancellor Arthur Holly Compton. Each carries an award of full tuition plus a \$1,000-a-year stipend for four years.

The Compton, Mylonas, Moog, and Lien competitions require special applications. Applications, plus an additional essay and recommendation, must be submitted no later

than January of the year prior to prospective entrance into the College. (The exact date in January will be set by the Office of Undergraduate Admissions.) For further information, contact the Director of Honorary Scholarship Programs, College of Arts & Sciences, Campus Box 1117, One Brookings Drive, St. Louis, Missouri 63130-4899.

Compton or Moog applicants may be considered for the J. Stephen Fossett Pathfinder Fellowship in Environmental Sustainability if they are interested in environmental studies. For more information, see the Pathfinder Web site at wufs.wustl.edu/pathfinder.

Loan Funds Established for College Students

Auer-Rosenfeld Memorial Loan Fund. Established by gifts from Elizabeth Rosenfeld Auer in memory of her husband, Dr. Albert E. Auer, and her parents, Florence and Arthur Rosenfeld, for loans to undergraduate students in the College.

Arnold J. Lien Student Aid Fund. Established as a memorial to Arnold J. Lien, professor of political science, by his friends and former students for financial assistance in various fields of study.

George F. McMillen Loan Fund. Established by gift of George F. McMillen for male students in science and engineering.

For information about eligibility and other conditions for using loan funds, you should contact the Office of Student Financial Services (see page 1).

A&S Requirements for College of Arts & Sciences students (for more information, see page 27).

CD = Cultural Diversity
 LA = Languages and the Arts
 NS = Natural Sciences and Mathematics
 QA = Quantitative Analysis
 SD = Social Differentiation
 SS = Social Sciences
 TH = Textual and Historical Studies
 WI = Writing-Intensive Course

FA Requirements for College of Art students (for more information, see page 305).

AH = Art History
 Comp = English Composition
 Lit = Literature
 NSM = Natural Sciences or Mathematics
 SSP = Social Sciences or Philosophy

African and African American Studies

Director

John Baugh

Margaret Bush Wilson Professor in Arts & Sciences
(Linguistics)
Ph.D., University of Pennsylvania

Endowed Professors

Gerald L. Early

Merle Kling Professor of Modern Letters
(English)
Ph.D., Cornell University

James Gibson

Sidney W. Souers Professor of Government
(Political Science)
Ph.D., University of Iowa

Professors

David Konig

(History)
Ph.D., Harvard University

Kimberly Norwood

(Law)
J.D., University of Missouri

Carl Phillips

(English)
M.A., Boston University

Rafia Zafar

(English)
Ph.D., Harvard University

Associate Professors

Christopher Bracey

(Law)
J.D., Harvard University

Garrett A. Duncan

(Education)
Ph.D., The Claremont Graduate School

Timothy H. Parsons

(History)
Ph.D., Johns Hopkins University

Assistant Professors

Leslie Brown

(History)
Ph.D., Duke University

Margaret Garb

(History)
Ph.D., Columbia University

Denise Head

(Psychology)
Ph.D., University of Memphis

Michael Minta

(Political Science)
Ph.D., University of Michigan

Shanti Parikh

(Anthropology)
Ph.D., Yale University

Joseph D. Thompson

(English)
Ph.D., Yale University

Robert T. Vinson

(History)
Ph.D., Howard University

Senior Lecturers

Ronald J. Himes

Henry E. Hampton, Jr., Artist in Residence
B.S., Washington University

Mungai Mutonya

(Sociolinguistics)
Ph.D., Michigan State University

M. Priscilla Stone

(Anthropology)
Ph.D., University of Arizona

Wilmetta Toliver-Diallo

(History)
Ph.D., Stanford University

Adjunct Instructors

Rudolph Clay

A.M.L.S., University of Michigan

Jacqueline Dace

B.A., Webster University

African and African American Studies offers you the opportunity to explore the social, political, and intellectual history as well as the literature, culture, and artistic life of various peoples in the world who are African or of African descent.

Because African and African American Studies embraces a wide spectrum of experiences and issues, the program is both multi- and interdisciplinary in its approach.

Courses are balanced between the humanities and the social sciences. Principal areas of concentration are sub-Saharan Africa and the United States.

Students who major in the program are encouraged to design a course of study that will focus on a particular area of interest. You also have opportunities to do research with faculty or to take internships with organizations such as the Missouri Historical Society. Our summer program in Kenya as well as study abroad in other African countries can further enrich your experience.

Courses in the program are numbered to assist students to progress from introductory courses (100-200+), to intermediate courses (300+), to advanced courses (400+). Students in advanced courses are expected to have previous course work and background in the area of African and/or African American Studies.

The program regularly sponsors lectures on topics of interest to African Americanists as well as Africanists. In many cases, lecturers participate in classes by giving special lectures within the classroom setting.

The Major: You may major in African and African American Studies by completing 27 credits, which must include AFAS 208B, 209B, 3 units in AFAS 401 (senior seminar), and 18 units in advanced courses. You may major in African and African American Studies with a concentration in African Studies by completing 27 credits, including AFAS 208B, 209B, 3 units in AFAS 401 (senior seminar), and 18 units in advanced courses with a significant African component.

The Minor: You may minor in African and African American Studies by completing 18 credits, including AFAS 208B, 209B, and 12 units in advanced courses. You may minor in African and African American Studies with a concentration in African Studies by completing 18 credits, including AFAS 208B, 209B, and 12 units in advanced courses with a significant African component.

Scholastic Honors

Senior Honors: If a student maintains an overall grade point average of at least 3.4 and a 3.5 average in the major by the second semester of his or her junior year, he or she may be eligible to do a Senior Honors thesis. Completed application forms for Honors should be submitted to the director as early as possible, preferably before May 1 of your junior year.

Departmental Prizes: The program offers the opportunity to win monetary prizes for achievement annually. They include the James Baldwin Essay Prize for the best essay on African-American culture, the Julius Nyerere Prize for the best essay in any social science or humanities discipline related to Africa, the Henry Hampton Prize for the best essay on the civil rights movement or any book by Rev. Dr. Martin Luther King, Jr., and the Ralph Bunche Prize awarded for the best essay related to Africans or African Americans and political science. In addition, prizes may also be given for the best undergraduate and graduate personal libraries on African or African-American subjects.

Undergraduate Courses

AFAS 103D. Beginning Swahili I

A beginning language course emphasizing acquisition of reading, writing, and conversational skills in Swahili language. Through video and other multimedia presentations, students are also introduced to the culture of Swahili-speaking communities living in more than a dozen African countries. Five hours a week including culture and language laboratory hours. This course is strongly recommended for students participating in the Summer in Kenya Program. Credit 5 units.

A&S LA

AFAS 104D. Beginning Swahili II

Second semester Swahili language course emphasizing conversational competence and knowledge of Swahili-speaking cultures of East Africa. In addition to learning grammar and vocabulary sufficient to allow a student to perform basic survival tasks (asking for directions, buying a ticket for travel, checking into a hostel, ordering food) in Swahili, students will also be introduced to authentic Swahili texts, including plays, short stories, and newspapers. Students will have an opportunity to practice their acquired language skills by interacting with Swahili-speakers in the St. Louis region. Prerequisite: AFAS 103D. Credit 5 units.

A&S LA

AFAS 105S. History of Jazz

Same as Music 105.

A&S LA **FA** AH

AFAS 1096. Ragtime

Same as Music 109.

A&S LA **FA** AH

AFAS 111. Freshman Seminar: Race and Ethnicity on American Television

Same as Film 110.

A&S CD SD TH **FA** SSP

AFAS 1161. Freshman Seminar: The Physician, the Patient and the Community*Same as GeSt 116.*

A&S SS

AFAS 127. Popular Music in American Culture*Same as Music 1022.*

A&S LA SD FA AH

AFAS 1277. Musics of the World*Same as Music 1021.*

A&S CD TH FA AH

AFAS 132C. Freshman Seminar: Civil Rights*Same as History 130, AMCS 132.*

This course examines both the chronological and thematic frameworks of the American civil rights movement: the architecture of segregation; its evolution as a social movement; and aspect of the movement's legal strategies, student activism, and militancy. The course ends by considering the varied goals and outcomes, raising questions about the meaning of race and rights in contemporary America. Although based in scholarly readings, the course also uses films, music, memoirs, biographies, art, fiction, and theater as the vehicles through which activists recorded their own histories. Freshmen only. Credit 3 units.

A&S SD TH

AFAS 133C. Introductory Seminar: African American Poetry*Same as AMCS 133C, E Lit 133C.*

An introduction to the major poems, poets, and poetry movements in African-American literature. Authors include Terry, Wheatley, Horton, Baraka, Komunyakaa, and Ai. Additional readings look at the Harlem Renaissance, the Black Arts Movement, and principal points in-between. Freshmen only. Credit 3 units.

A&S TH FA Lit

AFAS 187. Afro-Hispanic Literature: an Introductory Course*Same as AMCS 187.*

In *The Black Atlantic: Modernity and Double Consciousness*, Paul Gilroy defines the "Black Atlantic" as "a culture that is not specifically African, American-Caribbean, or British but all of these at once." This cultural phenomenon will be explored by analyzing selected poems, novels, short stories, essays, and dramas of Spanish-speaking writers of African descent from Latin America, the Caribbean, and Africa. Utilizing the theoretical framework of Paul Gilroy, Stuart Hall, and Frantz Fanon, the texts will be analyzed considering their socio-historical, geographic, and racial implications and their respective literary movements beginning with the 1900s to the present. No prior knowledge of Spanish is required as this course will be taught in translation. Credit 3 units.

A&S LA FA Lit

AFAS 188. Freshman Seminar: Self & Identity in African-American Literature*Same as AMCS 188, E Lit 190.*

This course offers an introductory examination of 18th-century African-American identity formation and creation through an exploration of black captivity, conversion, and slave narratives. Among authors read are Briton Hammon, John Marrant, and Olaudah Equiano. Among films to be seen are: *Middle Passage*, *Unchained Memories: Readings from Slave Narratives*, and *Black Is, Black Ain't*. Freshmen only. Credit 3 units.

A&S SD TH FA Lit

AFAS 194. Conceptualizing Danger: Love and politics in the time of HIV/AIDS in Africa

Students will explore the HIV/AIDS epidemic in sub-Saharan Africa through a variety of analytic perspectives. Course materials include historical analysis, anthropological perspectives, development literature, African film and literature, and the

mass media. Students will conduct a semester-long research project using online newspapers from Africa. This course is limited to freshmen only. Credit 3 units.

A&S CD SS

AFAS 195C. Introduction to African-American Images in Film: A Freshman Seminar*Same as AMCS 195.*

This seminar for Freshmen will introduce students to an array of films depicting African Americans at different points in the history of filmmaking, as well as the relevance of these films to the advancement of civil rights in America, and, by extension, the world. Students will be introduced to elementary documentary film production in collaboration with Washington University library staff and hands-on utilization of the Henry Hampton Archive. The course provides a balanced introduction to various civil rights topics that are relevant to African Americans, their depiction in film, and knowledge of how documentary film production can be used to overcome past discrimination. Credit 3 units.

A&S CD TH

AFAS 196C. Freshman Seminar: Images of Africa*Same as History 196C.*

This course examines representations of Africa, African peoples, and African cultures during the 19th and 20th centuries. Drawing on a wide variety of source materials, including novels, photographs, and movies, we will explore both how Westerners have perceived Africa, and how Africans have perceived themselves. In particular, we will investigate notions of African identity, gender and the place of women, religion and the impact of Christianity, colonial society and its legacy, and the apartheid regime. Freshmen only. Credit 3 units.

A&S CD TH FA Lit

AFAS 2031. Caribbean Identities: An Interdisciplinary Approach

The primary goal of this course is to explore scholarly research and cultural materials dealing with Caribbean identity. We will survey, examine, and discuss issues that bear on Caribbean identities including topics in contemporary language use and policy, literature, music, and other forms of popular media (television, radio, newspapers, etc.) to illustrate how various islands in the Caribbean identify and distinguish themselves from others. The course will focus on theory-based and research-oriented information as well as critical essays and popular media that will provide you with knowledge to have an intelligent and informed discussion about issues dealing with Caribbean identities. Credit 3 units.

A&S SS

AFAS 203D. Intermediate Swahili III

Enhanced acquisition of language fundamentals acquired in first-year Swahili through performance, reading, and writing. Students gain skills performing role-plays such as asking for directions, booking a bus ticket, ordering food in a restaurant, etc. Students read more authentic Swahili texts including plays, short stories, newspapers, and poems. Prerequisite: AFAS 103DQ-104DQ or the equivalent. Credit 3 units.

A&S LA

AFAS 204D. Intermediate Swahili IV

Fourth-semester Swahili language course emphasizes the development of the ability to discuss a wide range of cultural and literary topics with native speakers of the language. These topics are introduced by reading authentic Swahili texts such as plays, novels, poems, and newspaper. Students enhance their writing skills and creativity in the language through group-writing projects. Prerequisites: Swahili 103D(Q), 104D(Q) and 203 D(Q). Credit 3 units.

A&S LA

AFAS 208B. African American Studies: An Introduction

Same as Pol Sci 208B, Lw St 208B, AMCS 208B. Lectures, readings, films, and discussions reflect a range of academic approaches to the study of African-American people. Course materials drawn from literature, history, archaeology, sociology, and the arts to illustrate the development of an African-American cultural tradition that is rooted in Africa but created in the Americas. Required for the major. Credit 3 units.

A&S SD TH FA SSP

AFAS 209B. African Studies: An Introduction

Same as AFAS 209B. This course will introduce students to a variety of approaches to the study of Africa by considering the ways that scholars have understood the African experience. It will expose students to the history, politics, literary, and artistic creativity of the continent. Emphasis will be placed on the diversity of African societies, both historically and in the present, and explore Africa's place in the wider world. Required for the major. Credit 3 units.

A&S CD TH FA SSP

AFAS 210. The Linguistic Legacy of the African Slave Trade in Interdisciplinary Perspective*Same as Educ 210, Ling 2101, AMCS 2101.*

This course explores the linguistic consequences of the African slave trade, and in so doing introduces students to basic concepts in linguistic science that are relevant to human language development and controversial educational theories that are based on race. Anthropological, linguistic, and psychological dimensions of African-American culture are embedded within complementary evaluations of educational controversies surrounding the teaching of (standard) English to American slave descendants, including the Ebonics controversy and its relevance to larger questions of social efficacy and the affirmative action debate that has consumed the nation. Students will work individually or in groups to produce a major intellectual artifact (e.g., a term paper, a scholarly Web page, or a project pertaining to the linguistic plight of citizens within this African Diaspora). Students will be introduced to foundational African American Studies in anthropology, education, English, linguistics, and psychology. Credit 3 units.

A&S SD SS

AFAS 2151. St. Louis African-American History*Same as STA 2151, AFAS 2151, AMCS 2151, History 276.*

A look at the past 100 and more years of the black experience in St. Louis. Primary and secondary source materials are used. Individual presentations made by many St. Louis notables. Requires 1/2 day Saturday tour. Credit 3 units.

A&S SD TH FA SSP

AFAS 2411. Methods and Reasoning in the Social Sciences II*Same as STA 330.*

A&S SS FA SSP

AFAS 301. A History of African-American Theater*Same as Drama 3011, AMCS 3010, AFAS 3011, Drama 301, MLA 401.*

A survey of African-American theater from post-Civil War "coon" shows and reviews to movements for a national black theatre, such as Krigwa, Lafayette and Lincoln, and the Black Arts Movement. Early black theatre and minstrels; black theatre movement and other ethnic theatre movements in America. Critical readings of such plays as Amiri Baraka's *Dutchman*, Lorraine Hansberry's *A Raisin in the Sun*, Langston Hughes and Zora Neale Hurston's *Mulebone*. Also works by

August Wilson, Ed Bullins, Charles Fuller, Georgia Douglas Johnson. Credit 3 units.

A&S SD TH **FA** AH

AFAS 3011. Honors Seminar for Sophomores I: Tutorial in History

AFAS 302. Black Theater Workshop III

Same as Drama 368.

A&S LA SD

AFAS 3021. Honors Course for Sophomores II: Tutorial in History — Emancipation

Same as History 301.

A&S TH **FA** SSP

AFAS 3057. Visual Griots: Exploring Colonial and Post-Colonial Africa through African Cinema

Same as IAS 3057, History 3057.

Through African cinema, we have the unique experience of studying images and representations of contemporary issues through the eyes of African filmmakers. Filmmakers such as Sembene Ousmane, Djibril Diop Mambety, Flores Gomes, and Jean-Marie Teno intrinsically write social history — or the everyday experiences of ordinary people — as they affirm the complexity and humanity of African life. The films in the class will ground class discussions around colonial and post-colonial experiences in African history. Through screenings and readings, the course will explore important themes in African history such as colonialism and its legacy, religious expression, nationalism, gender, the role of the intellectual in post-colonial society, censorship, and government corruption. On another level, we will examine the politics of historical and cultural production. Credit 3 units.

A&S CD TH **FA** AH

AFAS 3058. Literary Voices of the Hispanic Caribbean and Latin America

This course aims to analyze contemporary Afro-Hispanic novels from 1960 to the present and to discuss their place within the Hispanic literary canon. Specifically, we will look at how these texts relate to other Spanish-American literary phenomena such as the Boom, Magical Realism, the Post-Boom, and/or the new Latin-American historical novel for example. Under the theoretical framework of post-colonialism, these texts will be analyzed considering their socio-historical, geographic, and racial implications in the context of the respective literary movements from the 1960s to the present. Credit 3 units.

A&S TH **FA** Lit

AFAS 3061. Literacy Education in the Contexts of Human Rights and Social Justice

Same as Educ 306.

A&S SS

AFAS 306B. Africa: Peoples and Cultures

Same as Anthro 306B.

A&S CD SS **FA** SSP

AFAS 313. The AIDS Epidemic: Inequalities, Ethnography, and Ethics

Same as Anthro 313A.

A&S SS

AFAS 3161. African-American Politics

Same as Pol Sci 316B.

A&S SS

AFAS 316B. African Politics: Pathways to Resistance and Accommodation

AFAS 319C. The Pre-History of Africa

Same as Anthro 318C.

A&S CD SS **FA** SSP

AFAS 321C. African Civilization to 1800

Same as IAS 394C, History 394C.

Beginning with an introduction to the methodological and theoretical approaches to African his-

tory, this course surveys African civilization and culture from the Neolithic age until 1800 A.D. Topics include African geography and environmental history, migration and cross-cultural exchange, the development of Swahili culture, the Western Sudanese states, the transatlantic slave trade and the historical roots of apartheid. Credit 3 units.

A&S CD TH **FA** SSP

AFAS 322C. African Civilization: 1800 to the Present

Same as History 395C, IAS 395C, JNE 322C.

Beginning with social and economic changes in 19th-century Africa, this course is an in-depth investigation of the intellectual and material culture of colonialism. It is also concerned with the survival of pre-colonial values and institutions, and examines the process of African resistance and adaptation to social change. The survey concludes with the consequences of decolonization and an exploration of the roots of the major problems facing modern Africa. Credit 3 units.

A&S CD TH **FA** SSP

AFAS 323. Research Materials for African and African American Studies

Same as AFAS 323.

The goal of this course is to help students develop effective information handling skills for conducting library research in the area of African and African American Studies. Class assignments and projects focus on identifying and evaluating primary and secondary resources using basic library resources, online catalogs from various institutions, journal article databases, and internet resources. The format of the class will consist of lecture/discussion, demonstrations, and hands-on practice in Olin Library. Credit 3 units.

A&S TH

AFAS 3241. Contemporary Contexts of Language, Literature, and Culture in the African Diaspora

Same as Ling 3241, Anthro 3242.

The primary goal of this course is to explore research and popular materials dealing with culture in the African Diaspora. We will survey, examine, and discuss scholarly materials that bear on African Diasporic identities, contemporary socio-cultural, ecological, and political contexts of the African Diaspora, and the implications of those contexts for the study of language, literature, and their effect on popular culture. The course will focus on theory-based and research-oriented information as well as critical essays and popular media that will provide you with knowledge to have an intelligent and informed discussion about life and culture in the African Diaspora. Credit 3 units.

AFAS 3252. History and (Auto)biography from Modern South Africa

Same as History 3252.

A&S CD TH

AFAS 3254. African Americans and Children's Literature

Same as AMCS 3254, E Lit 3254.

This course explores two distinct themes: how African-descended people have been depicted in American and British children's literature and how African Americans have established a tradition in writing for children and young adults. It will also examine two related questions: How has African-American childhood been constructed in children's literature and how have African-American writers constructed childhood in children's literature? We will look at such classic white writers for children as Helen Bannerman, Annie Fellows Johnston, and Mark Twain as well as efforts by blacks like the *Brownies Book*, published by the NAACP, and children's works by black writers including Langston Hughes, Ann Petry, Shirley Graham Du Bois, Arna Bontemps, Virginia Hamilton, Walter

Dean Myers, Mildred Taylor, Floyd and Patricia McKissack, Julius Lester, Rosa Guy, Sharon Bell Matisch, bell hooks, and others. Credit 3 units.

A&S TH **FA** Lit

AFAS 327B. African Politics

Same as Pol Sci 327B.

A&S SS **FA** SSP

AFAS 3282. Sexuality in Africa

Same as Anthro 3282, WGS 3282, AS 3282.

An examination of various themes of African sexuality, including courtship, marriage, circumcision, STDs and AIDS, polygamy, homosexuality, child marriages, and the status of women. Course materials include ethnographic and historical material. African novels and films, and U.S. mass media productions. Using sexuality as a window of analysis, students are exposed to a broad range of social science perspectives such as functionalist, historical, feminist, social constructionist, Marxist, and postmodern. Credit 3 units.

A&S CD SS **FA** SSP

AFAS 3507. Literature of the Black Diaspora: 1900-present

This course aims to analyze contemporary Afro-Hispanic novels from 1960 to the present and to discuss their place within the Hispanic literary canon. These works will be analyzed considering the factors of race, nation, and ethnicity. Specifically, we will look at how these texts relate to other Spanish-American literary phenomena such as the Boom, Magical Realism, the Post-Boom, and/or the new Latin-American historical novel for example. Under the theoretical framework of post-colonialism, these texts will be analyzed considering their socio-historical, geographic, and racial implications in the context of the respective literary movements from the 1960s to the present. This is an upper-level course for majors and non-majors that is reading- and writing-intensive. In addition, students will be required to produce an 8- to 10-page research paper at the end of the semester on an Afro-Hispanic novel of their choice. Credit 3 units.

A&S TH WI **FA** Lit

AFAS 3542. The Quest for Racial Reconciliation

Same as IAS 3543, AMCS 3542.

This course is based within African and African American Studies, and it explores the quest for racial reconciliation, with emphasis equally divided between the United States and racial strife in other parts of the world. Although racial considerations are inherent to central themes within this course, we explore various sources of linguistic, cultural, social, political, racial, and ethnic foundations of strife at different points in history, and in different regions of the world. Particular attention will be devoted to nonpartisan strategies to advance racial harmony within the United States, and other regions of the world that are of personal interest to students. Credit 3 units.

A&S TH **FA** SSP

AFAS 3582. Race, Class, and Writing in the United States and the Caribbean, 1900–1950

Same as E Lit 3582.

A&S SD TH

AFAS 361. Culture and Environment

Same as Anthro 361.

A&S SS **FA** SSP

AFAS 3651. Black Women Writers

Same as AMCS 3651, WGS 3560, E Lit 3881.

When someone says, black woman writer, you may well think of Nobel Prize-winner Toni Morrison. But not long ago, to be a black woman writer meant to be considered an aberration. When Thomas Jefferson wrote that Phillis Wheatley's poems were "beneath the dignity of criticism," he could hardly have imagined entire Modern Language Association sessions built around her verse,

but such is now the case. In this class, we survey the range of Anglophone African-American women authors. Writers likely to be covered include Phillis Wheatley, Harriet Wilson, Nella Larsen, Lorraine Hansberry, Octavia Butler, and Rita Dove, among others. Be prepared to read, explore, discuss, and debate the specific impact of race and gender on American literature. Credit 3 units.

A&S SD TH FA Lit

AFAS 3752. Topics in Women's History: African-American Women

Same as History 3754, AMCS 3750, AFAS 3752. An analysis of how African-American women have defined their roles in American life and within the black community: attaining literacy, the push for suffrage, anti-slavery and colonization efforts, class stratification and the Cult of Domesticity, the Civil War and reconstruction, migration and the impact of urbanization, religious attitudes, political activism and elective office, sexuality and the myth of the Black Matriarch. Prerequisites: at least one course in American history, women's history or African-American history and permission of the instructor. Credit 3 units.

A&S TH FA SSP

AFAS 3838. African-American Poetry from 1950–Present

Same as AMCS 3838, E Lit 3831. Beginning with the year in which Gwendolyn Brooks became the first African American to win the Pulitzer Prize, we will examine the tradition of African-American poetry and the ways in which that tradition is constantly revising itself and being revised from the outside. We will focus in particular on the pressures of expectation — in terms of such identity markers as race, gender, and sexuality — and how those pressures uniquely and increasingly affect African-American poetry today. Credit 3 units.

A&S TH FA Lit

AFAS 387C. African-American Literature: Early Writers to the Harlem Renaissance

Same as E Lit 387C, AMCS 387C. This course will introduce you to major authors and themes in African-American literature from the late 18th century to the early 20th century. In spite of extraordinarily oppressive conditions, including slavery, bans against black literacy, Jim Crow segregation, and the threat of lynching, people of African descent expressed their unique experiences in whatever ways they could. The written word was one important mode through which African Americans voiced concerns about, and sought to change, the injustices of their world. Through slave narratives, novels, and autobiographies, we will study how African Americans created a liberational public presence and simultaneously laid the foundations for an important literary tradition. Credit 3 units.

A&S SD TH FA Lit

AFAS 388C. African-American Literature: African-American Writers Since the Harlem Renaissance

Same as AMCS 388C, E Lit 388C. This course will introduce you to major authors, movements, and themes in African-American literature from the 1920s to the 1970s. Exploring several crucial periods in African-American literary history, including the Harlem Renaissance, the Black Arts Movement, and the Black Feminist Movement, we will examine how black writers of the 20th century conceptualized the political and cultural dimensions of the African-American community. To investigate the formal diversity of the black literary tradition, we will read examples of the novel, autobiography, drama, poetry, and the essay. Authors covered will include Langston Hughes, Gwendolyn Brooks, and James Baldwin. Credit 3 units.

A&S SD TH FA Lit

AFAS 390C. Upon These Shores: African-American History, 1500–1865

Same as History 387C.

A&S SD TH FA SSP

AFAS 391C. For Freedom's Sake: African-American History Since Emancipation

Same as History 388C.

A&S SD TH FA SSP

AFAS 400. Independent Study

Permission of the Director of the African and African American Studies Program and an African American Studies instructor PRIOR TO registering. Credit variable, maximum 6 units.

AFAS 401. Senior Seminar

This capstone seminar is required for students who are majoring in African and African American Studies. Credit 3 units.

A&S TH

AFAS 403. Readings in Swahili Literature

This course aims at helping students gain skills in reading and appreciating selected readings in Swahili literature. Although the course will primarily focus on plays, novels, poetry, students will also be introduced to Swahili songs, comic books, and other forms of popular literature in an attempt to understand the growth and development of contemporary Swahili literature. Prerequisites: Permission of instructor and successful completion of AFAS 103D, 104D, 203D, 204D or equivalent experience. Credit 3 units.

A&S TH FA Lit

AFAS 4031. Advanced Readings in Swahili Literature

To be designed with instructor. Permission of instructor required. Credit 3 units.

A&S TH FA Lit

AFAS 409. Gender, Sexuality, and Change in Africa

Same as Anthro 4091, WGS 409, IAS 4090.

This course considers histories and social constructions of gender and sexuality in sub-Saharan Africa during the colonial and contemporary periods. We will examine gender and sexuality both as sets of identities and practices and as part of wider questions of work, domesticity, social control, resistance, and meaning. Course materials include ethnographic and historical materials and African novels and films. Prerequisite: Graduate students or undergraduates with previous AFAS or upper-level anthropology course. Credit 3 units.

A&S SD SS WI FA SSP

AFAS 4134. The AIDS Epidemic: Inequalities, Ethnography, and Ethics

Same as Anthro 4134.

A&S SS

AFAS 417. Topics in African History: Middle Passages: African Americans and South Africa

Same as AMCS 417, IA 4017, IAS 417, History 417. This upper-division seminar explores the fascinating transnational relationship between African Americans and black South Africans during the 20th century. These two populations became intimately familiar with each other as African-American missionaries, sailors, musicians, educators and adventurers regularly entered South Africa while black South African students, religious personnel, political figures, writers, and entertainers found their way to America. This course will detail why these two populations gravitated toward each other, how they assisted each other in their respective struggles against racial segregation and apartheid and how these shared histories influence their relationship today. Readings for this course will draw from key books, articles, and primary documents within this exciting new field of intellectual inquiry. Credit 3 units.

A&S CD TH

AFAS 419. History of Pan-Africanism: The Birth and Evolution of a Revolutionary Idea

Same as History 419B, IAS 419, AFAS 419. This upper-level undergraduate seminar surveys the history of Pan-Africanism, from its roots in the transatlantic slave trade to present times. It explains why Pan-Africanism was/is a primary vehicle that black peoples in Africa and the African Diaspora have utilized Pan-Africanism to achieve African political and socioeconomic self-determination and to forge bonds of global solidarity with each other to combat colonialism, racism, and economic, sociocultural, religious, and educational marginalization in their respective local societies. Course limit: 15 (10 seats are reserved for AFAS majors/minors) Credit 3 units.

A&S TH

AFAS 4262. Politics of the Civil Rights Movement

Same as Pol Sci 426.

A&S SD SS FA SSP

AFAS 429. Texts and Contexts of the Harlem Renaissance

Same as E Lit 4244.

A&S TH FA Lit

AFAS 433. Culture, Language, and the Education of Black Students

Same as Educ 4315, URST 4315.

A&S CD SS FA SSP

AFAS 434B. Seminar in Black Social Sciences

Same as STA 434B, Educ 434B, AMCS 434, AFAS 434B, Educ 4344, Educ 4344.

This seminar applies a deep reading to social science texts that examine the construction and experiences of black people in the United States from the point of view of black scholars. Readings include theoretical and empirical work. The seminar focuses on the influence of the disciplines of psychology, sociology, and anthropology on the policy and social practices that characterize dominant North American institutions. Advanced class level strongly advised. Credit 3 units.

A&S SD SS FA SSP

AFAS 435. Slavery and American Literary Imagination

Same as E Lit 4232.

A&S TH FA Lit

AFAS 448. Race Politics in 19th- and 20th-Century America

Same as History 4481, Pol Sci 4483, AMCS 4483. This course will explore the efforts of black Americans to use the political processes to claim civil rights and economic improvements in the 19th and 20th centuries. It will track the aims, ideals, and organizing strategies of African-American leaders and of grass-roots organizers. Readings and research will highlight the ways African Americans debated agendas, fought over strategies, and worked to mobilize voters. We will study the ways various groups of people — in rural and urban American — argued over priorities, set agendas for their communities, produced a political language, came together with neighbors to fight for civil rights and economic necessities, and, in short, established a dynamic and conflicted political culture. Credit 3 units.

A&S SS FA SSP

AFAS 4483. Race and Politics

Same as Pol Sci 4241.

A&S SS FA SSP

AFAS 4511. Race, Ethnicity, and Culture: Qualitative Inquiries into Urban Education I

Same as AMCS 4511, AFAS 4511, STA 4511, Educ 4511, AMCS 452, STA 4511, Educ 4511, URST 4511.

Drawing on traditional and recent advances in the field of qualitative studies, this course is the first in a series to examine ethnographic research at the

interlocking domains of race, ethnicity, class, gender, and culture. The emphasis in this course is on how these concepts are constructed in urban educational institutions. The course includes a field component that involves local elementary and/or middle schools. Credit 3 units.

A&S SD SS

AFAS 4512. Race, Ethnicity and Culture: Qualitative Inquiries into Urban Education II

Same as Educ 4512.

A&S SS WI **FA** SSP

AFAS 4561. Topics in American Politics: Urban Politics

Same as Pol Sci 4561.

A&S SS

AFAS 4606. American Culture: Tradition, Method, and Vision

Same as AMCS 475.

A&S TH

AFAS 4608. Education of Black Children and Youth in the United States

Same as Educ 4608.

A&S SD TH WI **FA** SSP

AFAS 461B. Construction and Experience of Black Adolescence

Same as Educ 461B, STA 461B, AMCS 461B, Educ 4611, AFAS 461B, AMCS 461, URST 461B.

This course examines the construct of black adolescence from the general perspectives of anthropology, sociology, and psychology. It begins by studying the construct of black adolescence as an "invention" of the social and behavioral sciences. The course then draws upon narrative data, autobiography, literature and multimedia sources authored by black youth to recast black adolescence as a complex social, psychological, cultural and political phenomenon. This course focuses on the meaning-making experiences of urban-dwelling black adolescents and highlights these relations within the contexts of class, gender, sexuality, and education. Credit 3 units.

A&S SS **FA** SSP

AFAS 477. African Prehistory

Same as Anthro 477.

A&S SS **FA** SSP

AFAS 4892. Advanced Seminar in History:

Oral History

Same as History 4892.

A&S TH **FA** SSP

AFAS 4893. Antislavery: The Legal Assault on Slavery in St. Louis

Same as History 4987.

A&S SD TH

AFAS 4952. Advanced Seminar in History:

Civil Rights Movement

Same as History 4951.

A&S SD TH **FA** SSP

AFAS 498. Field Work in African American Studies

A field work project carried out under the direction of an instructor in the African and African American Studies program. Prerequisites: Permission of instructor and the Director of African and African American Studies prior to enrollment. See program office for forms. Credit variable, maximum 6 units.

A&S SS

AFAS 499. Independent Work for Senior

Honors: Research

Prerequisite: Permission of Director and appropriate grade point average. Application forms available in Program office. Credit 3 units.

AFAS 499I. Independent Work for Senior

Honors: Thesis

Prerequisite: Satisfactory standing as a candidate for senior honors and permission of the Director of the African and African American Studies Program. Credit 3 units.

American Culture Studies

Director

Wayne Fields (English)

Lynne Cooper Harvey
Distinguished Professor in English
Ph.D., University of Chicago

Assistant Director

Peter Kastor (History)

Ph.D., University of Virginia

American Culture Studies is a multidisciplinary program within Arts & Sciences. We are committed to learning that is at once centered in the discipline of a first major and also contextualized in the broader range of study provided by the American Culture Studies second major. Ours is also a model that emphasizes directed study and collaborative projects, providing our students with both the experience of creating knowledge through original research and of learning to take on issues in a larger community of scholars. The program emerged from the realization among faculty that their scholarship and their teaching benefited from an extended conversation with people in different disciplines. Consequently, we seek a broad approach incorporating the humanities, social sciences, and the natural sciences.

Washington University's commitment to American Culture Studies grows from our awareness of two fundamental questions about American life. The first of these is: What does it mean to be American? The second follows from the first and is both a separate question and a means for approaching the previous one: How might we best study America?

Recognizing that America is a culture of cultures, that it is both one and many, our approach is inclusive, emphasizing the enormous diversity in the American people and their experiences. As students pursue their particular discipline and interests, they are encouraged to link those studies to other academic fields and a wider view of the United States and its people. To this end the program coordinates American offerings across the curriculum and sponsors multidisciplinary courses, often team taught, that explore theoretical aspects of cultural studies as well as particular issues and events.

American Culture Studies is available only as a second major or minor. Students are encouraged to consider one of our concentrations as a way of examining American contexts for the subjects investigated in their first majors. Advisers will work with students to develop specific fields of study.

Major (27 units)

12 units in general American subject courses

- 6 units at the 300 level or above
- Each course should be cross-listed with AMCS but must be home-based in a different department (i.e., Political Science, English, History, Anthropology, African and African American Studies, Education, Music, Film & Media Studies, etc.)

- Only 3 units of the 12 may count toward your first major
- 6 units of multidisciplinary course work
- Courses home-based in AMCS
 - Courses team-taught by faculty in different disciplines
 - Courses approved by AMCS that meet our multidisciplinary standards
- 6 units of directed study, including:
- Independent Study
 - Internships
 - Directed Research
 - Senior Thesis
- 3 units: AMCS 475, American Culture: Traditions, Methods, Visions
- Our capstone seminar. Students are encouraged to take this course during the junior or senior years

Minor (15 units)

- 12 units in general American subject courses
- 6 units at the 300 level or above
 - Each course should be cross-listed with AMCS but must be home-based in a different department (i.e., Political Science, English, History, Anthropology, African and African-American Studies, Education, Music, Film & Media Studies, etc.)
 - Only 3 units of the 12 may count toward your first major
- 3 units of multidisciplinary course work
- Courses home-based in AMCS (AMCS 475, American Culture: Traditions, Methods, Visions is highly recommended)
 - Courses team-taught by faculty in different disciplines
 - Courses approved by AMCS that meet our multidisciplinary standards

Concentrations: Concentrations are designed to provide specific pathways for research and study within the major. Concentrations are also designed to dovetail with related subjects in other majors, offering broad cultural context for issues that students study within a specific discipline. If you are interested in pursuing one of these concentrations, please contact the adviser listed or the program office. Students often pursue concentrations of their own design.

Civil Rights: In collaboration with The Henry Hampton Collection in the Film and Media Archives. Adviser: Leslie Brown (History, African and African-American Studies)

Ethnic Studies and Immigration: In collaboration with International and Area Studies. Adviser: Sunita Parikh (Political Science)

Law, Society, and Culture: In collaboration with Legal Studies. Adviser: David T. Konig (History, Legal Studies)

Urban and Neighborhood Studies: In collaboration with the Center on Urban Research and Policy. Adviser: Carol Camp Yeakey (Education, American Culture Studies, International and Area Studies)

Visual Arts and Popular Culture. Adviser: Angela Miller (Art History)

Undergraduate Courses

AMCS 100B. Introduction to Women's Studies
Same as WGS 100B.
A&S SD TH FA SSP

AMCS 101B. American Politics

Same as Pol Sci 101B.
A&S SS FA SSP

AMCS 022. Popular Music in American Culture

Same as Music 1022.
A&S LA SD FA AH

AMCS 102B. Social Problems and Social Issues

Same as STA 120B.
A&S SS FA SSP

AMCS 103B. Introduction to Political

Economy: Microeconomics
Same as Econ 103B.
A&S QA SS FA SSP

AMCS 105. History of Jazz

Same as Music 105.
A&S LA FA AH

AMCS 106. Freshman Seminar: St. Louis:

Engaging the City
Same as STA 106.
A&S SS

AMCS 109. Ragtime

Same as Music 109.
A&S LA FA AH

AMCS 111. Freshman Seminar: Race and Ethnicity on American Television

Same as Film 110.
A&S CD SD TH FA SSP

AMCS 118A. Geology of National Parks

Same as EPSc 118A.
A&S NS FA NSM

AMCS 127. Popular Music in American Culture

Same as Music 1022.
A&S LA SD FA AH

AMCS 130. Freshman Seminar: Cahokia: Perspectives on a Mississippian Ritual Center

Same as Anthro 130.
A&S SS FA SSP

AMCS 132. Freshman Seminar: Civil Rights

Same as AFAS 132C.
A&S SD TH

AMCS 133C. Introductory Seminar: African-American Poetry

Same as AFAS 133C.
A&S TH FA Lit

AMCS 159. Freshman Seminar: Mannequins, Modernity, and Architecture

Same as History 163.
A&S TH FA SSP

AMCS 187. Afro-Hispanic Literature: An Introductory Course

Same as AFAS 187.
A&S LA FA Lit

AMCS 188. Self and Identity in African-American Literature

Same as AFAS 188.
A&S SD TH FA Lit

AMCS 195. Introduction to African-American Images in Film: A Freshman Seminar

Same as AFAS 195C.
A&S CD TH

AMCS 200. Mentorship in American Culture Studies

Credit 2 units.
A&S TH

AMCS 202. The Immigrant Experience

Same as Pol Sci 226.
This course explores the history and politics of immigrant groups in the 19th- and 20th-century United States. Topics include legislation, patterns

of migration, comparisons of different waves of immigration, and changing social attitudes. This course is a core requirement for the ethnic studies concentration in American Culture Studies. Credit 3 units.

A&S CD SS FA SSP

AMCS 2021. Crossing Borders I

Same as IAS 202.
A&S CD SS

AMCS 2030. Gay and Lesbian Theory

Same as WGS 203.
A&S SD TH FA SSP

AMCS 2031. Crossing Borders II

Same as IAS 203.
A&S CD TH

AMCS 2051. History of American Radicalism from the Abolitionists to the Battle of Seattle

Same as History 2051.
A&S TH FA SSP

AMCS 206. "Reading" Culture: Studying American Culture

The term "culture" is a loose, baggy monster that includes every aspect of human existence and all of them happening at once. We read books and listen to music at the same time as we worry about our personal budget, decide whom we will vote for, and grow into ethical and spiritual beings. Any effort to engage so large a topic requires experience in a variety of methodological approaches and critical vocabularies. Students who have participated in AMCS 101 should not enroll for this course since they will have already received similar training. Credit 3 units.

A&S TH

AMCS 207. Freshman Seminar: The Chinese American Experience

Same as ANELL 208.
A&S SD TH

AMCS 208B. African-American Studies: An Introduction

Same as AFAS 208B.
A&S SD TH FA SSP

AMCS 209. America from the Civil War

Same as History 210.
A&S TH FA SSP

AMCS 210. Freshman Seminar: Gender and Citizenship

Same as WGS 210.
A&S SD TH FA SSP

AMCS 2101. The Linguistic Legacy of the African Slave Trade in Interdisciplinary Perspective

Same as AFAS 210.
A&S SD SS

AMCS 214C. Introduction to Women's Texts

Same as WGS 214C.
A&S SD TH FA Lit

AMCS 2151. Blacks in St. Louis Since the Civil War

Same as AFAS 2151.
A&S SD TH FA SSP

AMCS 2152. The Theory and Practice of Justice: The American Historical Experience

Same as History 2152.
A&S SD TH FA SSP

AMCS 2153. Introduction to Literary Study: Modern Texts, Contexts, and Critical Methods

SECTION 03 ONLY
Same as E Lit 215.
A&S TH

AMCS 215C. Topics in American History

Same as History 215C.
A&S SD TH FA SSP

AMCS 2162. Modern Texts, Contexts, and Critical Methods. SECTION 03 ONLY**AMCS 219. History of Modern Social Theory**
*Same as STA 220.***A&S SS****AMCS 220. Nineteenth-Century American-Indian Literature: Representations and Self-Representation**

This course will examine the ways that 19th century Euro-American authors depicted American Indians and the ways that American Indians responded to these literary images of Native identity, cultures, and beliefs. Students will first analyze the religious, political, and gender assumptions and aesthetic values shaping 19th-century representations of American Indians including those depictions found in Euro-American captivity narratives, Indian plays, frontier romances, sentimental novels, and reform prose. Students will then explore the cosmology, cultural values, and aesthetic sensibilities that inform Native authors' self-representation through personal narratives, speeches, poetry, short stories, novels, and journalism. The goals for this course will be to explore the historical context of American-Indian representation, to identify Native authors' resistance to and revision of their depictions in American literature, and the continuing significance of 19th-century American Indian literature to contemporary Native cultures. Readings may include James Fenimore Cooper's *The Last of the Mohicans*; Catharine Sedgewick's *Hope Leslie*; Margaret Fuller's *Summer on the Lakes*; Mark Twain's *Tom Sawyer*; Samson Occom's (Mohegan) *A Short Narrative of My Life*; Jane Johnston Schoolcraft's (Ojibwe) *Selected Poems and Fiction*; Sarah Winemucca's (Paiute) *Life Among the Putes: Their Wrongs and Claims*; S. Alice Callahan's (Creek) *Wynema, A Child of the Forest*; Zitkala-Sa's (Dakota) *Impressions of an Indian Childhood*; Francis LaFlesche's (Omaha) *The Middle Five: Indian School Boys of the Omaha Tribe*; and Charles Alexander Eastman's (Sioux) *Indian Boyhood*. Credit 3 units.

A&S TH FA Lit SSP**AMCS 221. Topics in Theater: Introduction to the American Musical Theater***Same as Drama 221.***A&S LA FA AH****AMCS 222. Sophomore Research Project in American Culture Studies**

This course provides sophomores with an introductory experience in primary research. Credit variable, maximum 3 units.

A&S TH**AMCS 224. Introduction to Memory Studies**

AMCS 225. Topics in American Culture Studies
Topics courses in American Culture Studies are offered routinely and examine aspects of our culture from various disciplines and often through multidisciplinary approaches. Courses previously offered include: 19th-Century American-Indian Literature; Hurricane Katrina: A Case Study in Disaster and Relief; The History of Popular Culture in the United States; Mark Twain: Humor and Politics in 19th Century; and American Presidential Rhetoric. Courses are sometimes team-taught or combine community service with learning. Faculty includes WU professors, visiting scholars, community leaders, or advanced graduate fellows in American Culture Studies. Credit 3 units.

A&S TH FA SSP**AMCS 233. Biomedical Ethics***Same as Phil 233F.***A&S TH FA SSP****AMCS 235. Introduction to Environmental Ethics***Same as Phil 235F.***A&S TH FA SSP****AMCS 240. Primal Religions of the Americas**
*Same as Re St 240.***A&S TH****AMCS 245. Images of Disability: Portrayal in Film and Literature***Same as GeSt 249.***AMCS 246. Introduction to Film Studies***Same as Film 220.***A&S LA****AMCS 247. FOCUS: Presidential Rhetoric***Same as Focus 247.***A&S TH****AMCS 248. Latino/a Experiences in the United States**

Identity is a term that begins to give humans a sense of understanding who we are. In terms of the Latino/a diaspora in the United States, issues of ethnicity, gender, nation, class, sexuality and race are key theoretical categories that aid us in theoretical and practical understandings of identity. In this course we will analyze and discuss the concept of order to understand the constructions and varied meanings of the term. There will be a special emphasis placed on anthropological, historical, and social science literatures of the Caribbean, Latin America, and the United States as they pertain to deeper understandings of identity. Prerequisite: Membership in the Annika Rodriguez Program. Credit 2 units.

A&S SS FA SSP**AMCS 2501. FOCUS: The Mississippi River Cities: Studies of Peril and Possibilities***Same as Focus 2501.***A&S SS****AMCS 257. From Champagne to Champlain: French Culture in North America***Same as French 257.***A&S TH FA SSP****AMCS 260. Topics in Health and Community***Same as Anthro 260.***A&S SS FA SSP****AMCS 3003. Critical Issues in American Environmental History***Same as History 3003.***A&S TH****AMCS 3004. Technology in American History**
*Same as History 3004.***A&S TH****AMCS 3010. History of African-American Theater***Same as AFAS 301.***A&S SD TH FA AH****AMCS 3011. Honors Course for Sophomores I: A Tutorial in History**
*Same as History 301.***A&S TH FA SSP****AMCS 301B. Individual and Community**
*Same as STA 301B.***A&S SD SS FA SSP****AMCS 301C. The American School**
*Same as Educ 301C.***A&S SD TH FA SSP****AMCS 3020. Native American Musical Traditions of the Western United States***Same as Music 3022.***A&S CD, TH FA SSP****AMCS 3021. Urban Environmental History**
*Same as History 302.***A&S TH FA SSP****AMCS 3022. Native American Musical Traditions of the Western United States***Same as Music 3022.***A&S CD TH FA SSP****AMCS 3023. Jazz in American Culture**
*Same as Music 3023.***A&S SD TH WI FA AH****AMCS 3031. Gender and Education**
*Same as Educ 303.***A&S SD SS FA SSP****AMCS 3040. Documents and Documentary in Photography and Film***Same as Art-Arch 3040.***A&S TH FA AH****AMCS 3051. Collective and Individual Memory**
*Same as STA 3051.***A&S SS FA SSP****AMCS 3061. Literacy Education in the Context of Human Rights and Global Justice***Same as Educ 306.***A&S SS****AMCS 3066. American City in the 19th and 20th Centuries***Same as History 3066.***A&S SD TH FA SSP****AMCS 308. Cracks in the Republic: Discontent, Dissent, and Protest in America During the 1960s and 1970s***Same as History 3072.***A&S SD TH FA SSP****AMCS 308C. History of Law in American Life I: English and Colonial Foundations to 1776***Same as History 307C.***A&S TH FA SSP****AMCS 3091. Poverty and Social Reform**
*Same as History 3091.***A&S SD TH FA SSP****AMCS 3093. Anthropology of Modern Latin America***Same as Anthro 3093.***A&S SS****AMCS 310. Topics in Asian-American Literature: Identity and Self-Image***Same as E Lit 308.***A&S SD TH FA Lit****AMCS 3100. Ancient Civilizations of the New World***Same as Anthro 310C.***A&S CD TH FA AH****AMCS 3103. Topics in Politics: Constitutional Politics in the United States****AMCS 311. Women's Health in America**
*Same as WGS 310.***A&S SS FA SSP****AMCS 3110. Documentary Production**
*Same as Film 311.***A&S LA****AMCS 3112. Topics in English and American Literature: Female Authorship: A Transatlantic Perspective***Same as E Lit 312.***A&S TH FA Lit****AMCS 3113. Topics in English and American Literature: Food and American Literature***Same as E Lit 313.***A&S TH FA Lit****AMCS 3122. Showmen of the Page: American Literary Celebrity***Same as E Lit 312.***A&S TH FA Lit**

- AMCS 313. Topics in English and American Literature: Monsters, Mushroom Clouds, and Cold War: '50s Literature and Culture**
- AMCS 3131. Topics in English and American Literature: Food in American Literature**
- AMCS 314. First Americans: Prehistory of North America**
Same as Anthro 314B.
A&S CD SS FA SSP
- AMCS 3142. Native Americans at Westward Expansion**
Same as Anthro 3461.
A&S CD SS FA SSP
- AMCS 315. Democracy, the Market, and the Individual**
Same as STA 302.
A&S SS FA SSP
- AMCS 3150. Issues of Male Identity in American Fiction of the 1950s and '60s**
Same as E Lit 315.
A&S TH FA Lit
- AMCS 3153. Revolution and Early Republic**
- AMCS 3154. Archaeology of the African Diaspora**
Same as Anthro 3153.
- AMCS 3155. The Literature of the American Revolution—Writing Intensive**
Same as E Lit 315W.
A&S TH WI
- AMCS 3156. Visual Music**
Same as Film 315.
- AMCS 3163. Contemporary Women's Health**
Same as WGS 316.
A&S SD SS FA SSP
- AMCS 316B. African-American Politics**
Same as Pol Sci 316B.
A&S SS
- AMCS 3170. Economics of Sports**
Same as Econ 3171.
A&S SS
- AMCS 3171. Modern and Post-Modern Trends in Public Performance**
Same as Music 317.
A&S TH
- AMCS 318. Development of the North American Landscape**
Same as EPSc 318.
A&S NS FA NSM
- AMCS 3191. Contemporary American Women Poets**
Same as E Lit 3191.
A&S TH FA Lit
- AMCS 3211. Topics in 19th-Century American Writers:**
Same as E Lit 339.
A&S TH FA Lit
- AMCS 3222. Major American Writers: The Contemporary American Novel**
Same as E Lit 3222.
A&S TH FA Lit
- AMCS 3223. American Literature to 1865**
Same as E Lit 321.
A&S TH FA Lit
- AMCS 3231. Topics in American Drama: O'Neill, America's Nobel Laureate: His Work, His "Legacy of Love"**
Same as Drama 323.
A&S TH
- AMCS 3232. Selected American Writers: Foreignisms**
Same as E Lit 323.
A&S TH FA Lit
- AMCS 3233. Topics in American Drama: Pushing the Envelope—Contemporary American Drama**
Same as Drama 323.
A&S TH
- AMCS 3251. Vote for Pedro: A Critical Look at Youth and Popular Cultures**
Same as Anthro 3254.
A&S SS FA SSP
- AMCS 3252. History and (Auto)biography from Modern South Africa**
Same as History 3252.
A&S CD TH
- AMCS 3254. African Americans and Children's Literature**
Same as AFAS 3254.
A&S TH FA Lit
- AMCS 326. American Economic History**
Same as Econ 326.
A&S SS FA SSP
- AMCS 3261. Methods and Reasoning in the Social Sciences I**
Same as STA 326.
A&S QA SS FA SSP
- AMCS 327. Public Opinion and American Democracy**
Same as Pol Sci 3211.
A&S SS FA SSP
- AMCS 328. Contemporary Women's Health**
Same as WGS 316.
A&S SD SS FA SSP
- AMCS 3292. Modern South Asian Politics**
Same as Pol Sci 3293.
This course focuses on the recent political history and development of South Asia. It begins with a review of the British colonial period and the Independence movement. The remainder of the course examines different political issues in India, Pakistan, Bangladesh, and Sri Lanka. Topics include political mobilization, land reform, law and politics, social movements, religious and caste politics, the rise of religious nationalism, and political control of the economy. Course Web site: <http://arts.wustl.edu/~polisci/parikh/asian/>. Credit 3 units.
A&S SS FA SSP
- AMCS 330. Topics in American Culture Studies: Exploring America, 1957**
In contrast with our conventional understanding of exploration as a geographical adventure, the movement in this course will be in time. Taking one year as the focal point for study, in this case, 1957, we read newspapers, books, and magazines, watch TV, listen to speeches and music, go to the movies, and, in general, examine the documents we can recover from that period in an effort both to better understand American culture and to discover how such a large and nebulous subject might be studied. The work for this course involves collaboration, with a division of materials and regular reports to the class concerning individual (or small group) areas of responsibility. Continuous participation is a requirement rather than an option. Credit 3 units.
A&S TH FA SSP
- AMCS 3301. History of American Cinema**
Same as Film 330.
A&S TH FA AH
- AMCS 3302. The New Hollywood Cinema**
Same as Film 331.
- AMCS 3312. Gender and American Politics**
Same as Pol Sci 331B.
A&S SD SS FA SSP
- AMCS 332. Methods and Reasoning in Social Sciences II**
Same as STA 330.
A&S SS FA SSP
- AMCS 3321. Topics in Politics: Constitutionalism and Democracy**
Same as Pol Sci 3321.
A&S SS
- AMCS 3322. Brave New Crops**
Same as Anthro 3322.
A&S SS FA NSM
- AMCS 3325. Topics in Politics: Constitutional Politics in the United States**
Same as Pol Sci 3325.
A&S SS FA SSP
- AMCS 332B. Environmental and Energy Issues**
Same as Pol Sci 332B.
A&S SS FA SSP
- AMCS 333. Topics in Politics: Women and the Law**
Same as Pol Sci 333.
A&S SS FA SSP
- AMCS 3332. Topics in Politics**
Same as Pol Sci 336.
A&S SS FA SSP
- AMCS 335. Topics in Feminist Thought: Feminist Theory**
Same as WGS 335.
A&S SD TH FA SSP
- AMCS 336. Topics in American Culture Studies**
Topics courses in American Culture Studies are offered routinely and examine aspects of our culture from various disciplines and often through multidisciplinary approaches. Courses previously offered include: 19th-century American Indian Literature; Hurricane Katrina: A Case Study in Disaster and Relief; The History of Popular Culture in the United States; Mark Twain: Humor and Politics in the 19th Century; and American Presidential Rhetoric. Courses are sometimes team-taught or combine community service with learning. Faculty includes WU professors, visiting scholars, community leaders, or advanced graduate fellows in American Culture Studies. Credit 3 units.
- AMCS 337. Topics in Women's Literature**
Same as WGS 337.
A&S SD TH WI FA Lit
- AMCS 3381. Topics in Politics: National Security, Civil Liberties, and the Law**
Same as Pol Sci 3381.
A&S SS FA SSP
- AMCS 3391. Topics in 19th- and 20th-Century American Writing: American Short Fiction**
Same as E Lit 3391.
A&S TH
- AMCS 3400. Topics in 20th-Century American Writing: Whitman and Dickinson**
- AMCS 3402. The American Novel: Split and Hybrid American Identities**
Same as E Lit 340W.
A&S TH WI
- AMCS 3403. Social and Political Philosophy**
Same as Phil 340F.
A&S TH FA SSP
- AMCS 341. Understanding the Evidence: Provocative Topics of Contemporary Women's Health and Reproduction**
Same as WGS 343.
A&S SS

- AMCS 342. The American Presidency**
Same as *Pol Sci 342*.
A&S SS FA SSP
- AMCS 342B. Elections and Reform**
Same as *Pol Sci 342B*.
A&S SS FA SSP
- AMCS 344. Courts and Civil Liberties**
Same as *Pol Sci 344*.
A&S SS FA SSP
- AMCS 3441. Defendant's Rights**
Same as *Pol Sci 3441*.
A&S SS FA SSP
- AMCS 346. The American Legal System**
Same as *Pol Sci 353*.
A&S SS FA SSP
- AMCS 3461. Philosophy of Law**
- AMCS 3462. Female Gaze: Picturing Abuse in the Media**
Same as *WGS 346*.
A&S TH
- AMCS 347. Darwin and Evolutionary Controversies**
Same as *Biol 347*.
A&S NS WI FA NSM
- AMCS 3470. Gender and Citizenship**
Same as *WGS 347*.
A&S TH
- AMCS 3471. Archaeology of the St. Louis Region**
Same as *Anthro 3471*.
- AMCS 348. Topics in English and American Literature: American and English Nature Writing**
- AMCS 349. Ancient Mound Builders of the Mississippi Valley**
Same as *Anthro 347B*.
A&S CD SS FA SSP
- AMCS 3490. Media Cultures**
Same as *Film 349*.
A&S TH
- AMCS 3501. Political Economy**
Same as *Econ 3501*.
A&S SS
- AMCS 351. History of Electronic Media**
Same as *Film 350*.
A&S TH
- AMCS 353. Politics, Economics, and Welfare**
Same as *Econ 350*.
A&S SS FA SSP
- AMCS 3531. Selected English and American Writers**
Same as *E Lit 3531*.
A&S TH FA Lit
- AMCS 3542. Quest for Racial Reconciliation**
Same as *AFAS 3542*.
A&S TH FA SSP
- AMCS 356. Directed Writing Seminar in American Culture Studies**
Credit 3 units.
- AMCS 3561. Women and the Law**
Same as *WGS 3561*.
- AMCS 3562. The Art of the Novel**
Same as *E Lit 356*.
A&S TH FA Lit
- AMCS 358. Law, Politics, and Society**
Same as *Pol Sci 358*.
A&S SS FA SSP
- AMCS 3581. Scribbling Women: 19th-Century American Women Writers**
Same as *WGS 358*.
A&S TH FA Lit
- AMCS 3582. Race, Class, and Writing in the United States and the Caribbean, 1900–1950**
Same as *E Lit 3582*.
A&S SD TH
- AMCS 360. History of the Film Score**
Same as *Film 360*.
A&S TH FA AH
- AMCS 3610. Documenting American Lives**
Same as *AMCS 361*.
- AMCS 362. America by Design**
Same as *AMCS 362*.
- AMCS 363. The American Frontier: 1776–1848**
Same as *History 3632*.
A&S SD TH FA SSP
- AMCS 3631. The New American Metropolis**
Same as *AMCS 363*.
- AMCS 3640. Life After Broadcast: From Screen to Archive**
Same as *Film 364*.
- AMCS 365. The New Republic: The United States, 1776–1848**
Same as *History 365*.
A&S TH FA SSP
- AMCS 3651. Black Women Writers**
Same as *AFAS 3651*.
A&S SD TH FA Lit
- AMCS 366. Civil War and Reconstruction**
Same as *History 366*.
A&S SD TH FA SSP
- AMCS 367. Modern America, 1877–1929**
Same as *History 367*.
A&S TH FA SSP
- AMCS 3672. The Native American Experience**
Same as *Hist 3672*.
- AMCS 368. Modern America Since 1929**
Same as *History 368*.
A&S TH FA SSP
- AMCS 3680. The Cold War, 1945–1991**
Same as *History 3680*.
A&S TH FA SSP
- AMCS 3681. American Environmental History**
Same as *Hist 3680*.
- AMCS 369. American Horrors**
Same as *Film 370*.
A&S TH
- AMCS 370. The American West: The Image in History**
Same as *Art-Arch 370*.
A&S CD TH FA AH
- AMCS 371. American Art to 1900**
Same as *Art-Arch 371*.
A&S TH FA AH
- AMCS 3710. Illustrated Entertainment: Pictorial Graphic Culture from Early Printing to Television**
Same as *Art-Arch 3701*.
A&S TH FA AH
- AMCS 3712. Art and Culture in America's Gilded Age**
Same as *Art-Arch 3712*.
A&S TH FA AH
- AMCS 372. American Art, Part II**
Same as *Art-Arch 372*.
A&S TH FA AH
- AMCS 3721. Geoarchaeology**
Same as *Anthro 372*.
A&S SS FA SSP
- AMCS 372C. History of Law in American Life II: 1776 to the Present**
Same as *History 372C*.
A&S SD TH FA SSP
- AMCS 373. Making War**
Same as *Film 371*.
A&S TH
- AMCS 3730. History of the United States: Foreign Relations to 1914**
Same as *History 373*.
A&S TH FA SSP
- AMCS 374. History of U.S. Foreign Relations 1914–1950**
Same as *History 374*.
A&S TH FA SSP
- AMCS 3741. History of U.S. Foreign Relations Since 1950**
Same as *History 3741*.
A&S TH FA SSP
- AMCS 3750. Topics in Women's History: African-American Women**
Same as *AFAS 3752*.
A&S TH FA SSP
- AMCS 3751. Topics in Women's History: U.S. Women since 1945**
Same as *History 3751*.
A&S SD TH FA SSP
- AMCS 3753. Topics in Women's History: Women in American History**
Same as *History 3752*.
A&S SD TH FA SSP
- AMCS 3755. Disability, Quality of Life, and Community Responsibility**
Same as *GeSt 375*.
- AMCS 376. American Modernism, 1900–1940**
Same as *Art-Arch 376*.
A&S TH WI FA AH
- AMCS 379. Banned Books**
Same as *E Lit 381*.
A&S TH FA Lit
- AMCS 3793. Mississippi River Basin: Past, Present, and Future**
Same as *Anthro 3793*.
A&S SS
- AMCS 381. North American Religious Experience**
- AMCS 383. American Culture and Society Since 1945**
Same as *History 383*.
A&S TH FA SSP
- AMCS 3832. Topics in Women and Gender Studies**
Same as *WGS 383*.
- AMCS 3838. African-American Poetry from 1950 to the Present**
Same as *AFAS 3838*.
A&S TH FA Lit
- AMCS 387C. African-American Literature: Early Writers**
Same as *AFAS 387C*.
A&S SD TH FA Lit
- AMCS 388C. African-American Literature**
Same as *AFAS 388C*.
A&S SD TH FA Lit
- AMCS 389C. African-American History Since Emancipation**
Same as *History 388C*.
A&S SD TH FA SSP

AMCS 390. Topics in Women's Studies: Women, Feminism, and Popular Culture*Same as WGS 390.***A&S** SD SS **FA** SSP**AMCS 390C. Black America to the Civil War***Same as History 387C.***A&S** SD TH **FA** SSP**AMCS 391. Topics in Women's Studies: Violence Against Women***Same as WGS 393.***A&S** SD SS **FA** SSP**AMCS 392. The Many Enigmas of Thomas Jefferson***Same as History 39K8.***A&S** TH WI**AMCS 396. American Culture and Politics Since 1945: Writing Intensive Seminar**

WI

AMCS 397. Gender and Sexuality in 1950s America: Writing Intensive Seminar*Same as History 39F8.***A&S** SD TH WI**AMCS 400. Gender, Culture, and Identity in America***Same as WGS 401.***A&S** SD TH **FA** SSP**AMCS 401. Race, Sex, and Sexuality: Concepts of Identity***Same as WGS 403.***A&S** SD SS **FA** SSP**AMCS 4010. Pluralism, Liberalism, and Education***Same as Pol Sci 4010.***A&S** SS**AMCS 402. Black and White in American Drama***Same as E Lit 403.***A&S** TH **FA** Lit**AMCS 4020. The Legal Landscape Changing American Society***Same as Pol Sci 4020.***A&S** SS**AMCS 403. Culture and History of the Southwestern United States***Same as Anthro 403.***A&S** CD SS **FA** SSP**AMCS 4050. Topics in Political Thought: Democracy and Society***Same as Pol Sci 405.***A&S** SS **FA** SSP**AMCS 408. Gender in Contemporary Art***Same as Art-Arch 408.***A&S** SD TH **FA** AH**AMCS 409. Logics of the Art Museum****AMCS 411. Topics in American Politics: Prisons and the Politics of Criminal Justice****AMCS 412. Rethinking the Architectural Relationship***Same as Arch 421K.***AMCS 414. Transatlantic Enlightenment: Travels, Scientists, and Evangelicals in the Long 18th Century***Same as E Lit 415.***A&S** TH **FA** Lit**AMCS 415. Feminist Art and Theory 1970 to Present***Same as Art-Arch 415.***A&S** TH**AMCS 416. Rediscovering the Child Interdisciplinary Workshops in an Urban Elementary School***Same as GeSt 416, URST 416.*

This service-learning experience allows students to bring their knowledge and passion about their fields of study to elementary students at the Adams School in the city of St. Louis. Students will spend the first half of the semester together in studio classes on campus to learn the creative process of synthesizing variables. They will discuss readings and attend guest faculty lectures that expand their base of knowledge for designing curricular workshops for the children. Guest lectures will include faculty from various disciplines throughout the University, as well as the principal of the Adams School. Each student will work with the professor individually and in their team to design problem-solving, interdisciplinary workshops for first and second grades. During the second half of the semester students move on-site to Adams School. This course seeks students from all disciplines and schools. Credit 3 units.

A&S SS**AMCS 417. Topics in African History: Middle Passages: African Americans and South Africa***Same as AFAS 417.***A&S** CD TH**AMCS 418. Feminist Literary Criticism***Same as WGS 419.***A&S** TH**AMCS 420. Topics in American Culture****Studies: William and Henry James**

The relations, in the James Family, of consciousness between both father and sons and brothers, is one of the most exciting stories in American cultural history. Though Henry was exasperated by William's frequent display of a "constitutional inability" to appreciate the novelist's elliptical style and subtlety, he confessed, after reading his brother's *Pragmatism*, "All my life I have (in the manner of Molière's M. Jourdain) been unconsciously pragmatizing." He recognized that, despite their clashing temperaments and syntax, the brothers shared a common paternal legacy of spiritual morality or, what Henry James called "the moral imagination," and that it strongly marked his fiction and William's philosophy. We will, in this course, read major works of William and Henry that show the deep affinity of their vision: *Pragmatism*, *The Will to Believe*, *Varieties of Religious Experience*, *Portrait of a Lady*, *Wings of the Dove*, *The Europeans*, and critical backgrounds and interpretation. Credit 3 units.

A&S TH**AMCS 4210. A Tale of Two Cities: Urban Form and Society in Chicago and St. Louis***Same as History 4214, ARCH 4211, URST 4210.*

This interdisciplinary course will explore the changing forms of urban life in Chicago and St. Louis from the early 19th century through the present. Drawing on methods and sources employed by historians, geographers, planners, and designers, we will trace the ways urban spaces were produced, used, adapted, destroyed, replaced, and invested with multiple meanings. We will map the dynamic relationship between social life and the built environment, considering thematic links between topics including labor and housing, manufacturing and gender, public space and ethnic identity. Credit 3 units.

A&S TH**AMCS 4213. Contemporary Art in Exhibition: Museums and Beyond***Same as Art-Arch 4212.***A&S** TH **FA** AH**AMCS 422. Plants and American People: Past and Present***Same as Anthro 4213.***A&S** SS **FA** SSP**AMCS 423. Topics in American Literature:***Same as E Lit 423.***A&S** SD TH **FA** Lit**AMCS 4231. Topics in American Literature I: Religion and the Public Sphere in Early America***Same as E Lit 4231.***A&S** TH **FA** Lit**AMCS 4232. Slavery and the American Imagination***Same as E Lit 4232.***A&S** TH **FA** Lit**AMCS 424. Topics in American Literature II: The Awakening***Same as E Lit 424.***A&S** TH **FA** Lit**AMCS 4244. Topics in African-American Literature: Texts and Contexts of the Harlem Renaissance***Same as E Lit 4244.***A&S** TH **FA** Lit**AMCS 426. Issues of Disability in Society***Same as OT 426.***AMCS 4261. Politics of the Civil Rights Movement***Same as Pol Sci 426.***A&S** SD SS **FA** SSP**AMCS 4271. American Literature: The Rise of Realism to World War I***Same as E Lit 427.***A&S** TH **FA** Lit**AMCS 4273. Social Gerontology***Same as Psych 427.***A&S** SS **FA** SSP**AMCS 4280. History of Urban Schooling in the United States***Same as Educ 4280.***A&S** TH**AMCS 4281. Race and Science in America, 1840–2000***Same as Bio 428.***AMCS 4282. Modernist Fiction: Pynchon and the Limits of Authorship***Same as E Lit 4282.***A&S** TH**AMCS 4288. Higher Education in American Culture***Same as Educ 4288.***A&S** TH **FA** SSP**AMCS 4289. Neighborhoods, Schools, and Social Inequality***Same as Educ 4289.***A&S** SS**AMCS 4291. The American Renaissance***Same as E Lit 426.***A&S** TH **FA** Lit**AMCS 4293. History and Social Theory***Same as History 4293.***A&S** TH **FA** SSP**AMCS 430. Early American Literature***Same as E Lit 425.***A&S** TH **FA** Lit**AMCS 4301. American Literature from 1855–1921***Same as E Lit 429.***A&S** TH **FA** Lit

AMCS 4303. Clown Princes*Same as Film 430.*

A&S TH

AMCS 431. Modernism and Post-Modernism in American Literature*Same as E Lit 428.*

A&S TH FA Lit

AMCS 4315. Culture, Language, and the Education of Black Students*Same as Educ 4315, URST 4315.*

A&S CD SS FA SSP

AMCS 432. Modernism and Ethnicity in 20th-Century American Literature*Same as E Lit 4601.*

A&S TH FA Lit

AMCS 4322. Brave New Crops*Same as Anthro 4322.*

A&S SS

AMCS 433. Topics in American Culture Studies: Mark Twain—Humor and Politics in 19th-Century America

Mark Twain's unique status as a writer who has become a cultural icon cannot be explained merely in terms of literary gifts and aesthetic achievement. He is America's best-known author in large part because of his engagement with issues central to our institutions and political practice. The "southwestern" humorists who profoundly influenced his work used humor as a basis for political commentary and cultural criticism, a tradition to which Twain's own satirical treatment of everything from Congress to juries belongs. This course will examine both the literary achievement of Mark Twain and the ways in which his writings provide a critique—built over a lifetime—of American culture, probing the central issues of our politics (domestic and international) and our complicated relationships to one another. Credit 3 units.

A&S TH FA SSP

AMCS 438. Contemporary American Feminism and Theater*Same as Drama 438.*

A&S TH FA AH

AMCS 4380. Colonial and Early American St. Louis, 1764–1812**AMCS 443. Topics in the Philosophy of Law: Rights, Institution, and the Law***Same as Phil 445.*

A&S LA

AMCS 444. Seminar: Reality Theater*Same as Drama 445.*

A&S LA

AMCS 446. Seminar: Women and Comedy**AMCS 4462. The Rule of Law****AMCS 4471. Modern Poetry I: Modernisms****AMCS 4483. Race Politics in 19th- and 20th-Century America***Same as AFAS 448.*

A&S SS FA SSP

AMCS 448W. Current Macroeconomic Issues*Same as Econ 448W.*

A&S SS WI FA SSP

AMCS 4501. American Drama*Same as Drama 453.*

A&S TH FA Lit

AMCS 4513. Criminal Law and Criminal Justice: Homicide*Same as Pol Sci 4513.*

A&S SS WI FA SSP

AMCS 452. Race, Ethnicity, and Culture: Qualitative Inquiry in Urban Education*Same as AFAS 4511.*

A&S SD SS

AMCS 4522. Topics in American Politics: The Voting, Campaigns, and Elections*Same as Pol Sci 4522.*

A&S SS FA SSP

AMCS 453. Sociology of Education*Same as Educ 453B.*

A&S SD SS FA SSP

AMCS 454. Environmental Policy*Same as Econ 451.*

A&S SS FA SSP

AMCS 456. Topics in American Politics: Supreme Court*Same as Pol Sci 451.*

A&S SS FA SSP

AMCS 4560. Urban Politics*Same as Pol Sci 4561.*

A&S SS

AMCS 4563. Business, Government, and the Public*Same as Econ 456.*

A&S QA SS FA SSP

AMCS 457. American Film Genres*Same as Film 450.*

A&S TH FA Lit

AMCS 4581. Major Film Directors*Same as Film 458.*

A&S TH

AMCS 4591. Philosophies of Education*Same as Educ 459F.*

A&S TH FA SSP

AMCS 460. Urban Economics*Same as Econ 460.*

A&S SS FA SSP

AMCS 4608. Education of Black Children and Youth in the United States*Same as Educ 4608.*

A&S SD TH WI FA SSP

AMCS 461. Environmental Law and Policy*Same as EnSt 461.*

A&S SS

AMCS 461B. The Construction and Experience of Black Adolescence*Same as AFAS 461B.*

A&S SS FA SSP

AMCS 462. Politics of Education*Same as Educ 462.*

A&S SS FA SSP

AMCS 4621. The Political Economy of Urban Education*Same as Educ 4621.*

A&S CD SS

AMCS 463. Topics in American Politics*Same as Pol Sci 467.*

A&S SS FA SSP

AMCS 466. American Indian Societies, Cultures, and Values*Same as Anthro 4662.*

This three-unit interdisciplinary course will survey several major themes in the history and modern evolution of American Indian societies, cultures, values, and laws. The course will be divided into several parts, the first of which will examine indigenous societies and cultures before the arrival of Europeans on this continent. Consideration will be given to native worldviews, languages, beliefs, music, and art. The second part of the course will explore the history of American Indians and Indian nations in the United States and their treat-

ment by the United States. This part will examine the fluctuating policies of the federal government and the evolution of Indian societies during various periods of resistance, survival, and renewal. The third part of the course will examine modern Indian governments, legal systems, and the status of Indian nations as sovereign political entities within the United States. Subtopics will include the governmental powers of Indian nations over their reservations, treaty-based rights to land, water, wildlife, and other natural resources; the cultural and intellectual property rights of Indians; and comparative and international perspectives. The final part of the course will consider the social, political, and economic status of American Indians in the 21st century. Particular attention will be given to models of effective leadership, economic development, and community organization in Indian country. Credit 3 units.

AMCS 467. American Intellectual History Since 1865**AMCS 468. The Age of Lincoln: America in the 1850s**

This seminar is an interdisciplinary examination of the culture and politics of America in the critical watershed decade before the Civil War. The course explores how a range of writers, some avowedly "literary," others more decidedly "political," advanced their versions of America in the larger culture, at a time when all things American—democracy, religious destiny and nationality itself—were becoming profoundly problematic. The Lincoln-Douglas debates; Stowe's *Uncle Tom's Cabin*; Walt Whitman's *Leaves of Grass*; Frederick Douglass' autobiographies; the writings of the Transcendentalists; novels and short stories by Melville, Hawthorne, William Wells Brown, Harriet Wilson; pro-slavery screeds, apocalyptic anticipations of the future, Mormon/anti-Mormon and Catholic/anti-Catholic controversies; anxieties over race, gender, and sexuality, are some of the materials and concerns to be taken up, in the context of the titanic struggles of the decade: the Conflict and Compromise of 1850, Kansas, Dred Scott, John Brown's Raids, and the Great Secession Winter. Credit 4 units.

AMCS 4689. American Intellectual History to 1865*Same as History 4689.*

A&S TH

AMCS 470. American Intellectual History*Same as History 469.*

A&S TH

AMCS 472. American Art and Culture, 1945–1960*Same as Art-Arch 4721.*

A&S TH FA AH

AMCS 473. Art and Culture in Fin-De-Siècle America*Same as Art-Arch 473.*

A&S TH FA AH

AMCS 475. American Culture: Traditions, Methods, and Visions*Same as AMCS 475, AFAS 4606, STA 4751, History 4752, LH 463, E Lit 463.*

This course offers an introduction to the multidisciplinary study of American culture. The course aims to explore the means of relating or integrating the historical, literary, art-historical, popular-culture, and social-scientific study of American life, and to explore the problems inherent in this project. The course takes the form of an intensive seminar, requiring commitment to weekly readings, informed discussion, and critical writing. Credit 3 units.

A&S TH

AMCS 476. The City in American Arts and Popular Culture*Same as Art-Arch 475.***A&S TH FA AH****AMCS 477. Topics in Rhetoric: American Presidential Rhetoric**

"There is but one national voice in the country," Woodrow Wilson once declared, "and that is the voice of the President." Because the presidency is the one office constitutionally charged with representing the country as a whole, the formal addresses of those who have held that position represent efforts to describe and interpret American union as well as statements of more specific political purposes. Through careful consideration of these speeches, we attempt to better understand individual presidents, the office itself, and the country constantly being composed and explicated in this oratory. Credit 3 units.

A&S LA**AMCS 4785. Art and Culture in 1920s America***Same as Art-Arch 4785.***A&S TH FA AH****AMCS 479. On Location: Exploring America***Same as AMCS 4790.*

Credit 3 units.

AMCS 4792. Globalization and National Politics*Same as Pol.Sci 4792.***A&S SS FA SSP****AMCS 4803. Geographic Information Systems (GIS), Landscape, and Spatial Analysis in Archaeology***Same as Anthro 4803.***A&S SS****AMCS 481. History of Education in the United States***Same as Educ 481.***A&S TH FA SSP****AMCS 483. Selected American Writers I***Same as E Lit 483.***A&S TH FA Lit****AMCS 486. American Family Drama—****SECTION 01 ONLY***Same as Drama 487.***A&S TH WI FA AH****AMCS 4889. Reframing Feminist Art of the 1970s***Same as Art-Arch 4889.***A&S TH FA AH****AMCS 4890. Advanced Seminar in History: Latin America and the United States in the 20th Century***Same as History 4890.***A&S TH FA SSP****AMCS 4891. The Science and Politics of Testing in the United States***Same as Educ 4891.***A&S SD SS****AMCS 4892. Advanced Seminar: Oral History***Same as History 4892.***A&S TH FA SSP****AMCS 4893. Advanced Seminar: Protests of the 1950s, '60s, '70s***Same as History 4893.***A&S TH FA SSP****AMCS 4894. Advanced Seminar: United States in Vietnam***Same as History 4894.***A&S TH FA SSP****AMCS 4899. Seminar: Pathways to Domestication***Same as Anthro 489.***A&S SS FA SSP****AMCS 4905. Advanced Seminar: Issues in the History of Medicine as a Profession***Same as History 4905.***A&S TH FA SSP****AMCS 4908. Advanced Seminar: Women in the History of Higher Education and Professions***Same as Educ 440.***A&S SD TH FA SSP****AMCS 4927. Law and Culture in Early America***Same as History 4927.***A&S TH FA SSP****AMCS 4937. Advanced Seminar in History: From World War to Cold War America, 1943–1960***Same as History 4937.***A&S TH FA SSP****AMCS 4945. Advanced Seminar in History: Modern Black America***Same as History 4945.***A&S TH FA SSP****AMCS 4946. The "Federalist" Papers—Ideas and Politics in the Creation of the American Republic***Same as History 4946.***A&S TH FA SSP****AMCS 495. Environmental Writing***Same as EnSt 495.***A&S SS WI****AMCS 4950. Advanced Seminar in History: The Civil Rights Movement***Same as History 4951.***A&S SD TH FA SSP****AMCS 4951. Advanced Seminar in History: Slavery***Same as History 4951.***A&S SD TH FA SSP****AMCS 4952. Advanced Seminar: American Environmental History**

Credit 4 units.

A&S TH FA SSP**AMCS 4954. Advanced Seminar: Sexuality in America***Same as History 4918.***A&S TH FA SSP****AMCS 497. The American Trauma: Representing the Civil War in Art, Literature, and Politics***Same as History 4976.***A&S TH****AMCS 4974. Advanced Seminar in History: Gender and Property Law***Same as History 4974.***A&S TH FA SSP****AMCS 4978. The Occult in America****AMCS 4987. Antislavery: The Legal Assault on Slavery in St. Louis***Same as History 4987.***A&S SD TH****AMCS 500. Independent Study**

By permission of Instructor. Credit variable, maximum 3 units.

AMCS 501. Overseas Research in American Culture Studies

By permission of instructor. Credit variable, maximum 3 units.

AMCS 502. The Circuit Court Records: Directed Study in Legal Culture

By permission of instructor. Credit variable, maximum 3 units.

AMCS 503. Research in Washington: Directed Study in Politics and Political Culture

By permission of instructor. Credit variable, maximum 3 units.

AMCS 504. Local Archives: Directed Study in St. Louis

Credit variable, maximum 3 units.

AMCS 505. Directed Study in American Languages

Credit variable, maximum 3 units.

AMCS 506. Internship in American Culture Studies

Credit variable, maximum 3 units.

AMCS 507. Practicum: Authors and Archives: Research in Rare and Unique Materials**AMCS 511. Seminar in American Culture***Same as E Lit 4232.***A&S TH FA Lit****AMCS 514. Lewis and Clark and the Mantle of Accuracy***Same as E Lit 526, History 5141.*

What makes something "accurate"? Using the 1804–1806 Lewis and Clark Expedition as a point of departure, this course considers how cultural context shaped the way people answered that question in early America. In pursuit of that goal, this course also explores multidisciplinary methods of studying culture in early America. The course examines competing notions of accuracy through various forms of cultural production, including published texts, private accounts, and visual artifacts. The course employs scholarship in fields including history, literary criticism, art history, and anthropology. In addition to exploring the specific subjects of this course, assignments require students to develop their own research objectives. The course also considers pedagogical issues of teaching culture including the challenges of multidisciplinary work as well as the digital technologies that increasingly serve as the means of accessing cultural artifacts. Credit 3 units.

AMCS 518. Seminar: The 19th Century: Life Writing: American Contexts*Same as E Lit 519.***AMCS 5223. Seminar in American Politics: Race and Politics***Same as Pol.Sci 523.***AMCS 5231. Seminar in American Literature: Authors, Audiences, and Americas: the 19th Century***Same as E Lit 5231.***AMCS 5233. The 20th Century: Historicity After the Ends of History***Same as E Lit 523.***AMCS 529. Graduate Seminar: Lifewriting in the 20th Century****AMCS 551. Advanced Research in the Humanities**

Credit variable, maximum 3 units.

AMCS 552. Advanced Research in the Social Sciences

Credit variable, maximum 3 units.

AMCS 553. Advanced Research in the Life Sciences

Credit variable, maximum 3 units.

AMCS 554. Directed Study in the Humanities

Credit variable, maximum 3 units.

AMCS 555. Directed Study in the Social Sciences

Credit variable, maximum 3 units.

AMCS 556. Directed Study in the Life Sciences

Credit variable, maximum 3 units.

Anthropology

Chair

Richard J. Smith

Ralph E. Morrow Distinguished University Professor
Ph.D., Yale University

Endowed Professors

John Baugh

Margaret Bush Wilson Professor in Arts & Sciences
(African and African American Studies)
Ph.D., University of Pennsylvania

John R. Bowen

Dunbar–Van Cleve Professor in Arts & Sciences
Ph.D., University of Chicago

Pascal R. Boyer

Henry Luce Professor of Collective and Individual Memory
Ph.D., University of Paris–Nanterre

Erik Trinkaus

Mary Tileston Hemenway Professor in Arts & Sciences
Ph.D., University of Pennsylvania

James V. Wertsch

Marshall S. Snow Professor in Arts & Sciences
Ph.D., University of Chicago

Professors

Lois Beck

Ph.D., University of Chicago

David L. Browman

Ph.D., Harvard University

Robert L. Canfield

Ph.D., University of Michigan

James M. Cheverud

Ph.D., University of Wisconsin–Madison

Glenn C. Conroy

Ph.D., Yale University

Gayle J. Fritz

Ph.D., University of North Carolina–Chapel Hill

T. R. Kidder

Ph.D., Harvard University

Fiona Marshall

Ph.D., University of California–Berkeley

Jane Phillips-Conroy

Ph.D., New York University

D. Tab Rasmussen

Ph.D., Duke University

Glenn D. Stone

Ph.D., University of Arizona

Robert W. Sussman

Ph.D., Duke University

Associate Professors

G. Edward Montgomery

Ph.D., Columbia University

Bradley P. Stoner

M.D., Ph.D., Indiana University

L. Lewis Wall

D.Phil., Oxford University
M.D., University of Kansas

Assistant Professors

Geoff Childs

Ph.D., Indiana University

Patrick Eisenlohr

Ph.D., University of Chicago

Michael Frachetti

Ph.D., University of Pennsylvania

Bret D. Gustafson

Ph.D., Harvard University

Rebecca J. Lester

Ph.D., University of California–San Diego

Derek Pardue

Ph.D., University of Illinois–Urbana Champaign

Shanti A. Parikh

Ph.D., Yale University

Adjunct Associate Professor

M. Priscilla Stone

Ph.D., University of Arizona

Adjunct Assistant Professor

Carolyn Lesorogol

Ph.D., Washington University

Senior Lecturer

John Kelly

Ph.D., University of Wisconsin–Madison

Professors Emeriti

Pedro C. Cavalcanti

Ph.D., University of Warsaw

Stephen Molnar

Ph.D., University of California–Santa Barbara

Patty Jo Watson

Edward Mallinckrodt Distinguished University Professor Emerita

Ph.D., University of Chicago

Murray Wax

Ph.D., University of Chicago

Anthropology offers you the opportunity to study human existence in the present and the past and to explore how and why humans vary in their behaviors, cultures, and biology. You will explore these in four subfields: archaeology, biological anthropology, socio-cultural anthropology, and linguistics.

Students choose to study anthropology because they want to understand some of the most intriguing and troubling issues faced by modern society: the origin and meaning of ethnic and gender differences; the role of institutions in social, political, and economic life; learned versus innate behavior; the similarities and differences among human societies; and the meaning of religion, community, and family.

When you major in anthropology, you may take classes as part of a general liberal arts education or as part of pre-professional training leading to graduate work. As an anthropology major, you take a wide range of courses in the humanities and in the social, behavioral, and natural sciences. Advisers work with you to plan a program of study that best suits your individual interests.

Anthropology faculty members bring a variety of research interests and teaching

styles into the classroom. Faculty research expertise in archaeology includes the origins of food production, the cultures of prehistoric North and South America, geoarchaeology, geographic information systems (GIS), and African prehistory. Our biological anthropology faculty focus on the evolution of humans and on the ecology, behavior, and evolution of nonhuman primates. Our socio-cultural faculty conduct research on a wide variety of topics, including states, societies and beliefs; family, kinship, and social change; political ecology and demography; culture and health; bodies, gender, and sexuality; and communication, media, and cognition.

Studying anthropology prepares you for an exciting professional life after college. Anthropology complements the study of economics, foreign languages, political science, psychology, and social work; it provides a solid foundation for postgraduate work in medicine and public health, business, international studies, and law. Archaeologists may work in state or federal government-supported archaeological projects or museums. Physical anthropology complements premedical and predoctoral studies and physical and occupational therapy; it provides experience for work with primates in zoos or conservation agencies. Cultural anthropologists pursue, in addition to academic careers, careers in business, public health, law, diplomatic services, and nonprofit institutions.

The faculty in the Anthropology Department are active in research and bring a diversity of experiences to their teaching. In recent years, they have conducted research in Afghanistan, Bolivia, Brazil, Central Asia, China, the Czech Republic, Egypt, Eritrea, Ethiopia, Guyana, India, Indonesia, Iran, Kazakhstan, Kenya, Madagascar, Mexico, Namibia, Nigeria, Peru, Poland, Portugal, South Africa, South Asia, Tibet, and Uganda, along with many sites in the United States.

The Major: As a student majoring in anthropology, you take at least 28 units in anthropology courses, of which 18 must be at the 300 level or higher, including at least 9 at the 400 level. Three units of 400-level independent study or Honors work may be applied to the upper-level requirements. You are required to take Anthro 397 (a one-unit course), 3700, and three introductory courses: 150A, 160B, and 190B.

Many anthropology majors choose to spend a semester or their entire junior year abroad. The Department of Anthropology has an exchange program with University College–London. You also may elect to spend one or more summers at local or international field schools. Research opportunities in archaeology and biological anthropology laboratories are also available. As an anthropology major, you have the opportunity to join Lambda Alpha, an active national anthropology honors society.

The Minor: You may choose to minor in anthropology, for which 18 units of study in anthropology are required, with at least 6 units from the introductory courses, Anthro 150A, 160B, 190B, and at least 9 units at the advanced level.

Senior Honors: As an anthropology major, you are encouraged to work for Senior Honors. Acceptance into the program is based on your previous academic performance and a proposal to a faculty member who agrees to supervise your Honors research. Senior Honors are awarded on the basis of your academic record and evaluation of the Honors thesis by a three-member faculty committee. You receive credit for work on the thesis by completing Anthro 4951 and 4961.

Capstone: The Department of Anthropology offers several options for those students wishing to complete a capstone experience, including writing an Honors thesis, completion of one of the specified research courses, or an individualized capstone project, planned with an anthropology faculty member.

Undergraduate Courses

Anthro 130. Freshman Seminar

Same as ARC 130, AMCS 130.

The purpose of this class is to engage and challenge freshman students in an open discussion about the prehistoric Mississippian community of Cahokia. The focus of this course is twofold. The first is to study the way in which the archaeological evidence has been interpreted. The second is to examine other perspectives on Cahokia, especially from the Native American descendants who consecrated this landscape nearly a millennium ago. An underlying tenet of this seminar in understanding Cahokia can also be achieved through the traditions and literature of Native Americans. In the end, we want to understand the basis for Cahokia's organization as a prehistoric Native American community, and the role that ritual and religion played in the rather dramatic and dynamic history of this community and the surrounding region. Credit 3 units.

A&S SS FA SSP

Anthro 135. Ethnicity, Culture, and Politics: The Case of Tibet

Geographic and political isolation, awe-inspiring landscape, and an esoteric religion have contributed to Tibet's image as a place of mystery. In the 1950s, Tibet made a dramatic entrance in the modern world when China reasserted a long-standing claim of dominion. Thousands of Tibetans were led by the Dalai Lama to exile in India and Nepal. Political chaos followed, with Tibetan exiles and the Chinese state making counter-claims in a global propaganda war. This course uses the case-study of Tibet to provide students with a perspective on historical and current interethnic conflicts. Students consider the ways in which race and ethnicity are not politically neutral concepts, but can be used to justify completely different political arguments and actions. The course is of interest to students who plan to take additional work in political science or anthropology, or who have an interest in concepts of ethnic identity or in the history, politics, and religions of Central Asia. Credit 3 units.

A&S SS

Anthro 141. Medicine and Society

This course provides the basic foundation in medical anthropology and cultural anthropology for students enrolled in the Medicine and Society Program. The purpose of the course is to introduce students to the central themes and theoretical approaches employed by medical anthropologists to study health and illness in cross-cultural perspective. Topical areas include analyses of disease, illness and sickness at micro and macro levels; im-

pact of personal and interpersonal factors on health; health effects of social, political, and economic factors; relationship of anthropology to biological and social science approaches; ecology of health and development; and cross-cultural health studies of language, gender, and race/ethnicity. Note: Content for this course overlaps with and replaces Anthro 160 for students enrolled in the Medicine and Society Program. Open only to students enrolled in the Medicine and Society Program. Credit 3 units.

A&S CD SS FA SSP

Anthro 142. Medicine and Society

This course is the required second-semester sequence of the introduction to medical anthropology and cultural anthropology for students enrolled in the Medicine and Society Program. The course builds upon material introduced in Anthropology 141 and provides greater ethnographic context for the cross-cultural study of health and illness. Topical areas include analyses of disease, illness and sickness at micro and macro levels; impact of personal and interpersonal factors on health; health effects of social, political, and economic factors; relationship of anthropology to biological and social sciences approaches; ecology of health and development; and cross-cultural health studies of language, gender, and race/ethnicity. Credit 3 units.

A&S CD SD SS

Anthro 150A. Introduction to Human Evolution

Same as Anthro 150I.

A survey of the fossil evidence for human evolution. The course includes discussion of the genetics of human variation and evolution, the study of living non-human primates, and the fossil record and its interpretation. An evolutionary perspective is used in an attempt to understand modern humans from the naturalistic point of view. Credit 3 units.

A&S NS FA NSM

Anthro 160B. Intro to Cultural Anthropology

Same as ISA 160B.

The basic concepts and theoretical principles of sociocultural anthropology. Case material from Asia, Africa, Melanesia, Latin America, and North America. Credit 3 units.

A&S CD SD SS FA SSP

Anthro 167. Global Population Issues

The objective of this course is to provide students with a broad overview of global population growth and its sociocultural, political, and economic ramifications. Prerequisite: This course is open to January Scholars Program Students only. Credit 3 units.

A&S SS FA SSP

Anthro 168. Hurricane Katrina: A Case Study in Disaster and American Society

This course examines the historical, societal, cultural, environmental, and political issues raised by the Hurricane Katrina disaster. Through exploration of scholarship from multiple disciplines, the course seeks to understand the complex issues of the disaster itself, as well as ongoing relief and rebuilding in the affected area. Credit 3 units.

Anthro 170D. Introduction to Linguistics

Same as Ling 170D.

A&S LA

Anthro 190B. Introduction to Archaeology

Same as Art-Arch 190B, ARC 190B, Anthro 190B.

A survey of the history, theory, and methods of archaeology. An emphasis on important problems and discoveries in world prehistory. Credit 3 units.

A&S SS FA AH

Anthro 204B. Anthropology and the Modern World

Same as Anthro 204.

What cultural anthropologists are learning about major issues of our time: cultures facing destruction, communal societies, sex roles, poverty, political repression in the Third World—sharpening the study of our own culture. Credit 3 units.

A&S CD SD SS FA SSP

Anthro 209C. World Archaeology

Same as ARC 200C.

A&S CD TH FA SSP

Anthro 215B. Language, Culture, and Society

Same as Ling 215B.

This course explores the relationships between linguistic practice and other social and cultural processes. Among the topics to be discussed are language and social identity, language and thought, language and gender, multilingualism and language shift as well as the connections between language and the identity of ethnically or nationally defined communities. The course format alternates between "classic" theoretical readings and ethnographic case studies on the interplay between linguistic practice and ideology as well as cultural and social processes. Credit 3 units.

A&S SS FA SSP

Anthro 251F. Religious Minorities of South Asia

Same as Re St 251F.

A&S CD TH FA SSP

Anthro 260. Topics in Health and Community

Same as Anthro 260, AMCS 260.

A survey of current topics in community health and medicine, with an emphasis upon social science approaches to issues affecting medicine and medical care in contemporary U.S. society. Issues include ethical debates in health care delivery, social stratification and health, access to health services, and factors affecting community wellness at local, national, and global levels. Presented as a weekly series of topical presentations by community health experts from the St. Louis area. Required for students enrolled in the Medicine and Society Program, and also open to other interested students. Credit 1 unit.

A&S SS FA SSP

Anthro 290. Independent Study

Designed to give undergraduates research experience in the various subdisciplines of Anthropology. May be taken more than once for credit. Prerequisite: consent of the faculty member under whom the research will be done. Credit variable, maximum 3 units.

Anthro 300. Internships in Anthropology

Anthropology majors may acquire professional experience outside the classroom by participating in a faculty-sponsored internship. Before work begins, the student and faculty sponsor must agree on a final written project, which is then approved by the Anthropology Academic Coordinator. Students are evaluated by the faculty sponsor on the basis of the written project and input from the internship supervisor. Course may only be taken one time. Prerequisite: 9 hours of anthropology and permission of department. Credit 3 units.

Anthro 301B. Individual, Family, and Community

Same as STA 301B.

A&S SD SS FA SSP

Anthro 305I. Anthropology of Tibet and the Himalayas

Same as East Asia 305I, IAS 3053.

This course is an anthropological and historical examination of Tibetan societies inhabiting the Tibetan Plateau and the highlands of Nepal. In addi-

tion to providing basic ethnographic descriptions of Tibetan societies, the course explores the changing nature of relations between Tibet and China, and between Tibet and the West. Guiding concepts include adaptation (both social and ecological), the politics of ethnicity and identity, and processes of culture change. Credit 3 units.

A&S SS FA SSP

Anthro 3052. China in Social and Cultural Perspective

Same as Anthro 3052, IAS 3054.

This course is an introduction to the anthropology of modern China and the various cultures subsumed under the name China. We look broadly at the experiences of Chinese people over the past century, with particular attention to the socialist era and recent decades. Adopting an anthropological perspective, we question whether it is possible to speak of a unified "Chinese culture" by analyzing diversity across time periods, regions, classes, genders, and ethnic groups. Course readings encourage us to think critically about the categories and assumptions we bring to the study of China. Credit 3 units.

A&S SS

Anthro 3053. Nomadic Strategies and Extreme Ecologies

Same as ARC 3053, EnSt 3053.

This course explores the archaeology and anthropology of nomadic pastoral societies in light of their ecological, political, and cultural strategies and adaptation to extreme environments (deserts, mountains, the arctic). The aim of the course is to understand both the early development of pastoral ways of life, and how nomads have had an essential role in the formation and transfer of culture, language, and power from prehistoric time to the current era. Credit 3 units.

A&S SS

Anthro 305B. Greater Central Asia in Crisis

Same as Anthro 305, IAS 3050, JNE 505B, JNE 305B.

This course focuses on contemporary issues in the ex-Soviet republics of Central Asia and Iran, Afghanistan, and Pakistan, but it also includes extensive reading on the social history of the region, in order to enable understanding of the social dynamics at work. Credit 3 units.

A&S CD SS

Anthro 306B. Africa: Peoples and Cultures

Same as EnSt 306B, AFAS 306B, IAS 306B, Anthro 306.

An anthropological survey of Africa from the classic ethnographies to contemporary studies of development. Emphasis on the numerous social and economic changes African peoples have experienced from pre-colonial times to the present. Credit 3 units.

A&S CD SS FA SSP

Anthro 307A. Human Variation

Same as Anthro 307, Biol 307A.

A survey of human biological diversity, considering its adaptive and taxonomic significance from the perspective of origins and distribution of traits and adaptation. Prerequisite: Anthro 150A or introductory biology. Credit 3 units.

A&S NS QA SD FA NSM

Anthro 3092. Indigenous Peoples and Movements in Latin America

Same as LatAm 3092, IAS 3092.

An overview of Amerindian peoples, cultures, and contemporary sociopolitical movements in core indigenous regions of Latin America (the Maya highlands of Mexico and Guatemala, and the Andes, Chaco, and Amazon of South America). Expressions of indigenous cultural, linguistic, and social difference are considered in relation to histories of European colonialism and modern Latin American

nation-building. Emphasis is placed on current dimensions of indigenous demands for territorial, political, and cultural rights in the context of global economic development, natural resource exploitation, military violence, and legal recognition of ethnic pluralism in some Latin American nation-states. Credit 3 units.

A&S CD SD SS

Anthro 3093. Anthropology of Modern Latin America

Same as AMCS 3093, IAS 3093, LatAm 3093.

A survey of current issues in the anthropological study of culture, politics, and change across contemporary Latin American and the Caribbean. Topics include machismo and feminismo, the drug war, race and mestizaje, yuppies and revolutionaries, ethnic movements, pop culture, violence, multinational business, and the cultural politics of U.S.-Latin American relations. Attention is given to the ways that anthropology is used to understand complex cultural and social processes in a region thoroughly shaped by globalization. Credit 3 units.

A&S SS

Anthro 310C. Ancient Civilizations of the New World

Same as Art-Arch 311C, LatAm 310C, ARC 310C, IAS 310I, AMCS 3100, Anthro 310C.

An examination of the Inca empire in Peru, and the Maya and Aztec empires in Mexico through the inquiry into the roots, development, form, and evolutionary history of pre-Columbian civilization in each region from its earliest times to the rise of the classic kingdoms. Examples of respective artistic accomplishments are presented and discussed. Credit 3 units.

A&S CD TH FA AH

Anthro 3111. Family, Kinship, and Marriage

Same as IAS 3111, Lw St 3111.

This course provides a cross-cultural examination of family and kinship relations. By examining case studies along with theoretical approaches, students are introduced to variation in family form and function both across different societies and within them. Issues examined include incest taboos, polygyny, bridewealth payments, divorce, childcare, and household organization. Case studies are drawn from various parts of the world, including the United States, India, Southeast Asia, and Africa. Credit 3 units.

A&S SS FA SSP

Anthro 3122. From Country to Heavy Metal: Ancient Civilizations of the Old World

Same as ARC 3122.

This course explores the archaeology of Europe, the Near East, and Central Asia from approximately 10,000 years ago to classical times (ending before Ancient Greece). This prehistoric epoch saw major developments among various civilizations of the Old World, such as the introduction of agriculture, animal domestication, the growth of cities, and technological developments such as pottery, metallurgy, and horse-riding. A major focus is the trajectory of cultural innovations of regional populations through time, and the complexity of their social, political, and ritual practices. We also investigate the variation in human adaptive strategies to various environmental and social contexts, from hunter/gatherers to early Neolithic farmers, to the interactions between nomadic populations and larger scale, urban societies in the Bronze and Iron Ages. Credit 3 units.

A&S SS

Anthro 3133. Topics in Anthropology: HIV/AIDS in Africa

Same as AFAS 313.

A&S SS

Anthro 3134. The AIDS Epidemic: Inequalities, Ethnography, and Ethics

Same as IAS 3134, AFAS 313, WGS 3134.

In the year 2000, HIV became the world's leading infectious cause of adult death, and in the next 10 years, AIDS will kill more people than all wars of the 20th century combined. As the global epidemic rages on, our greatest enemy in combating HIV/AIDS is not knowledge or resources, but global inequalities and the conceptual frameworks with which we understand health, human interaction, and sexuality. This course emphasizes the ethnographic approach for cultural analysis of responses to HIV/AIDS. Students explore the relationship between local communities and wider historical and economic processes, and theoretical approaches to disease, the body, ethnicity/race, gender, sexuality, risk, addiction, power, and culture. Other topics covered include the cultural construction of AIDS and risk, government responses to HIV/AIDS, origin and transmission debates, ethics and responsibilities, drug testing and marketing, the making of the AIDS industry and "risk" categories, prevention and education strategies, interaction between bio-medicine and alternative healing systems, and medical advances and hopes. Credit 3 units.

A&S SS

Anthro 313B. Methods and Reasoning in Social Sciences

Same as STA 326.

A&S QA SS FA SSP

Anthro 314B. First Americans: Prehistory of North America

Same as ARC 314B, AMCS 314.

The predecessors of the Eskimo, Northwest Coast Indians, Pueblo mound builders, and other North American Indians. Concentrates on deductions from archaeological data for cultural development. Credit 3 units.

A&S CD SS FA SSP

Anthro 318C. The Prehistory of Africa

Same as AFAS 319C, ARC 318C.

An overview of cultural development in Africa from approximately two million years ago until about 1000 AD; focus on research and interpretive problems in a case-study approach to periods ranging from the earliest archaeological traces to the spread of Bantu languages. Credit 3 units.

A&S CD SS FA SSP

Anthro 3201. Gender, Culture, and Madness

Same as WGS 3201, Anthro 3201.

This course explores the relationships among gender constructs, cultural values, and definitions of mental health and illness. Understandings of the proper roles, sensibilities, emotions, and dispositions of women and men are often culturally and morally loaded as indicators of the "proper" selves permitted in a given context. Across cultures, then, gender often becomes an expressive idiom for the relative health of the self. Gender identities or presentations that run counter to these conventions are frequently identified as disordered and in need of fixing. In this course, we take up these issues through three fundamental themes: the social and cultural (re)production of gendered bodies and dispositions; the normalization of these productions and the subsequent location of "madness" in divergent or dissonant experiences of embodiment; and the situation of discourses of "madness" within debates of resistance and conformity, selfhood and agency. Prerequisite: Junior standing or permission of instructor. Credit 3 units.

A&S SD SS

Anthro 3202. Anthropological Perspectives on Women's Health

The principal goal of this course is to explore the health issues/risks women face around the world.

In order to achieve this goal, we take a life cycle approach beginning with the birth of female babies through adolescence, adulthood, and finally through the aging process. Our perspective is biocultural, defined as the synergistic interaction between biology and culture. By comparing a diversity of health experiences across cultures, we can carefully examine the ways in which culture constructs perceptions of health and effective delivery of health care. Students finish the term with a clearer understanding of the biology of life cycle changes, how health inequalities are generated and perpetuated, and how to make more informed decisions about their own health choices. Prerequisite: Anthro 160 or permission of instructor. Credit 3 units.

A&S SS FA SSP

Anthro 3241. Studying the State

Same as STA 335.

A&S SS

Anthro 3242. Contemporary Contexts of Language, Literature and Culture in the African Diaspora

Same as AFAS 3241.

Anthro 3254. Vote for Pedro: A Critical Look at Youth and Popular Cultures

Same as IAS 3254, AMCS 3251.

Over the past decade, anthropologists have become increasingly wary of the importance of youth and popular cultures as a powerful field where people not only express themselves but also influence some of the basic tenets of society. While "pop life" is not exclusive to youth groups in terms of production and distribution, young people are the majority of consumers. In this course, we examine popular Christianity in Brazil, Mexican street art, Japanese manga comics, American teenage fascination with the extraterrestrial, U.S. college sports fandom, various "white" hip-hop movements, alternative "girl" rock, and drug "cultures." These vibrant forms and practices are not homogeneous, they vary across time and space. This course considers "the popular" in its broadest sense, giving us an opportunity to turn an anthropological lens onto the everyday life of teenagers and the seemingly flavor-of-the-month styles of the popular, while simultaneously opening up the discipline of cultural anthropology to appreciate the fast-paced montages and purposefully distorted sounds of consumerism and youth energy. Credit 3 units.

A&S SS FA SSP

Anthro 3260. Race, Class, and Gender:

Cultural Readings of Brazil and its Cities

Same as IAS 3260.

A&S SS

Anthro 327A. Human Evolution

The fossil evidence for human and nonhuman primate evolution. Classification and genetics in evolutionary perspective, relations between biology and culture in ancient and modern populations. Prerequisite: Anthro 150A or one 100-level Biology course or permission of instructor. Credit 3 units.

A&S NS FA NSM

Anthro 3282. Sexuality in Africa

Same as AFAS 3282.

A&S CD SS FA SSP

Anthro 3293. Religion and Society

Same as Re St 3293, IAS 3293.

We take a broad and practice-oriented view of "religion," including uttering spells, sacrificing to a god, healing through spirit possession, as well as praying and reciting scripture. We consider religious practices in small-scale societies as well as those characteristic of forms of Judaism, Islam, Christianity, and other broadly based religions. We

give special attention to the ways religions shape politics, law, war, as well as everyday life in modern societies. Credit 3 units.

A&S SS FA SSP

Anthro 329F. Religion, Ritual, and Worldview

Same as IDEV 329F, IAS 329F, Re St 329F.

A survey of ideas and practices in both tribal and world religions with emphasis on key rituals, symbols, and the place of religion in the modern world. Credit 3 units.

A&S SS FA SSP

Anthro 3313. Women and Islam

Same as Re St 3313, JNE 3313, JNE 5313, WGS 3323, IAS 3313.

An anthropological study of the position of women in the contemporary Muslim world, with examples drawn primarily from the Middle East but also from Asia, Africa, Europe, and the United States. Students examine ethnographic, historical, and literary works, including those written by Muslim women. Topics having a major impact on the construction of gender include Islamic belief and ritual, modest dress (veiling), notions of marriage and the family, modernization, nationalism and the nation-state, politics and protest, legal reform, formal education, work, and westernization. The course includes a visit to a St. Louis mosque, discussions with Muslim women, and films. Credit 3 units.

A&S CD SS FA SSP

Anthro 3322. Brave New Crops

Same as AMCS 3322, IAS 3322, EnSt 3322.

This course introduces students to the major issues surrounding the development and use of genetically modified (GM) crops. Its focus is international but with particular focus on the developing world. A variety of experts, available locally or through the Internet, contribute perspectives. The course also includes field trips. For further information, see artsci.wustl.edu/~anthro/courses/3322. Credit 3 units.

A&S SS FA NSM

Anthro 333. Culture and Health

Same as IAS 3332, Anthro 333.

A survey of cultural dimension in health, disease, wellness, illness, healing, curing, as seen in selected alternative medical traditions. Shamanism, Ayurveda, traditional Chinese medicine, homeopathy, chiropractic, and others are surveyed and compared with conventional biomedicine. Lectures, video case studies, approximately eight textbooks. Credit 3 units.

A&S SS FA SSP

Anthro 3369. Underwater Archaeology

Same as ARC 3369.

A&S TH FA SSP

Anthro 336B. Culture and Identity

Culture and diversity; cultural relativism and its contradictions; custom and habits; the construction and maintenance of norms; communication, symbol, sign, and intersubjectivity; symbolic interaction; rhetoric and the definition of social situations; societal means of fabricating distinctions (e.g., race, tribe, ethnic group, nationality, sect group). Credit 3 units.

A&S CD SD SS FA SSP

Anthro 3383. Cognition and Culture

Same as PNP 3383.

This course examines the influence of evolved cognitive dispositions (the way natural selection engineered the human mind) on the transmission of cultural knowledge. Dispositions present from early childhood make certain kinds of cultural knowledge particularly easy to acquire, and therefore, culturally stable. We also consider the evidence for differences in cognitive processes triggered by different social environments. Emphasis

is on empirical studies and experimental methods in the study of cultural similarity and differences. Prerequisite: Psych 100B, Anthro 160B or permission of instructor. Credit 3 units.

A&S SS FA SSP

Anthro 339F. Myth and Society

Same as IAS 339.

Notions of virtue and sublimity, origins and significance, history and eschatology as they are enshrined in narrative, didactic instruction, and other means of representing collective interests; their influence on society and social movements. Credit 3 units.

A&S CD SS FA SSP

Anthro 3411. Methods and Reasoning in the Social Sciences II: Gandhi's India and Nonviolent Resistance

Same as STA 340.

A&S SS FA SSP

Anthro 3431. Text, Memory, and Identity

Same as IAS 343.

A&S TH

Anthro 3461. Native Americans at Westward Expansion

Same as ARC 3461, AMCS 3142.

Issues precipitated by Euro-American contact, colonization, and expansion between 1492 and 1810 across Eastern North America, the Plains, and the Rocky Mountains. Impacts of exploration and settlement and responses by native peoples: epidemics; population loss; breakdown of Southeastern chiefdoms; resistance; relocation; and shifts in economic strategies. Perspectives and policies of Native Americans as well as Europeans and non-Indian Americans, including Lewis and Clark. Credit 3 units.

A&S CD SS FA SSP

Anthro 347B. Ancient Mound Builders of the Mississippi Valley

Same as Anthro 347, AMCS 349, ARC 347B.

Study of the peoples in North America who built mounds and other earthen structures beginning more than 4,000 years ago; why they erected earthworks; what the structures were used for; how they varied through time and across space; and what significance they had to members of society. Credit 3 units.

A&S CD SS FA SSP

Anthro 361. Culture and Environment

Same as EnSt 361, AFAS 361, IAS 361.

An introduction to the ecology of human culture, especially how "traditional" cultural ecosystems are organized and how they change with population density. Topics include foragers, slash and burn farming, intensive farming, warfare, population regulation, sexual division of labor. Credit 3 units.

A&S SS FA SSP

Anthro 3611. Population and Environment

An examination of the consequences of human global population growth, from both anthropological and demographic perspectives. Included are consideration of debates concerning the impact of population growth (the Malthusians versus the technological optimists), an anthropological perspective on population regulation and agricultural intensification in pre-industrial societies, and the protection of endangered habitats by the creation of national parks. Credit 3 units.

A&S SS

Anthro 3612. Population and Society

Same as IAS 3612, Anthro 3612.

This review of population processes and their social ramifications begins with an introduction to the basic terminology, concepts, and methods of population studies, followed by a survey of human population trends through history. The course then

investigates biological and social dimensions of marriage and childbearing, critically examines family planning policies, deals with the social impacts of epidemics and population ageing, and looks at connections between population movements and sociocultural changes. The overall objective of the course is to understand how population processes are not just biological in nature, but are closely related to social, cultural, political, and economic factors. Credit 3 units.

A&S SS

Anthro 362. The Biological Basis of Human Behavior

Same as PNP 362.

Infidelity, marriage customs, inner city violence, infanticide, intelligence ... Are the behavioral patterns we see genetically fixed and racially variable? What is the evolutionary and biological basis of human behavior? This course offers a critical evaluation of these from an anthropological perspective. Credit 3 units.

A&S CD NS SD FA NSM

Anthro 3620. Anthropological Perspectives on the Fetus

Where do we come from? How do we get here? When does "life" begin? Is the fetus a "person" or something else? How could we decide? This course integrates biological, medical, philosophical, and cross-cultural perspectives to examine how various societies (including our own) understand the nature of the human fetus. The course examines basic human embryology, beliefs about conception and fetal development, ideas about the moral status of the fetus, controversies surrounding prenatal care and antenatal diagnostic testing (including sex-selection and genetic screening tests), current controversies about fetal medicine and surgery, and the problem of abortion in cross-cultural perspective. Credit 3 units.

A&S SS FA SSP

Anthro 3621. Anthropology of Human Birth

This course examines the interaction between human biology and culture in relation to childbirth. Emphasis is placed on understanding the cultural challenges posed by the physiology of human reproduction, the ways various cultures have attempted to meet those challenges, and the resultant consequences that this has had for women's lives. The course draws on material from human anatomy and embryology, paleoanthropology, clinical obstetrics, public health, social anthropology, the history of medicine, and contemporary bioethics. Credit 3 units.

A&S SS

Anthro 3622. Issues in Human Reproductive Ecology

The purpose of this seminar is to explore human reproduction from a biocultural and ecological perspective. Reproductive ecology is an exciting and fast-growing sub-area of evolutionary anthropology. Reproductive ecology seeks to explore the interactions among reproduction, ecological, behavioral, and physiological variables. Such research sheds interesting light on central issues of human evolution. We examine some of the most recent research topics to appear in human reproductive ecology. Credit 3 units.

A&S SS

Anthro 3623. Birth Helpers and the Obstetrical Dilemma

This course examines the evolutionary discourse that stipulates a birth helper is necessary in human birth due to the "obstetrical dilemma." In addition to investigating how this discourse has been constructed, we study the different kinds of birth assistants through time and across cultures—including midwives, traditional birth assistants, obstetricians, nurses, and kin. We look at the political economies of birth assistants and the cultural dy-

namics influencing which kind of birth assistants are accepted in which cultures. The global politics of reproductive health policy as they related to power dynamics dictating which birth helpers are "legitimate" and which are not provide a critical analytical perspective through which we scrutinize these helpers at birth. Credit 3 units.

A&S SS

Anthro 3624. With Woman: Birth Assistants in Cross-Cultural Context

Same as WGS 3624.

This course examines the historical, cultural, and evolutionary development vis-à-vis the role specialization of assistants at birth. Beginning with the discourse in physical anthropological research and theory justifying helpers as necessary in human birth due to the obstetrical dilemma, we explore the development of the various tasks such helpers have taken on. Cross-cultural case histories covering the range and scope of practice of traditional birth attendants, midwives, nurses, physicians, and kin are used to illustrate the wide variety of birth practices and ritual related to assistants at birth. Modes of professionalization are examined, including a discussion of the gendered nature of the position. Finally, sociocultural, political, and economic structural constraints legitimizing some assistants and stigmatizing others are scrutinized in order to promote a critical analysis and understanding of the essential and dynamic roles these health care practitioners play in human reproduction. Prerequisite: Freshman seminar in Medicine and Society (Anthro 141) Credit 3 units.

A&S SS

Anthro 365. Human Growth and Development

This course focuses on the life-history of humans from birth to death. Through a series of lectures we consider how humans grow and change both biologically and psychologically over the course of our lives. Topics include: human growth curves, sex-differences, adolescence and puberty, nutrition, environment, growth disorders, death, and the evolution of human growth. Credit 3 units.

A&S SS FA NSM

Anthro 3661. Primate Biology

This course takes a multi-faceted introductory approach to the primates, the closest relatives of human beings, by investigating anatomy, growth and development, reproduction, behavioral adaptations, ecology, geographic distribution, taxonomy and evolution. Emphasis is placed not only on the apes and monkeys, but also on the lesser-known lemurs, lorises, bushbabies, tarsiers, and many others. The importance of primate biology to the discipline of anthropology is discussed. Intended for students who have already taken Anthro 150A, and recommended for students who wish to take the more advanced 400-level courses on primates. Prerequisite: Anthro 150A or permission of instructor. Credit 3 units.

A&S NS FA NSM

Anthro 367A. Paleoanthropology

The prehistoric Pliocene and Pleistocene evidence for human emergence and evolution. The emphasis is on the human fossil record and its interpretation in functional and behavioral terms. This is placed in the context of the Paleolithic archaeological record and issues regarding the biological relationships between various human groups. Prerequisite: Anthro 150A or equivalent. Credit 3 units.

A&S NS FA SSP

Anthro 3697. Culture and Aging

Same as Psych 3697, Anthro 3697.

This course provides an anthropological perspective on cultural and societal responses to the worldwide increase in numbers and proportions of longer-living adults. It also examines the experience and meaning of growing older within various cultural contexts. We consider the impact of cul-

ture on a number of aging-related areas, including the demography of global aging; conceptualizations of the life course; processes of human development as reflected in life histories of persons from diverse cultures; definitions of "successful aging"; biological anthropology and aging; family and intergenerational relationships; health beliefs and perceptions of health and frailty; healthcare systems; perceptions and treatment of late life cognitive decline; gender differences; gerotechnology; globalization and aging; and end-of-life issues. Prerequisite: Two cultural anthropology courses; one anthropology course and one aging-related course; or instructor's written permission. Credit 3 units.

A&S SS

Anthro 3700. The Works and Ideas of Great Anthropologists

A survey of major theories and paradigms in anthropology; emphasis is on approaches taken by sociocultural anthropologists in analyzing and explaining features of societies and cultures, including evolutionary theories, comparative methods, interpretive approaches and ecological accounts. Required of all majors. Students considering a junior year abroad should enroll sophomore year. Credit 3 units.

A&S CD SS FA SSP

Anthro 372. Geoarchaeology

Same as ARC 372, AMCS 3721.

Geoarchaeology involves the application of analytical techniques, concepts, and field methods from the earth sciences to help solve archaeological problems. Issues explored in this course include human and environmental processes involved in archaeological site formation, the sedimentary context of archaeological remains, soils and sediments relevant to archaeology, the relationship between past settlement and landscape evolution, paleoclimatic reconstruction, human impacts on the environment, geological sourcing of artifact proveniences, and remote sensing of the physical environment. Several field trips to local archaeological/geological sites provide an opportunity to understand how geoarchaeology is applied to specific research problems. Credit 3 units.

A&S SS FA SSP

Anthro 379. Feast or Famine: Archaeology and Climate Change

Same as EnSt 379, ARC 379.

This course examines the temporal, geographical, and environmental aspects of past climate changes, and by using specific examples, explores how climate changes may have affected the evolution of human culture and the course of human history. Archaeological and documentary examples from the Americas, Africa, Asia, Europe, and the Near East are used to explore if or how significant events in human history have been influenced by changes in climate. Credit 3 units.

A&S SS

Anthro 3793. Mississippi River Basin: Past, Present, and Future

Same as ARC 3793, EnSt 3793, AMCS 3793.

Interdisciplinary study of the past, present, and future of the Mississippi River Basin. Using lectures, guest presentations, and field trips, the course provides a broad overview of the important natural, historical, social, cultural, and environmental issues surrounding the Mississippi River and its tributaries. We encourage an understanding and appreciation of the river from a holistic perspective. An emphasis in the course is on experiential learning, or out-of-classroom field trips, where students have the opportunity to see first-hand important issues related to the Mississippi River, its environment, culture, and the historic changes wrought upon the river, and their effects. The class meets once a week; classes include some combination of lecture, presentations by

guest speakers, or field trips. During spring break we take a field trip down the Mississippi River to the Gulf of Mexico (students will be charged an extra fee for this field trip). Credit 4 units.

A&S SS

Anthro 3862. Biocultural Perspectives on Children

As childhood is both a biological phenomenon and a social construct, this course examines childhood both across cultures and from biosocial perspectives. Lectures and readings use case materials from around the globe. We start by examining basic Darwinian concepts and explore childhood in a variety of cultural settings. The course is broken down into four major areas of interest: human evolution, sociology/social anthropology, biological anthropology, and developmental psychology. The goal is to form a biosocial and cross-cultural understanding of children. We place strong emphasis on how childhood, a uniquely human life stage, varies from culture to culture, and on issues relating to physical and social development of children. Examples come from both the north and the south, as well as from other species. Credit 3 units.

A&S SS

Anthro 3871. Darwinian Medicine

This course explores the fundamental relationship of evolutionary theory to the art and science of medicine, broadly defined. By considering human health and disease from an evolutionary perspective, modern medicine is gaining new insights into why diseases occur and how the human body is adapted to respond to them. Readings and lectures emphasize the impact of evolutionary causes rather than proximate causes of disease. This course introduces evolutionary perspectives on aspects of disease, while considering other aspects of common diseases including social, political, and cultural aspects of human health and illness. Students gain a deeper appreciation about human health and acquire information that may also help to make critical health care decisions. Prerequisites: Anthro 150 and Anthro 160, or permission of instructor. Credit 3 units.

A&S SS

Anthro 3872. Anthropology of Health and Healing

This course uses an anthropological perspective to examine global health and illness by focusing on systems, substances, and techniques of healing. The student is presented with information from a variety of cultures designed to introduce basic principles and methods used in the discipline of medical anthropology. Concepts fundamental to the study of health and disease in cross-cultural contexts are explored via case histories that facilitate a holistic and comparative understanding of the rich diversity of human experience. The relationship between biology and culture is emphasized, along with the manner in which politics, economics, and social structure influence the choices people make in their efforts to diagnose, treat, and cure illness and disease and to promote health. Credit 3 units.

A&S SS

Anthro 3882. Psychological Anthropology

The objective of this course is to introduce students to the central topics and methods of psychological anthropology. Psychological anthropology is concerned with the interplay of psychology and culture on both the individual and group levels. We look cross-culturally at such topics as child and adolescent development, religious experience, illness and healing, self and identity, gender and sexuality, reasoning and symbolism, and psychopathology. This class draws upon a range of sources, including ethnographies, psychoanalytic

theory, contemporary critical theory, and cross-cultural materials. Credit 3 units.

A&S SS

Anthro 393. Introduction to Archaeological Field Techniques

Same as ARC 393.

Introduction to archaeological fieldwork. Includes a variety of techniques employed by archaeologists, the underlying purpose of excavations, and the manner in which they are used to explore past societies. Field mapping and testing an archaeological site near Cahokia Mounds links this project to ongoing excavations with other institutions and relates it to the "Redefining Cahokia" project. Credit 6 units.

A&S SS FA SSP

Anthro 3932. An Introduction to Archaeological Site Survey

Same as ARC 3932.

The study and interpretation of the archaeological record begins in most instances with an archaeological survey. The purpose of this course is to provide students with an introductory level, hands-on experience to archaeological survey as practiced in eastern North America. This involves an introduction in the field to the various methods employed in the identification and mapping of archaeological sites. Students spend Saturdays in the field mapping and recording archaeological sites including the mapping of monumental earthworks such as those at the prehistoric site of Cahokia or nearby mound centers. Credit 3 units.

A&S SS FA SSP

Anthro 397. Proseminar: Issues and Research in Anthropology

Designed to introduce the student to current issues in anthropology and to research being carried out by faculty. Topics vary each year. Each departmental member addresses issues in his/her particular specialty. Required of all majors; may be taken before declaring major, and may be taken by non-majors. Credit 1 unit.

A&S SS FA SSP

Anthro 399. Undergraduate Teaching Assistant

Open to advanced undergraduates only. Usual duties of teaching assistant in laboratory or other selected courses. Prerequisite: Permission of instructor. Credit 3 units.

Anthro 3991. The Anthropology of Development

This course begins with the major development theories from the end of WWII to the present. A critical review of these theories reveals that the relationship between the rhetoric and practice of development is tenuous at best. Development practice is too often driven by relationships, attitudes, and motives that are seldom addressed in the discourse of international development. A second major theme is the role of anthropologists in the development project, and anthropological critiques of development. Special emphasis is placed upon contemporary approaches, especially ideas of participation and empowerment and the institution of NGOs (Non-Governmental Organizations). Prerequisite: Anthro 160BQ or permission of instructor. Credit 3 units.

A&S SS FA SSP

Anthro 3999. Class Mentor

Classroom instructional assistance through mentoring activities assigned by instructor. Limited to advanced undergraduates only. Permission of instructor required. Credit variable, maximum 3 units.

FA SSP

Anthro 401. Evolution of Non-Human Primates

Discussion and analysis of primate evolution with emphasis on comparative and functional anatomy

and primate paleontology. Prerequisite: permission of instructor. Credit 3 units.

A&S NS FA NSM

Anthro 403. Culture History of the Southwestern United States

Same as ARC 403, AMCS 403.

Origins and development of Zuni, Hopi, Navaho, and related peoples with reference to archaeological, ethnohistorical, and ethnographical data. Prerequisites: advanced undergraduate standing and Anthro 190BP or 310C, graduate standing, or permission of instructor. Credit 3 units.

A&S CD SS FA SSP

Anthro 4031. Gender and Labor Politics in East Asia

Same as IAS 4032, WGS 4032, East Asia 4032.

The course explores anthropological and historical approaches to work and labor through a focus on East Asian women's experiences of labor force participation. We ask how gender ideologies, kinship patterns, national politics, and global economic transformations shape the meaning of work and labor for different groups of women over time by analyzing the linked nexus of factory work, sex work, and service work. We examine how anthropologists, historians, and sociologists have studied issues of class, resistance, industrialization, and urbanization in the East Asian context. Readings focus on Japan, China, South Korea, Taiwan, and Hong Kong. Prerequisites: Anthro 160B or permission of instructor. Credit 3 units.

A&S SS FA SSP

Anthro 4032. The Body in East Asian Culture

Same as East Asia 544.

Anthro 4041. Islam and Politics

Same as JNE 4041, IAS 4041.

Blending history and ethnography, this course covers politics in the Islamic world in historical and contemporary times. Topics include history of Islam, uniformity and diversity in belief and practice (global patterns, local realities), revolution and social change, women and veiling, and the international dimensions of resurgent Islam. Geographical focus extends from Morocco to Indonesia; discussion of other Muslim communities is included (Bosnia, Chechnya, sub-Saharan Africa, United States). Credit 3 units.

A&S CD SS FA SSP

Anthro 4042. Islam Across Cultures

In this seminar we examine the variety of historical and contemporary ways of interpreting and practicing Islam, with special attention to issues of ritual, law and the state, and gender. Cases are drawn from Asia, Europe, Africa, and the Middle East, and students engage in fieldwork or library research projects. Credit 3 units.

A&S CD SS FA SSP

Anthro 405. Political Anthropology

Same as Lw St 405, IAS 405, IDEV 405.

Political systems of small-scale, peasant, and modernizing societies. Emphasis on social control; decision-making processes; and the social, economic, and ideological sources of political power. Credit 3 units.

A&S CD SD SS FA SSP

Anthro 4051. Democracy and Society

Same as Pol Sci 405.

A&S SS FA SSP

Anthro 406. Primate Ecology and Social Structure

Same as PNP 406.

Survey of the ecology, individual and social behavior, adaptations, and interactions of the major groups of primates. Emphasis on studies designed to examine the relationships among ecology, morphophysiology, and behavior. Methods used in collecting data on primates in the field. Prerequisite:

site: Anthro 150A or one 100-level biology course. Credit 3 units.

A&S NS FA NSM

Anthro 4060. Semantics

Same as Ling 4060.

A&S LA

Anthro 4091. Sexuality, Gender, and Change in Africa

Same as AFAS 409.

A&S SD SS WI FA SSP

Anthro 4112. Body and Flesh: Theorizing Embodiment

Same as WGS 4112.

This seminar explores a wide range of readings on “the body” as a site of theoretical analysis in social scientific and humanistic inquiry. Issues include: How do we think about the body as simultaneously material (flesh and bone) and constructed in and through social and political discourse? How do we think about the relationship between these contingent bodies and subjective experiences of “self” in various contexts? The course focuses upon the different ways in which these questions have been posed and engaged, and the implications of these formulations for the theorizing of human experience. Prerequisite: Anthropology 3201, or permission of instructor. Credit 3 units.

A&S SS

Anthro 412. Sociolinguistics: Ethnography of Communications

Same as STA 411, Ling 412.

How language interaction conveys subtle information about social situations and how purposes, motivations, sentiments, and communication networks influence the structure of language and speech. Prerequisite: 3 units of social science. Credit 3 units.

A&S SS FA SSP

Anthro 4121. Language and Power

Same as Ling 4121, PNP 4121.

Language is implicated in the constitution and exercise of social power in a multitude of ways. Researchers have often distinguished between a “micro-level” of social interaction and the “macro-level” of larger political formations in order to understand the relationship between language and social power. However, our goal is to focus on the dialectical interplay between the two levels of analysis by looking at topics such as honorification as encoded in language, the role of language in resistance and hegemony, as well as ritual and authority. Further, the class addresses the formation of collective identities and the legitimization of political projects such as state-formation on the basis of language. Credit 3 units.

A&S SS FA SSP

Anthro 4122. Language and Gender

Same as WGS 4122, PNP 4122, Ling 4122.

Within an overall approach to cultural analysis stressing the mediation of sociocultural phenomena through language, we focus on the particular case of gender. The class provides an overview of scholarship on language and gender, following the question of how culturally and socially varying constructs of gender are both constituted and expressed in language use. We examine how studies of language and power, politics, and stratification can inform our understanding of gender and also address methodological issues in the field. Credit 3 units.

A&S SD SS FA SSP

Anthro 4123. Argumentation Through Ethnography

Ethnography is the traditional mainstay of anthropological academic writing. Through ethnography, anthropologists do more than simply describe a culture or a group of people; rather, they organize

and present their field materials in particular ways in order to make intellectual, theoretical, and sometimes even political arguments. This seminar explores the different ways anthropologists have used ethnography to make intellectual claims and frame theoretical or practical arguments. The aim of the course is to help students develop critical reading skills for engaging ethnographic materials as well as to explore the ways in which ethnography, when done well, can be a persuasive and engaging means of academic argumentation. This course is intended as a sequel to Anthro 472. Prerequisite: Anthro 472 or permission of instructor. Credit 3 units.

A&S SS

Anthro 4124. Language and Politics

Language is a constitutive part of political processes. While many agree that language is used to symbolize or express political action, the main focus of this course is on how linguistic practice and ideology contributes to the creation of political stances, events, and spheres. Topics addressed include political rhetoric and ritual, the emergence of public spheres, discrimination, as well as ethnic conflict, nationalism, and colonialism. Credit 3 units.

A&S SD SS FA SSP

Anthro 4134. The AIDS Epidemic: Inequalities, Ethnography, and Ethics

Same as AFAS 4134, IAS 4134.

In the year 2000, HIV became the world’s leading infectious cause of adult death, and in the next 10 years, AIDS will kill more people than all wars of the 20th century combined. As the global epidemic rages on, our greatest enemy in combating HIV/AIDS is not knowledge or resources, but global inequalities and the conceptual frameworks with which we understand health, human interaction, and sexuality. This course emphasizes the ethnographic approach for cultural analysis of responses to HIV/AIDS. Students explore the relationship between local communities and wider historical and economic processes, and theoretical approaches to disease, the body, ethnicity/race, gender, sexuality, risk, addiction, power, and culture. Other topics covered include the cultural construction of AIDS and risk, government responses to HIV/AIDS, origin and transmission debates, ethics and responsibilities, drug testing and marketing, the making of the AIDS industry and “risk” categories, prevention and education strategies, interaction between biomedicine and alternative healing systems, and medical advances and hopes. Credit 3 units.

A&S SS

Anthro 4179. On Location: Exploring America

Anthro 4181. Comparative Methods in Physical Anthropology

Same as Anthro 4181.

Intensive study of theoretical concepts and statistical methods in research using comparative methods. Major emphasis on scaling (allometry) and phylogenetically independent comparisons and their application to questions of mammalian variation in life history, metabolism, brain size, and dentition. Prerequisite: one semester of statistics, 6 units of physical anthropology or biology, or permission of instructor. Credit 3 units.

A&S NS FA NSM

Anthro 4182. Field and Laboratory Methods in Primatology

This seminar focuses on ethological, ecological, and biological data collected on wild primate populations, the questions they address and their methods of analysis. The focus is on primate behavioral and biological monitoring, emphasizing hands-on techniques and practical applications. Credit 3 units.

A&S NS FA NSM

Anthro 419. Primate Behavior

Discussion and analysis of recent research on the social behavior of nonhuman primates. Data from both field and laboratory study. Prerequisite: Anthro 406, or permission of instructor. Credit 3 units.

A&S NS FA NSM

Anthro 4191. Primate Cognition

This course investigates historical and current views regarding the cognitive capacities of non-human primates, and the extent to which these abilities are shared with humans. Topics for this class include: social cognition, problem-solving, tool use, culture, communication, theory of mind, deception, self-recognition, imitation, and numerical cognition. The classes involve discussion and critical evaluation of theory and methods in this challenging and exciting area of primate cognitive research. Credit 3 units.

A&S NS

Anthro 4192. Comparative Juvenile Behavior

What makes young animals different from adult animals? Throughout this lecture- and seminar-based course, we explore the behaviors of young animals and consider what makes juveniles unique, and how behaviors specific to this time period may contribute in the transition to adulthood. Topics include: play behavior, teasing, rank and dominance, sex differences, affiliative bonds, adult encounters, and the evolution of the juvenile period. Credit 3 units.

A&S SS

Anthro 4202. Evolutionary Genetics

Same as Biol 4202.

This course examines the principles of evolutionary genetics as applied to complex characters such as morphology, behavior, life history, and disease. Mathematical models of quantitative inheritance and evolution are discussed. Special topics include kin selection, sexual dimorphism, and conservation genetics. Prerequisite: Anthro 150A or introductory biology. Credit 3 units.

A&S NS FA NSM

Anthro 4211. Paleoethnobotany and Ethnobotany

Same as ARC 4211.

Interrelationships between plants and people, especially in past societies. Recovery and analysis of plant remains from archaeological sites; interpreting subsistence and vegetation changes; medicinal, ritual, and technological uses of plants; plant domestication and agricultural intensification. Modern efforts to understand and preserve threatened traditional ethnobotanical practices. Prerequisite: Anthro 190BP or an introductory botany course, or permission of instructor. Credit 3 units.

A&S SS FA SSP

Anthro 4212. Advanced Methods in Paleoethnobotany

Advanced analytical techniques for the study of archaeological plant remains. Tools and methods for micromorphological recognition, including electron microscopy. Photomicroscopy at low magnification, management, tabulation, and reporting of data. Prerequisite: Anth 4211, or permission of instructor. Credit 3 units.

A&S SS FA SSP

Anthro 4213. Plants and American People: Past and Present

Same as AMCS 422, ARC 4213, Biol 4213.

This interdisciplinary course examines the relationship between plants and the American people. Topics include the natural diversity of plants used by Native Americans for food, fiber, and medicine; the significance of plants in the “Columbian Exchange” for the history of the U.S. and the economies of the Old World; Native American and Euro-American farming practices; modern agri-

business including transgenic crops; and the modern conservation movement in the United States. Several optional Saturday field trips are planned, in addition to a five-day field trip to the Southwest over spring break. Prerequisite: Junior standing or above. Credit 3 units.

A&S SS FA SSP

Anthro 4214. The Archaeology of Food and Drink

Same as ARC 4214.

Studies of past human diets have moved beyond analyses of animal bones and seeds to encompass new theoretical goals and innovative analytical techniques. In this seminar-style course, students explore methods of understanding food-related social interactions such as evidence including residues, ancient DNA, isotopes, and trace elements, along with more traditional artifacts and archaeobotanical and zooarchaeological remains. By examining case studies from around the world, we evaluate the current state of research attempting to integrate the biological and cultural aspects of eating and drinking. Credit 3 units.

A&S SS

Anthro 4221. Biological Basis of Human Behavior

Graduate-level equivalent of Anthro 221B. Students enrolled in Anthro 4221 are required to write a term paper. Credit 3 units.

A&S NS FA NSM

Anthro 4242. Social Movements

Same as IAS 4242.

From fundamentalists to eco-warriors to high-society elites, human beings are social actors who produce and invoke cultural imaginaries to mobilize people and resources and sustain political engagement. This seminar examines such movements — forms of dynamic social organization that emerge to contest or transform the distribution of material, symbolic, or institutional power. Sometimes operating within formal institutions, but often transgressing or transforming them, movements are useful for studying meaning and power as produced and negotiated through multi-layered processes. The seminar examines approaches to collective action (conjunctural mobilization, consciousness, and resistance, opportunities and interests); overlapping identities (race, class, gender, ethnicity, religion, territory); and spaces of political contest (public discourse, citizenship, resource allocation, leader formation, legal structures, violence, political subjectivity, translocal networks). Ethnographic cases draw on nationalist and women's movements, indigenous peoples, Madrassah schools, messianisms, religious fundamentalism, global activism, racist separatisms, and rural peasant movements. Credit 3 units.

A&S CD SD SS FA SSP

Anthro 4253. Researching Fertility, Mortality, and Migration

Same as IAS 4253.

Students undertake research projects centering on the most fundamental demographic processes — fertility, mortality, and migration. The first section covers basic demographic methodology so that students understand how population data is generated and demographic statistics analyzed. Course readings then include seminal theoretical insights by anthropologists on demographic processes.

Meanwhile, students work toward the completion of a term paper in which they are expected to undertake some original research on a topic of their choice (e.g., new reproductive technologies; cross-cultural adoption; ethnicity and migration). Each assignment in this course is a component of the final term paper. Credit 3 units.

A&S SS WI

Anthro 4261. Systems of Inequality

Same as Pol Sci 4263, ISA 4261, STA 4261.

This course examines systems of inequality in a variety of world regions, including the United States, and includes analysis of their causes and effects. Economic class, gender, ethnicity, and race are among the types of social stratification discussed. The course focuses on theories of stratification along with case studies, including those focusing on social capital, individual rationality, biological determinism, social construction, cultural capital and social reproduction, and economic globalization. The course is designed to maximize student participation. This course is not open to students who have taken Anthro 3261 Inequality, Hierarchy and Difference. Credit 3 units.

A&S SD SS WI FA SSP

Anthro 4281. Ecological Anthropology

Same as EnSt 430.

An exploration of the adaptive aspects of human culture. Foci include ecological analogy, optimization models, population and food production, social and spatial aspects of "traditional" farming, ethnicity and food production, and comparison with Marxist approaches. Prerequisites: Graduate standing, Anthro 361, or permission of instructor. Credit 3 units.

A&S SS FA SSP

Anthro 4282. Political Ecology

Same as IAS 4282.

An exploration of how the interactions between culture and environment are mediated by local, national, and global politics. Topics include overpopulation, agricultural intensification, Green Revolution, biotechnology, corporate agriculture, green movements, and organic farming. Each student prepares an in-depth research paper that may be presented to the class. Prerequisites: Graduate standing, Anthro 361, or permission of instructor. Credit 3 units.

A&S SS FA SSP

Anthro 4283. Topics in Comparative Politics: Separatist Politics

Same as Pol Sci 428.

A&S SS WI

Anthro 4291. The Biological Basis for Human Behavior

Critical consideration of information bearing on current controversies and ideas concerning antecedents of human behavior, examined from biological and evolutionary perspectives. Lectures present comparative information on the behavior and biology of our closest relatives, the nonhuman primates. Prerequisite: 6 units of biology, psychology, or anthropology. Credit 3 units.

A&S NS

Anthro 4302. Contemporary Issues in Cognitive Development

Same as L33 Psych 4301.

A&S SS WI FA SSP

Anthro 4321. History of Physical Anthropology

The history of physical (or biological) anthropology traced from Darwin's time to the present. Factors that influenced major theories and subfields of physical anthropology discussed along with current directions. Credit 3 units.

A&S SS FA SSP

Anthro 4322. Brave New Crops

Same as AMCS 4322.

This is a graduate-level version of Anthro 3322. Credit 3 units.

A&S SS

Anthro 434. Behavioral Research at the St. Louis Zoo

Students conduct research at the St. Louis Zoo. Training in designing of projects and analysis and interpretation of data. May be repeated for credit.

Prerequisite: permission of instructor. Credit variable, maximum 6 units.

A&S NS WI FA NSM

Anthro 4341. Behavioral Research at the Duke University Primate Facility

Students conduct research at the Duke University Primate Facility. Training in designing of projects and analysis and interpretation of data. A \$500 fee is charged to cover room and board in Durham, N.C. Prerequisite: Permission of instructor. Credit 5 units.

Anthro 4361. Culture, Power, and the State

Same as Lw St 4361.

This seminar explores the relationships among culture, power, and state formation through a close reading of theoretical and ethnographic texts. We examine how distinct theoretical approaches (Marxism, structuralism, post-structuralism, and feminism) have defined and analyzed these contested terms. Instead of assuming that culture, power, and the state are given concepts, we map their changing constructions over time. How do cultural beliefs and outlooks organize the production, distribution, and even definition of power? How does the State structure and maintain power relations? How do state institutions, nationalist ideologies, and ethnic relations shape subjectivities, identities, and cultural outlooks? Developing insights from Marx and Lenin, Weber, Gramsci, Althusser, Raymond Williams, Stuart Hall, and Foucault, we compare current ethnographic works and their applications of such theories. Students are asked to think about and use these theories in relation to their own work. Credit 3 units.

FA SSP

Anthro 4362. Local Genders, Global Transformations

Same as IAS 4362, STA 4362, WGS 4362.

This course examines the dynamic relationship between gender and other social, economic, biological, and political processes. The course compares a variety of theoretical frameworks proposed by anthropologists, as well as Foucault, Butler, Carby, Laquer, and Engels. Using ethnographic and historical materials, students explore how shifts in communities' notions of gender, femininity, and masculinity are connected to larger forces, including shifts in the marketplace, global cultural flows, reproductive and sexual technologies, social movements, racial and ethnic hierarchies, international declarations, and HIV/AIDS and STDs. The course also considers ways in which gender studies and feminism have influenced anthropology. Prerequisite: Anthro 160B, or permission of instructor. Credit 3 units.

A&S SS FA SSP

Anthro 4363. Sex, Gender, and Power

Same as WGS 4363.

Students consider various theoretical approaches to understanding the intersection of biological sex, gender, sexuality, and power. Key questions revolve around the processes through which biological categories of sex become socially significant and interact with specific regimes of power (e.g., the state, family, religion, medicine, and science) to create systems of hierarchy, domination, resistance meaning, identity, and affection. The course begins with an overview of earlier anthropological works and other social theorists, mapping changes and debates surrounding notions of sex gender, and power. Concentrating of influential contemporary theorists such as Foucault, Butler, Stoler, and Fausto-Sterling, students explore anthropological critiques and applications of their ideas. The course primarily focuses on socio-cultural anthropology, but also examines linguistic, physical, and archaeological perspectives. Credit 3 units.

A&S SS

Anthro 441. Social Statistics I*Same as STA 441.***A&S SS FA SSP****Anthro 442. Social Statistics II***Same as STA 442.***A&S SS FA SSP****Anthro 4451. Research Methods in Anthropology**

As a critical examination of the nature of evidence and explanation within anthropology, this course provides an introduction to a broad range of methods essential for collecting ethnographic data in a systematic manner. Interviewing skills are developed as a basis for using methodologies such as life histories, free listing, pile sorting, rank ordering, social mapping, and decision tree modeling. Issues of qualitative data analysis are discussed in conjunction with software packages designed for organizing ethnographic information. Credit 3 units.

A&S SS**Anthro 4466. Religion and Media**

Instead of fading away in a process of modernization, religious traditions remain crucially important in the contemporary world. One key reason for this is the convergence of such traditions with modern systems of mass media. Based on an introduction to anthropological approaches to mass media, this class comparatively examines how modern mass media have become part of religious practice in diverse settings. Special attention is paid to how the intersection of modern mass media and religious traditions shape collective identities and political processes. Credit 3 units.

A&S SS**Anthro 4481. Writing Culture***Same as STA 4481.*

Different ways of writing about people, culture, and society in past and present times. Readings include anthropological works as well as works of fiction that represent people and the times, places, and circumstances in which they live. Students conduct and write about their own ethnographical observations. Credit 3 units.

A&S SS, WI FA SSP**Anthro 4482. Current Issues in Social Theory***Same as STA 401.***A&S SS FA SSP****Anthro 4491. Seminar: Law, Language, and Culture***Same as STA 410.***A&S SS FA SSP****Anthro 4492. Anthropology of Nationalism**

This class offers an overview of approaches to the study of nationalism from an anthropological perspective. Departing from a discussion of various "mainstream" theories of nationalism, the course then critically engages these approaches through confronting them with recent anthropological readings and case studies dealing with this crucial contemporary phenomenon. A main focus is a re-consideration of the linkages between language and the spread of nationalism. Credit 3 units.

A&S SS FA SSP**Anthro 4493. Diasporas and Transnationalism***Same as IAS 4493.*

This class provides an introduction to the study of modern diasporas and the transnational processes in which they are situated from an anthropological perspective. The ethnographic emphasis is on South Asian diasporas, but the readings also involve other examples. Topics include the changing historical conditions and processes responsible for the creation of contemporary diasporas, the issue of identity formation among diasporic populations as well as the question of how diasporic communities challenge as well as contribute to our under-

standing of culture, nationalism, and globalization. Credit 3 units.

A&S SS FA SSP**Anthro 4513. Contemporary Issues in the Developing World***Same as STA 4512, IAS 4513.*

The idea of development has powerfully shaped the global scene over the last half century. It invokes a world in which certain areas are understood as models of progress, while others are deemed to have stagnated or fallen behind. How has this geography of uneven distribution and unequal resources come into existence? What are the assumptions that have made it possible? What does it actually mean in practice to be "third world," "underdeveloped," "less developed," or "developing"? This course engages these questions from a variety of perspectives, ranging from travel narratives and novels to film and social theory. We explore the politics and poetics of development in the context of Africa, critically examining the tensions between theory and practice in a range of case studies—from "Tropical Gangsters" to "The Road to Hell." Open to freshmen and sophomores with permission of instructor. Credit 3 units.

A&S SS FA SSP**Anthro 4517. Anthropology and Development***Same as IAS 4517, LatAm 4517.*

This course discusses anthropological theories and methods for studying processes of economic and political change and intervention lumped under the term development. Starting from historical consideration of anthropology's uncomfortable proximity to development as a neo-colonial or imperial project, we engage development through debates among neo-Marxist, discursive, applied, postcolonial, and postmodern perspectives. Case studies, theoretical discussions, and methodological exercises draw on historical treatments, primary sources of development practitioners, and ethnographic studies of development, its origins, and its effects drawn from Latin America, Asia, Africa, and northern Europe. Credit 3 units.

A&S SS WI**Anthro 455. Archaeological Research Techniques***Same as ARC 455.*

Discussion of dating techniques (C-14, K-Ar, U-Th, ESR, PSL, TL, dendrochronology, etc.); lithic dating analysis; magnetic survey and dating; remote sensing; elemental and residue analyses; and other technical methods employed in archaeological field research. Prerequisite: 3 credits in archaeology or permission of instructor. Credit 3 units.

A&S SS FA SSP**Anthro 4561. Ceramic Analysis***Same as ARC 4561.*

Method, techniques, and models for analyzing prehistoric ceramics. Students conduct hands-on analyses of collections from Cahokia Mounds and the St. Louis region. Prerequisite: Anthro 314, graduate standing, or permission of instructor. Credit 3 units.

A&S SS FA SSP**Anthro 4562. Artifact Analysis: Mississippian Cultures***Same as ARC 4562.*

The purpose of this course is to provide students with an introductory, hands-on experience of the methods employed in the analysis of archaeological materials common to the Mississippian culture. Students conduct class projects based on collections from Cahokia Mounds and the St. Louis region. Prerequisite: Anthro 314 or equivalent, or graduate standing, or permission of instructor. Credit 3 units.

A&S SS FA SSP**Anthro 4564. Archaeobotanical Analysis***Same as ARC 4564.*

Advanced laboratory and analytical techniques. Prerequisite: Anthro 4211 or permission of instructor. Credit 3 units.

A&S SS FA SSP**Anthro 458. Craniofacial Biology**

Growth, morphology, and function of craniofacial structures in primates. Emphasis on biological background of current research problems concerning variation among living primates and the evolution of primates. Topics include the biomechanics of mastication; relationship between dental histology and life history; and relative effects of size, function, and phylogeny on variation. Prerequisite: Anthro 150A and one additional course in physical anthropology. Credit 3 units.

A&S NS FA NSM**Anthro 4581. Principles of Human Anatomy and Development***Same as Bio 4580, Biol 4580.*

This course is designed for both undergraduate and graduate students in the anthropological, biological, and/or premedical sciences who wish to learn about human anatomy from various evolutionary, functional, developmental, and clinical perspectives. Lectures emphasize the organizational and developmental principles of various organ systems of the human body. The course also makes use of our extensive anatomy museum of labeled dissected human specimens as well as our cast collections of numerous specimens from the human fossil record where appropriate. Frequent use of X-rays, CT, and MRI scans also are used to help students visualize human anatomy from a number of different imaging modalities. Prerequisites: Undergraduate or graduate students in the anthropological, biological, and/or premedical sciences who have had at least one course in physical anthropology and/or biology, or consent of instructor. Credit 3 units.

A&S NS FA NSM**Anthro 459. Human Osteology**

Analysis of skeletal material recovered in human paleontological and archaeological excavations. The development of bone and major diseases that affect skeletal structure. Prerequisite: permission of instructor. Credit 3 units.

A&S NS FA NSM**Anthro 4591. Human Functional Morphology**

A detailed consideration of the biological basis for variation in recent and past human skeletal anatomy as a framework for the interpretation of prehistoric human skeletal and fossil remains. Emphasis is placed on the structure, development, and degeneration of bones and joints, the soft tissues that impinge upon individual bones, and the biomechanical patterns relating to bone and joint structures. Prerequisites: Anthro 3661, 459 or permission of instructor. Credit 3 units.

A&S NS**Anthro 4622. Anthropological Demography: Theories, Methods, and Applications**

Anthropological demography is an interdisciplinary endeavor that developed in response to the need to incorporate cultural context into the analysis of population data. The course introduces some fundamental demographic concepts (e.g., vital rates, natural fertility, and demographic transition theory) and provides students with the foundations for demographic literacy through an exploration of basic quantitative methods and means of presentation. The course then deals with an anthropological critique of demographic assumptions, then shifts to a demographic critique on the applicability of anthropological knowledge. The final and most substantial part of the course is devoted to an intensive reading of seminal works in the field. Credit 3 units.

A&S SS WI

Anthro 4661. Historical Archaeology

Same as ARC 4661.

This course focuses upon the methods and techniques employed in historical archaeology. We include method of integration of written records through contextual studies, discussion of specific artifact type identification techniques, and seminar type treatments of other aspects of the field. The class includes some hands-on lab work, working primarily with materials from the first American fort west of the Mississippi (Fort Belle Fontaine) and two Civil War period mansions. Prerequisite: 3 credits of archaeology or permission of instructor. Credit 3 units.

A&S CD TH FA SSP

Anthro 4662. American Indian Societies, Cultures, and Values

Same as AMCS 466.

Anthro 4682. Ethnoarchaeology

Same as ARC 4682.

Theories, methods, and techniques applied by archaeologists to contemporary societies and materials to aid their understanding of extinct societies. Analysis of ethnographic research in both the Old and New Worlds. Participation with Professors Watson, Browman, and Fritz are included in relevant topics. Prerequisites: Anthro 160B or 190BP, and permission of instructor. Credit 3 units.

A&S CD TH FA SSP

Anthro 472. Social Theory and Anthropology

Same as MLA 472, Lw St 472, STA 4721.

A seminar on social theory and its ethnographic implications. Course combines major works of modern social theory, including Marx, Weber, and Durkheim, with current work by contemporary anthropologists, such as Clifford Geertz, Eric Wolf, Marshall Sahlins, and Fredrik Barth, and ethnographers from related disciplines, such as Pierre Bourdieu and Paul Willis. Prerequisite: Previous anthropology coursework or permission of instructor. Credit 3 units.

A&S SS FA SSP

Anthro 4752. Practicing Archaeology

Same as ARC 4752.

Applied archaeology is where most graduating archaeology students get their first job, and where most American field work is now found. This course introduces the student to proper practices of cultural resource management and contract archaeology. Among the issues covered are pragmatic approaches to funding agencies, compliance with regulations such as NAGPRA, and professional ethics. These are covered via the writing-intensive approach, because one of the skills most sought by project managers and employers is writing competence. Prerequisite: Junior standing. Credit 3 units.

A&S SS WI

Anthro 4761. The Pleistocene Peopling of Eurasia

Same as ARC 4761.

The paleolithic archaeology, human paleobiology, and paleoecology of the geographical expansions and adaptations of Eurasian humans through the Pleistocene. Prerequisite: Anthro 150A or 190B. Credit 3 units.

A&S SS FA SSP

Anthro 4762. The Neanderthal Legacy

A detailed consideration of the Middle and Late Pleistocene patterns of human biological evolution relating to the origins and evolution of late archaic humans (including the Neanderthals) and the emergence of modern humans. Prerequisite: Anthro 367 or permission of instructor. Credit 3 units.

A&S NS WI FA NSM

Anthro 477. African Prehistory

Same as AFAS 477, ARC 477.

Pathways to food production in Africa: Late hunter-gatherers and early pastoralists, their interactions and intersections with complex societies of the Nile. A survey designed for juniors and seniors in a seminar setting. Credit 3 units.

A&S SS FA SSP

Anthro 479. Climate, Culture, and Human History

Same as ARC 479, EnSt 479.

Using a seminar format, this course examines the temporal, geographical, and environmental aspects of past climate changes, and by using specific examples, explores how climate changes may have affected the evolution of human culture and the course of human history. Archaeological and historical examples from the Americas, Africa, Asia, Europe, and the Near East are used to explore if or how significant events in human history have been influenced by changes in climate. Credit 3 units.

A&S NS FA SSP

Anthro 4791. Archaeological Study of Social Complexity

Same as ARC 4791.

A hallmark of anthropological theory is the idea that human societies evolve toward greater complexity or higher levels of organization through time. Yet accurately defining complexity or organization is such a difficult and frustrating undertaking that many people give up and fall back on an intuitive understanding, similar to Supreme Court Justice Potter Stewart's famous definition of pornography: "I know it when I see it." But what exactly does it mean to be socially complex? How does complexity in human societies emerge and how is it perpetuated? How can we infer social complexity from the archaeological record? In this seminar we examine theoretical and methodological aspects of social complexity as investigated by archaeologists. By means of case studies drawn from around the globe and ranging from the earliest humans to the recent past, we seek to define, describe, and understand the concept of social complexity and its manifestations in diverse societies at different times. Credit 3 units.

A&S SS

Anthro 4802. Theories and Practice of Landscape Archaeology

The study of "landscapes" as a particular framework for understanding the archaeological record has become increasingly widespread in the discipline today. Yet the theoretical background for defining landscapes is commonly disconnected with the actual practical application of landscape archaeology. What exactly do we mean by landscape archaeology, what is its utility, and how do contemporary methods of analysis and interpretation change the way we consider archaeology through this conceptual paradigm? This course explores the theoretical basis and current archaeological approaches to landscape and address its distinction to, and overlap with, other prevalent concepts such as environment, ecology, place, and space. The course also places focus on concrete methodological and practical approaches that differentiate landscape archaeology from other approaches—as well as illustrate their points of convergence. Credit 3 units.

A&S SS

Anthro 4803. Geographic Information Systems (GIS), Landscape, and Spatial Analysis in Archaeology

Same as AMCS 4803, ARC 4803.

The aim of this course is to learn to analyze archaeological data in terms of its spatial layout, geography, ecology, and temporal dynamics, using Geographic Information Systems and associated

computer modeling techniques. A focus is placed on the relationship between natural environments, cultural geography, and the mapping of archaeological landscapes, and on the archaeologist's ability to accurately recover, reconstruct, and analyze this relationship in a virtual environment. Credit 3 units.

A&S SS

Anthro 481. Zooarchaeology

Same as ARC 481.

Methods and techniques of analysis of faunal remains recovered in archaeological context, including aging, sexing, and the study of cultural modification of archaeological faunas. Prerequisite: Any advanced course in archaeology and permission of instructor. Credit 3 units.

A&S SS FA SSP

Anthro 4871. Darwinian Medicine

This is a graduate level equivalent of Anthro 3871. Credit 3 units.

A&S SS

Anthro 4881. Medicine and Anthropology

Explores the fundamental relationship of anthropology to the art and science of medicine. Emphasis on impact of anthropology on current modes of biomedical research; alternative systems of health and healing; role of anthropologist in biomedicine and public health; critical medical anthropology; anthropology and epidemiology. Prerequisite: junior standing. Credit 3 units.

A&S SS FA SSP

Anthro 4882. Anthropology and Public Health

Same as IAS 4882.

Anthropological approaches to public health practice and research; role of anthropology in public health systems; cross-cultural public health research; community vs. institutional bases of public health advocacy. Credit 3 units.

A&S SS FA SSP

Anthro 4883. The Political Economy of Health

This course reviews social science contributions to understanding health as a function of political and economies influences. Considers the ways in which personal health is affected by macrosocial processes. Examines effects of globalization, international development, and political instability on the health of individuals. Examples drawn from the United States and international contexts. Prerequisite: junior standing or above. Credit 3 units.

A&S SS FA SSP

Anthro 489. Seminar: Pathways to Domestication

Same as AMCS 4899, ARC 489.

Survey of the evidence of the domestication of plants and animals, focusing on processes leading to domestication, and on the recognition of pristine features of domestication in the archaeological record. Prerequisite: one 300- or 400-level course in archaeology. Credit 3 units.

A&S SS FA SSP

Anthro 4892. Hunter-Gatherer Socioeconomic Variation

Same as ARC 4892.

This class explores the nature and extent of variation in hunter-gatherer socioeconomic systems as documented in the literature on recent hunter-gatherers, and in the archaeological record of the past 20,000 years. We discuss Woodburn's concept of delayed return hunter-gatherers, Testart's writing on hunter-gatherer socioeconomic organization, and archaeological concepts of simple and complex hunter-gatherers. We examine case studies of both delayed and immediate return hunter-gatherers from the Americas, Asia, Africa, and Australia, and emphasize understanding underlying reasons for differences between groups, and implications of

differences for patterns of cultural change, including the adoption of food production. Credit 3 units.

A&S SS FA SSP

Anthro 4893. Pastoral Nomads of the Past
Same as ARC 4893.

The archaeology of nomadic herders or pastoralists of Africa, Asia, and South America is the focus of this seminar. Cattle herders of Africa, horse and camel-based nomads of Asia, and llama herders of the Andes, are famous for their mobility, effective use of arid and mountainous lands, and distinctive and varied social organization and material culture. Nomads are known in many regions for long distance trade, warfare, and as agents of widespread political and religious change. We examine issues such as the ecological background to mobility, nomads as early food producers, the environmental impact of nomadic societies, nomads and resilience, factors that pattern settlement structure and material culture of nomads, rock art, archaeological recovery, ancient nomadic states, and gender issues in recent pastoral societies. Credit 3 units.

A&S SS

Anthro 490. Anthropological Research

Designed to give undergraduates research experience in various subdisciplines of anthropology. May be taken more than once for credit. Prerequisite: Permission of faculty member under whom the research will be done. Credit variable, maximum 3 units.

A&S SS FA SSP

Anthro 491. Advanced Anthropological Research

Limited to those students who have successfully completed Anthro 490, and have a qualifying continuing research project. Prerequisite: Anthro 490 and permission of the faculty member who will supervise the continuing research project. Credit variable, maximum 3 units.

A&S SS FA SSP

Anthro 4951. Senior Honors Research

Limited to students who have qualified for the Anthropology Honors program, and who are conducting research for an Honors thesis. Prerequisite: permission of the Anthropology faculty member supervising the Honors research, and concurrent filing of notification with the anthropology senior honors coordinator. Credit variable, maximum 3 units.

FA SSP

Anthro 4961. Senior Honors Thesis

Limited to students who have qualified for the Anthropology Honors program, and who are actively engaged in writing a senior Honors thesis. Prerequisite: permission of the anthropology senior Honors coordinator. Credit variable, maximum 3 units.

FA SSP

Anthro 4999. Capstone Experience

The Department of Anthropology offers several options for completing a capstone experience, which is recommended by the College of Arts & Sciences. One option is for students in any 400-level course in the department to secure permission of the instructor to simultaneously enroll in Anthropology 4999. The instructor and students develop an individualized plan for expanding the normal content of the selected 400-level course into a capstone experience. Prerequisite: junior or senior standing. Enrollment requires permission of the department and the instructor. Credit 1 unit.

Applied Statistics and Computation

Director, Associate Professor of Political Science, and Professor of Law

Andrew D. Martin
(Political Science and Law)
Ph.D., Washington University

Professors

Steven M. Fazzari
(Economics)
Ph.D., Stanford University

Robert Parks
(Economics)
Ph.D., Purdue University

Richard J. Smith
(Chair, Anthropology)
Ph.D. Yale University

Edward L. Spitznagel
(Mathematics)
Ph.D., University of Chicago

Michael J. Strube
(Psychology)
Ph.D., University of Utah

William F. Tate
(Chair, Education)
Ph.D., University of Maryland, College Park

Joseph S. Ullian
(Philosophy)
Ph.D., Harvard University

Associate Professor

Katherine Barnes
(Law)
Ph.D., University of Minnesota
J.D. University of Michigan

Assistant Professors

Donald Nichols
(Economics)
Ph.D. Stanford University

Carol M. Woods
(Psychology)
Ph.D., University of North Carolina–Chapel Hill

Adjunct Professor

Donald E. Strickland
(Social Thought and Analysis)
Ph.D., Tulane University

Over the past 20–30 years, many areas of social science and biology have become increasingly dependent on quantitative methods and the statistical analysis of data. Using real-world data to answer complex questions in the social sciences requires the integration of many skills.

The Program in Applied Statistics and Computation is designed to meet the needs of undergraduate and graduate students desiring an intensive exposure to statistical methods and inference with an emphasis on application. Social science data are often de-

A&S Requirements for College of Arts & Sciences students (for more information, see page 27).

CD = Cultural Diversity

LA = Languages and the Arts

NS = Natural Sciences and Mathematics

QA = Quantitative Analysis

SD = Social Differentiation

SS = Social Sciences

TH = Textual and Historical Studies

WI = Writing-Intensive Course

FA Requirements for School of Art students (for more information, see page 305).

AH = Art History

Comp = English Composition

Lit = Literature

NSM = Natural Sciences or Mathematics

SSP = Social Sciences or Philosophy

scribed as “messy.” The challenges of producing a result accepted by scientists often involve judgments about how to quantify variables that are not inherently quantitative. Social scientists must also frequently contend with missing data, and with data that violate the mathematical assumptions of statistical methods commonly presented in introductory courses. Courses in the Program in Applied Statistics will emphasize the analysis of data in the context of such problems. Most courses will involve the use of statistical software. Courses in the program are designed to provide students with sophisticated statistical tools without calculus or matrix algebra prerequisites.

Course Designations: Many of the courses offered by the Program in Applied Statistics and Computation are cross-listings from other departments. Some courses are offered by more than one department and, in that case, are designated with a letter suffix. For example, 330A, 330B, and 330C are cross-listings from three different departments, any one of which would fulfill the first semester requirement for the Applied Statistics Minor. **The Minor:** Most students interested in completing the minor will be considering a career in social science or biological research.

The minor in Applied Statistics and Computation requires 15 credits (five courses), plus a research project (which normally will be completed in the student’s major department). For more information about the minor, consult the program Web site: <http://stats.wustl.edu>.

Undergraduate Courses

ASTAT 330A. Introduction to Applied Statistics

ASTAT 330B. Introduction to Applied Statistics

Same as Math 320.

A&S NS QA **FA** NSM

ASTAT 330C. Introduction to Applied Statistics

Same as STA 441.

ASTAT 350A. Intermediate Applied Statistics: Linear Models

Same as STA 442.

A&S SS **FA** SSP

ASTAT 350C. Intermediate Applied Statistics: Linear Models

Same as Econ 413.

A&S FSS **FA** SSP

ASTAT 350D. Intermediate Applied Statistics: Linear Models

Same as Pol Sci 581.

ASTAT 361A. Philosophy of Science

Same as Phil 321G.

A&S TH **FA** SSP

ASTAT 420. Categorical Data Analysis

Same as Psych 4201.

This course represents an introduction to methods for analyzing categorical data. Methods covered include those for contingency-table data (i.e., all variables are nominal or ordinal), as well as regression models for nominal and ordinal outcome variables. Although distribution theory and maximum likelihood are introduced as needed, the emphasis is on learning when and how to apply the methods, and how to interpret the results. Prerequisite: ASTAT 350 or equivalent. Credit 3 units.

A&S SS

ASTAT 430. Multilevel Modeling

Same as Pol Sci 4301.

Multilevel models (also called hierarchical, random-effects, and mixed-effects models) are an increasingly important statistical tool in many social sciences. Examples include education (data on students within schools), economics (panel data), political science (data characterized by states and years), law (police stops categorized by date, location, and ethnic group), medicine (meta-analysis), public health (small-area estimation), social work (studies of individuals within housing areas), and many other areas. This course covers setup, inference, and checking the fit of multilevel models. Computation using the software packages R and Bugs and applications in social science and elsewhere. By the end of the course, you should be able to understand multilevel models and apply them creatively to your data-analysis problems. Prerequisite: ASTAT 350 or equivalent. Credit 3 units.

A&S NS

ASTAT 440. Factor Analysis and Related

Methods

Same as Psych 4171.

In factor analysis, a “factor” represents an unobservable construct hypothesized to give rise to observed variables (e.g., responses to questionnaire items). This course introduces popular factor-analytic models and methods for fitting them to data, in both exploratory and confirmatory contexts. Models for (approximately) continuous observed data are covered, as well as those for categorical observed data, including a few models and methods of item response theory. Application and interpretation are emphasized, with statistical theory introduced as needed. Use of one or more computer programs will be required (prior experience with factor-analytic software is useful but not assumed). Prerequisite: ASTAT 350 or equivalent. Credit 3 units.

A&S NS

Archaeology

Chair

David L. Browman, Professor
(Anthropology)
Ph.D., Harvard University

Endowed Professor

Susan Rotroff

Jarvis Thurston and Mona Van Duyn
Professor in the Humanities
(Classics)
Ph.D., Princeton University

Professors

Gayle J. Fritz

(Anthropology)
Ph.D., University of North Carolina–Chapel Hill

T. R. Kidder

(Anthropology)
Ph.D., Harvard University

Fiona Marshall

(Anthropology)
Ph.D., University of California–Berkeley

Sarantis Symeonoglou

(Art History and Archaeology)
Ph.D., Columbia University

Assistant Professors

Gwen Bennett

(Art History and Archaeology)
Ph.D., University of California–Los Angeles

Michael Frachetti

(Anthropology)
Ph.D., University of Pennsylvania

Jennifer Smith

(Earth and Planetary Sciences)
Ph.D., University of Pennsylvania

Senior Lecturer

John Kelly

(Anthropology)
Ph.D., University of Wisconsin–Madison

Professor Emerita

Patty Jo Watson

Edward Mallinckrodt Distinguished
University Professor Emerita
Ph.D., University of Chicago

Archaeology provides the opportunity to investigate the material remains of past societies and cultures and the methods by which they are recovered, analyzed, interpreted, and reconstructed.

Archaeologists investigate the entire human past from the first evidence of tool use 2.5 million years ago to historic studies of the late 19th and early 20th centuries. To provide you with a comprehensive understanding of archaeology, we emphasize two approaches at Washington University: the humanistic, which is represented by classical archaeology, and the social scientific, which is represented by anthropological archaeology.

As an archaeology student, you will encounter a range of specialties within the field, such as historical archaeology, Greek and Ro-

man archaeology, ethnoarchaeology, zooarchaeology, paleoethnobotany, geoaerchaeology, geographic information systems (GIS), and radiometric dating. The anthropological archaeology option focuses on biologically based studies (paleoethnobotany and zooarchaeology) to study such questions as the origins of food production. The classical archaeological program capitalizes on ancient documents in investigating the more recent human past.

While acquiring basic training in archaeology, you may choose to concentrate on a specific region, such as the eastern woodlands of the United States, the Andes, Africa, Central Asia, China, or the Mediterranean world. Ancient and/or modern languages, as well as history and art, are essential for some fields of study. A specialized set of courses can be designed in conjunction with your adviser.

The hands-on experience of archaeological fieldwork is particularly attractive to many students. As an undergraduate major in archaeology, you will complete at least one supervised field project, which is selected to best meet your long-term goals. Most research projects are small, which allows you to work closely with faculty and staff. Recently, students have worked at excavations in such diverse areas as Ireland, France, Kazakhstan, Greece, Israel, China, Bolivia, the U.S. Southwest, and Cahokia, Illinois.

You also may participate in an exchange program with the University College–London, work with funded research programs on campus, or intern at a private firm to gain off-campus experience in contract archaeology.

Archaeology faculty members are involved in research projects in many regions, such as China, Central Asia, Africa, Greece, Egypt, Peru, New Mexico, and Louisiana. Undergraduate participation in research is encouraged for students working on Senior Honors theses.

With a degree in archaeology, you can work in academia, private consulting firms, government compliance agencies, and museums. Academic and museum positions generally require graduate-level training.

The Major: Archaeology majors must complete Anthro 190B and ARC 200C, plus 21 advanced units at the 300 level or above, with no more than 6 units of independent study courses. The 21 advanced units must be distributed such that no more than 15 units toward the major come from one department. Students also must complete eight weeks or the equivalent of supervised archaeological fieldwork.

The Minor: To minor in archaeology, you must complete 15 units, of which at least 12 must be in courses at the 300 level or above.

To major or minor in archaeology, you may select from the archaeology, anthropology, classics, and art history courses listed below, plus any additional courses approved by the department staff.

Senior Honors: As an archaeology major, you are encouraged to work for Senior Honors, for which you may apply in your junior or senior year. Acceptance into the program is based on your previous academic perfor-

mance and a proposal to a faculty member who agrees to supervise your Honors research. You must complete Honors thesis research (ARC 492-493) and an Honors thesis, which is evaluated by a three-member faculty committee.

Undergraduate Courses

ARC 130. Freshman Seminar

Same as Anthro 130.

A&S SS FA SSP

ARC 190B. Introduction to Archaeology

Same as Anthro 190B.

A&S SS FA AH

ARC 200C. World Archaeology

Same as Art-Arch 200C, Classics 200C, Anthro 209C, Anthro 209.

A course designed to introduce students to the most important archaeological sites of the world that have been excavated in the past 250 years. There are many guest lecturers, all working archaeologists from the St. Louis community and occasionally from the outside as well. In some cases, we prefer to hear from lecturers who are currently excavating who can show us work in progress. No prerequisites. Credit 3 units.

A&S CD TH FA SSP

ARC 232. Myths and Monuments of Antiquity

Same as Art-Arch 232E.

A&S CD LA FA AH

ARC 300. Internship in Archaeology

Internship with an archaeological project or organization where the primary objective is to obtain professional experience outside of the classroom. Student must have a faculty sponsor, and a site or project supervisor. Prerequisite: Open only to Archaeology majors with junior standing, and permission of department. Credit variable, maximum 3 units.

FA SSP

ARC 3053. Nomadic Strategies and Extreme Ecologies

Same as Anthro 3053.

A&S SS

ARC 310C. Ancient Civilizations of the New World

Same as Anthro 310C.

A&S CD TH FA AH

ARC 3122. From Country to Heavy Metal: Ancient Civilizations of the Old World

Same as Anthro 3122.

A&S SS

ARC 314B. Prehistory of North America

Same as Anthro 314B.

A&S CD SS FA SSP

ARC 318C. Prehistory of Africa

Same as Anthro 318C.

A&S CD SS FA SSP

ARC 3211. Art in the Egypt of the Pharaohs

Same as Art-Arch 3211.

A&S CD TH FA AH

ARC 3301. Homeric Archaeology

Same as Art-Arch 3301.

A&S CD TH FA AH

ARC 331. Greek Art and Archaeology

Same as Art-Arch 331.

A&S TH FA AH

ARC 3333. The Art and Archaeology of Japan and Korea

Same as Art-Arch 3333.

A&S TH FA AH

ARC 334. Roman Art and Archaeology

Same as Art-Arch 334.

A&S TH FA AH

ARC 336. Ancient Sanctuaries: The Archaeology of Sacred Space in the Ancient Mediterranean

Same as Art-Arch 336.

A&S CD TH FA AH

ARC 3369. Underwater Archaeology

Same as Classics 3369, Anthro 3369.

Survey of the history, techniques, and results of underwater excavation worldwide, with emphasis on the ancient Mediterranean. Prerequisite: Archaeology 190 or 200, or permission of instructor. Credit 3 units.

A&S TH FA SSP

ARC 3401. Chinese Art and Culture

Same as Art-Arch 3401.

A&S CD TH FA AH

ARC 3420. Archaeology of Ancient China

Same as Art-Arch 3420.

A&S TH FA AH

ARC 3452. The Archaeology of Death

ARC 345E. The Art and Archaeology of Ancient China

Same as Art-Arch 345E(Q). Credit 3 units.

A&S TH FA SSP

ARC 3461. Native Americans at Westward Expansion

Same as Anthro 3461.

A&S CD SS FA SSP

ARC 347B. Ancient Mound Builders of the Mississippi Valley

Same as Anthro 347B.

A&S CD SS FA SSP

ARC 372. Geoarchaeology

Same as Anthro 372.

A&S SS FA SSP

ARC 379. Feast or Famine: Archaeology and Climate Change

Same as Anthro 379.

A&S SS

ARC 3793. Mississippi River Basin: Past, Present, and Future

Same as Anthro 3793.

A&S SS

ARC 393. Introduction to Archaeological Field Techniques

Same as Anthro 393.

A&S SS FA SSP

ARC 3932. Introduction to Archaeological Field Survey

Same as Anthro 3932.

A&S SS FA SSP

ARC 397. Proseminar: Issues and Research in Anthropology

ARC 400. Stone, Bone, Clay, and Fiber: A Hands-on Course in Materials and Pre-Modern Production Techniques

Same as Art-Arch 400.

A&S TH FA AH

ARC 4020. Jerusalem, The Holy City

Same as JNE 4020.

A&S CD SD TH

ARC 403. Culture History of the Southwestern United States

Same as Anthro 403.

A&S CD SS FA SSP

ARC 4032. Lithic Analysis

Same as Art-Arch 4032.

A&S SS

ARC 421. Minoan and Mycenaean Archaeology

Same as Art-Arch 421. Credit 3 units.

A&S CD TH FA SSP

ARC 4211. Paleoethnobotany and Ethnobotany*Same as Anthro 4211.***A&S** SS **FA** SSP**ARC 4212. Advanced Methods in Paleoethnobotany****ARC 4213. Plants and American People: Past and Present***Same as Anthro 4213.***A&S** SS **FA** SSP**ARC 4214. The Archaeology of Food and Drink***Same as Anthro 4214.***A&S** SS**ARC 426. Ancient Athens***Same as Classics 426.***A&S** CD TH **FA** AH**ARC 427. Athenian Vase Painting***Same as Art-Arch 427.***A&S** TH **FA** AH**ARC 4321. Ancient Coins***Same as Art-Arch 4321.***A&S** TH **FA** AH**ARC 437. Greek Sculpture***Same as Art-Arch 437.***A&S** TH **FA** AH**ARC 4371. Greek and Roman Pottery***Same as Art-Arch 4371.***A&S** TH **FA** AH**ARC 455. Archaeological Research Techniques***Same as Anthro 455.***A&S** SS **FA** SSP**ARC 4561. Ceramic Analysis***Same as Anthro 4561.***A&S** SS **FA** SSP**ARC 4562. Artifact Analysis: Mississippian Cultures***Same as Anthro 4562.***A&S** SS **FA** SSP**ARC 4564. Archaeobotanical Analysis***Same as Anthro 4564.***A&S** SS **FA** SSP**ARC 4661. Historical Archaeology***Same as Anthro 4661.***A&S** CD TH **FA** SSP**ARC 4682. Ethnoarchaeology***Same as Anthro 4682.***A&S** CD TH **FA** SSP**ARC 4752. Practicing Archaeology***Same as Anthro 4752.***A&S** SS WI**ARC 4761. Pleistocene Peopling of Eurasia***Same as Anthro 4761.***A&S** SS **FA** SSP**ARC 477. African Prehistory***Same as Anthro 477.***A&S** SS **FA** SSP**ARC 479. Climate, Culture, and Human History***Same as Anthro 479.***A&S** NS **FA** SSP**ARC 4791. Archaeological Study of Social Complexity***Same as Anthro 4791.***A&S** SS**ARC 4803. Geographic Information Systems (GIS), Landscape, and Spatial Analysis in Archaeology***Same as Anthro 4803.***A&S** SS**ARC 481. Zooarchaeology***Same as Anthro 481.***A&S** SS **FA** SSP**ARC 482. Experimental Zooarchaeology***Same as Anthro 482.*

Credit 3 units.

A&S SS **FA** SSP**ARC 484. Paleoenvironmental Reconstruction***Same as EPSc 484.***A&S** NS**ARC 489. Pathways to Domestication***Same as Anthro 489.***A&S** SS **FA** SSP**ARC 4892. Hunter-Gatherer Socio-Economic Variation***Same as Anthro 4892.***A&S** SS **FA** SSP**ARC 4893. Pastoral Nomads of the Past***Same as Anthro 4893.***A&S** SS**ARC 491. Archaeological Research**

Undergraduate research experience sponsored by one of the archaeology staff. May be taken more than once for credit. Prerequisite: permission of the faculty member under whom the research will be done. Credit 1-3 units. Credit variable, maximum 3 units.

A&S SS **FA** SSP**ARC 492. Independent Studies**

Supervised independent research. For advanced undergraduates only. Prerequisite: Permission of the faculty member under whom the work will be done. Credit 1-3 units. Credit variable, maximum 3 units.

FA SSP**ARC 493. Honors Thesis**

Limited to students accepted into the honors program. Prerequisite: Permission of department. Credit 3 units.

A&S SS **FA** SSP**ARC 497. Senior Project**

Designed for majors in Archaeology who have not satisfied their college capstone experience in another manner, or who are not satisfying this requirement through ARC 493 Honors Thesis. This course involves a structured research assignment, internship, fieldwork, or independent project under the supervision of one of the department's faculty. Limited to students in the junior level and above. Permission of instructor who will supervise the work is required. Credit variable, maximum 3 units.

A&S SS **FA** SSP**ARC 498. Intensive Writing Course:****Archaeology**

Designed for majors who have not satisfied their college writing requirement in another fashion. This course ordinarily will be taken in tandem with another 300- or 400-level course in archaeology, with the required permission to enroll granted by the instructor in that course. The student will prepare a portfolio of papers, which will undergo revision and rewriting, as assigned by that course instructor. In some cases, this writing intensive course may be taken as an independent study course with one of the archaeology professors.

This latter option requires permission of both the department and the instructor. When the course is integrated with another 300- or 400-level course, credit will be limited to 1 unit. If taken as an independent study course, credit will be no more than 3 units. Permission of instructor required; limited to juniors and seniors. Credit variable, maximum 3 units.

A&S SS WI **FA** SSP**ARC 505. Seminar: Theoretical Approaches in Archaeology****ARC 5068. Seminar: Archaeological Area Studies**

Architecture

Jerome J. Sincoff, FAIA
Dean, College of Architecture
B.Arch., Washington University

Peter MacKeith

Associate Dean, College of Architecture
Associate Professor
M.Arch., Yale University

Co-Directors, Undergraduate Program

Iain A. Fraser, Professor
M.Arch., Washington University

John Hoal

Ph.D., Washington University

Co-Directors, Graduate Program

Paul Donnelly, FAIA
Rebecca and John Voyles Professor of Architecture

M.S., Columbia University

Adrian Luchini

Raymond E. Maritz Professor of Architecture
M.Arch., Harvard University

Director, Master of Urban Design Program

Eric Mumford, Associate Professor
Ph.D., Princeton University

Director, Architectural Technology Program

William Wischmeyer, Affiliate Associate Professor
M.Arch., Washington University

Endowed Visiting Professors**Juhani Pallasmaa**

Raymond E. Maritz Visiting Professor, 2003–2004
Dipl.Arch., Helsinki University of Technology

Bryan Healy

Ruth and Norman Moore Visiting Professor, Fall 2005
M.Arch., Yale University

Marcelo Ferraz

Ruth and Norman Moore Visiting Professor, Spring 2006
Dipl.Arch., Universidade de São Paulo

Professor**Carl Safe**

M.Environmental Design, Yale University

Associate Professors**Gia Daskalakis**

Dipl. de Postgrado, Universidad Politecnica de Catalonia

Robert Hansman

B.F.A., University of Kansas

Stephen P. Leet

B.Arch., University of Kentucky

Assistant Professors**Sung Ho Kim**

M.Sci., Massachusetts Institute of Technology

Zeuler Lima

Ph.D., Universidade de São Paulo

Paula Lupkin

Ph.D., University of Pennsylvania

Jacqueline Tatom

D.Des., Harvard University

Jane Wolff

M.L.A., Harvard University

Heather Woofter

M.Arch., Harvard University

Visiting Associate Professors**Jeffrey Berk** (Buenos Aires)

Dipl.Arch., Universidad de Buenos Aires

Gerardo Caballero (Buenos Aires)

M.Arch., Washington University

Gustavo Cardon (Buenos Aires)

Dipl.Arch., Universidad Nacional de Rosario, Argentina

Jouni Kaipia (Helsinki)

Dipl.Arch., Helsinki University of Technology

Pia Sarpaneva

Dipl.Arch., Helsinki University of Technology

Makoto Watanabe (Tokyo)

M.Arch., Harvard University

Yoko Kinoshita Watanabe (Tokyo)

M.Arch., Harvard University

Visiting Assistant Professors**Roy Mäntärii** (Helsinki)

Dipl.Arch., Helsinki University of Technology

Aino Niskanen (Helsinki)

Dipl.Arch., Helsinki University of Technology

Jodi Polzin

M.Arch., Columbia University

Fernando Williams (Buenos Aires)

Dipl.Arch., Universidad de Buenos Aires

Affiliate Professors**Peter Clarkson**

Dipl., Construction Management, Liverpool Polytechnic

Carl Rosenberg

M.Arch., Massachusetts Institute of Technology

Affiliate Associate Professors**Philip Holden**

M.Arch., Washington University

Richard Janis

M.Arch., Washington University

Gay Goldman Lorberbaum

M.Arch., Washington University

M. Jana Perea

D.Des., Harvard University

Affiliate Assistant Professors**Esley Hami Iton**

M.S., University of Wisconsin

Dan Hellmuth

M.Arch., Georgia Institute of Technology

George Johannes

M.Arch., Washington University

Robert Pettus

B.S.A.S., Washington University

Michael Repovich

M.Arch., Washington University

R. Phillip Shinn

B.S.E., Princeton University

Lecturers**Randy Burkett**

B.A.E., Pennsylvania State University

Liane Hancock

M.Arch., Columbia University

Patricia Heyda

M.Arch., Harvard University

Tom Polucci

M.Arch., Washington University

James J. Scott

J.D., Saint Louis University

Carolyn Toft

M.A., Washington University

Professors Emeriti**Gerald Gutenschwager****Sheldon S. Helfman****Udo Kultermann****Leslie J. Laskey****Donald Royse****Dean Emeritus****Constantine E. Michaelides, FAIA**

The College of Architecture, part of the Sam Fox School of Design & Visual Arts, is an independent division of Washington University that offers both undergraduate and graduate-level courses. The undergraduate architectural degree programs are integrated with the academic program of the College of Arts & Sciences, and thus you may enroll as an architecture major in the College of Architecture or you may take certain introductory-level architecture courses as part of your arts and sciences curriculum.

As a degree candidate in the College of Architecture, you receive either the Bachelor of Science in Architecture degree or the Bachelor of Arts degree with a major in architecture. The degree program requirements are the same for both degrees through the junior year (300 level). Students confirm their degree program at the conclusion of the junior level. Both undergraduate degrees are conferred by the College of Arts & Sciences at the conclusion of your senior year. All undergraduates therefore fulfill the requirements of the College, as well as the requirements of their specific degree program in the College of Architecture.

As a student enrolled in Arts & Sciences, you are eligible to take the introductory lec-

ture courses, Arch 111A-112A (a lecture/studio course for non-architecture degree candidates), Arch 209, and the two-semester survey of architectural history, Arch 3283-3284. A very limited number of Arts & Sciences students also may enroll in the basic design studio courses, Arch 111-112, with the permission of the dean or associate dean of the College of Architecture. The College of Art also offers course work equivalent to these introductory courses.

Students enrolled in the College of Arts & Sciences interested in transferring to the College of Architecture should contact the dean or associate dean of the College of Architecture as early as possible. Due to the College of Architecture's undergraduate design curriculum sequence, consideration of transfer requests is possible only at the end of the freshman or sophomore year. If you wish to enter the 300-level undergraduate curriculum, you are eligible to apply for admission to the College of Architecture only after completing the Arch 111-112, 211-212 sequence (or the equivalent) and the equivalent of two years of academic work (including Math 131). When you are admitted as an undergraduate degree candidate for either degree, your enrollment transfers to the College of Architecture.

Some College of Architecture courses are cross-listed in other departments and may be taken by students majoring in those fields.

The introductory architecture and design sequences at the 100 and 200 levels are courses prerequisite to the major in architecture requirements of both undergraduate architecture degree programs. The introductory architecture sequence is normally completed within the first two years of enrollment.

A Minor in Architecture degree is also available. For more detailed information on the architecture program and degree requirements, consult the College of Architecture section in the *Bulletin* beginning on page 290.

Art History and Archaeology

Chair

William E. Wallace

Barbara Murphy Bryant Distinguished
Professor of Art History
Ph.D., Columbia University

Endowed Professors

James D. Burke

E. Desmond Lee Scholar-in-Residence
Ph.D., Harvard University

Susan Rotroff

Jarvis Thurston and Mona Van Duyn Profes-
sor in the Humanities
(Classics)
Ph.D., Princeton University

Professors

Angela Miller

Ph.D., Yale University

Sarantis Symeonoglou

Ph.D., Columbia University

Associate Professor

Elizabeth Childs

Ph.D., Columbia University

Visiting Associate Professor

John Klein

Ph.D., Columbia University

Assistant Professors

Gwen Bennett

Ph.D., UCLA

Paul Crenshaw

Ph.D., New York University

Rebecca DeRoo

Ph.D., University of Chicago

Scholar in Residence

Cathleen A. Fleck

Ph.D., Johns Hopkins University

Adjunct Faculty

Brent Benjamin

M.A., Williams College

David Conradsen

M.A., University of Delaware

Francesca Consagra

Ph.D., Johns Hopkins University

Sabine Eckmann

Ph.D., University of Erlangen–Nürnberg

Sidney M. Goldstein

Ph.D., Harvard University

Michael Gunn

Ph.D., University of Otago, New Zealand

Paula Lupkin

Ph.D., University of Pennsylvania

Cara McCarty

B.A., Stanford University

Judith Mann

Ph.D., Washington University

Eric Mumford

Ph.D., Princeton University

John W. Nunley

Ph.D., University of Washington

Andrew Walker

Ph.D., University of Pennsylvania

Professor Emeritus

Mark S. Weil

E. Desmond Lee Professor for Collaboration
in the Arts, Emeritus
Ph.D., Columbia University

Art history provides the opportunity to explore visual culture, as well as the social, aesthetic, and personal values that help shape it.

Students are introduced to the study of art history and archaeology through general introductory courses that focus on European, Asian, and American art, and world archaeology. In more advanced courses, students enjoy studying original works of art owned by the Washington University Mildred Lane Kemper Art Museum, the Saint Louis Art Museum, and local private collectors.

A variety of career paths are available to you when you major in art history and archaeology. Many graduates earn advanced degrees in both related and unrelated fields and work in museums or academia or for art publishers, commercial art galleries, auction houses, nonprofit organizations, and other arts-related organizations.

The Major: When you major in art history and archaeology, you must take two introductory courses (Art-Arch 111 and 112, each of which is three hours), which serve as prerequisites for all 300- and 400-level offerings. The major consists of 24 additional hours of art history at the 300, 400, and 500 levels, including courses from three of the following four areas of the discipline: (1) Ancient and Medieval, (2) Asian art and archaeology, (3) Renaissance and Baroque, (4) Modern European and American art. At least two courses must be 400- or 500-level seminars.

As an art history and archaeology major, you are encouraged to acquire a good reading knowledge of French, Italian, or German. If you choose a concentration in ancient Mediterranean art and archaeology, ancient Greek, Latin, or both will be useful. Similarly, Chinese or Japanese will be useful if you choose a concentration in Asian art.

The Minor: To minor in art history and archaeology requires a total of 18 hours. You must take two introductory courses (Art-Arch 111, 112) and four courses at an advanced level, chosen from at least two of the four areas listed above.

Internships: Internships in the curatorial and education departments of the Saint Louis Art Museum or the Washington University Mildred Lane Kemper Art Museum or in one of the St. Louis area commercial galleries are available to you as an undergraduate art history and archaeology major. You may devote up to 3 credit hours to a voluntary internship, or secure a paid internship for no credit. Such internships provide invaluable experience and may help lead to employment opportunities after graduation.

Study Abroad: Students are encouraged to participate in a variety of international programs available in a number of overseas locations. Foreign language ability is not a barrier; programs based in English are also available. You may work with your adviser or with the coordinator of Overseas Study to find the program that best meets your particular interests and needs.

Senior Honors: Exceptional students are invited by the faculty to work toward Honors. Honors are awarded for completing the major with at least a 3.5 GPA and a 3.3 GPA in the College, and writing an Honors paper (after enrolling in Art-Arch 499), which is read by at least two faculty members.

Undergraduate Courses

Art-Arch 106. Freshman Seminar: Van Gogh and the Avant-Garde

This freshman seminar focuses on the art and career of Vincent Van Gogh, and his relationship to artists of the 1880s in France. We explore his art in connection to the movements of Impressionism, Japonism, and Symbolism. We examine the avant-garde world of Paris, and Van Gogh's relationship to such figures as Gauguin, Bernard, and Toulouse-Lautrec. The larger current of fin-de-siècle nostalgia for the countryside informs our study of his work in the south of France. Van Gogh's life and the critical reception of his art offer an excellent opportunity to study how the legends of modern art are formed. Visits to the Saint Louis Art Museum will complement our study. Readings include the artist's letters, critical studies, and biographies of Van Gogh and key figures in his circle. No prerequisite, but either Art-Arch 112e or co-enrollment with Art-Arch 211e is recommended. Credit 3 units.

A&S LA FA AH

Art-Arch 107. Freshman Seminar: Public Art/Art and its Publics in St. Louis

The course considers the history and functions of public art, with special attention to public art in St. Louis. Part of our investigation is to inquire into the conditions that seem to be necessary for visual art to be considered public. So we consider not only the obvious forms of public art in urban sculpture and murals, but also less traditional intersections of art and public in such sites as video and the internet. We also examine the operations of institutions, national and local arts agencies, international exhibitions, nonprofit centers, and the like that foster a public engagement with contemporary art. After studying aspects of the history of public art, we proceed to selected case studies today, many of them in St. Louis, including projects for Arts in Transit (the MetroLink), the Regional Arts Commission, Grand Center, and Missouri SOS (Save Outdoor Sculpture). This leads us, finally, to theorize the function of public art in a variety of contemporary forms. Local field trips to study important public art; visiting speakers from arts agencies; student projects proposing a work of public art in St. Louis, which acquaints students with procedures in arts administration. 3 units. Credit 3 units.

A&S TH

Art-Arch 111E. Introduction to Asian Art

Same as East Asia 111E, ACC 111E, Art-Arch 111. Selected topics in the arts of South and East Asia from earliest time to the present. Emphasis on the cultural setting and roles of the arts in Asian societies. Attention to cross-cultural comparisons and to media and technique. Classroom lectures; smaller bi-weekly discussion sections. Credit 3 units.

A&S CD LA FA AH

Art-Arch 112E. Introduction to Western Art
Same as Art-Arch 112E.

A discussion of painting, sculpture, and architecture of the western world from ancient Egypt to the present with emphasis on the relationship of art to society and to political and cultural events. Classroom lectures; smaller biweekly discussion sessions. Credit 3 units.

A&S LA FA AH

Art-Arch 190B. Introduction to Archaeology
Same as Anthro 190B.

A&S SS FA AH

Art-Arch 200C. World Archaeology

Same as ARC 200C.

A&S CD TH FA SSP

Art-Arch 211. Introduction to Modern Art

A survey of major developments in European and American art from the late 19th century to present. Focus will be on both the aesthetics of modernism and its evolving cultural and political context. Major movements to be discussed include Impressionism, Symbolism, Cubism, Fauvism, Surrealism, Abstract Expressionism, Pop Art, Minimalism, Post-Modernism, Conceptual Art and issues in Contemporary Art. Classroom lectures; smaller biweekly discussion sessions. No pre-requisite. Credit 3 units.

A&S LA FA AH

Art-Arch 211E. Introduction to Modern Art

A survey of major developments in European and American art from the late 18th century to present. Focus will be on both the aesthetics of modernism and its evolving cultural and political context. Credit 3 units.

A&S LA FA AH

Art-Arch 212. Modern Art in Italy

Same as Art-Arch 212A.

This course traces the history of modern art from the Enlightenment to the present, with a special focus on Italian responses to the major movements of modernism, and to the place of Italy in the careers of significant traveling artists. We begin with the age of archaeological discoveries, the rise of Neoclassicism, and the international art academies based in Rome (Canova, David, Ingres). We consider the rise of landscape painting, watercolor practice, and the image of the pastoral in the romantic work of European and American artists traveling to Italy (Jones, Turner, Cole, Hosmer). Traveling artists working in Venice (Manet, Whistler, Monet) and Florence (Degas) use Italy to fuel both a dialogue with art history, and to explore new avenues. We examine Symbolism through the Italian idiom (Previati and Rosso) and consider the impact of Cubism on Futurism in the years before the war. We also study the fate of art under fascism; the post-war conceptual work of Manzoni and Arte Povera; and the lives of expatriate American artists and collectors living in Italy (Twombly; Peggy Guggenheim) We conclude with contemporary trends, considering Italy's place in the international art world. Complemented by guest speakers on Italian modernism, and field trips to the Saint Louis Art Museum. No prerequisite, although Art-Arch 112E Introduction to Western Art is recommended. Priority for enrollment in this course will be given to students in the School of Art who are going on the Florence Study Abroad program in Spring 2006. This course will prepare students for viewing collections of modern art in Italian collections. For College of Art students, this course substitutes for the required course Art-Arch 211, Introduction to Modern Art. Remaining spaces in the class are open to students from Arts & Sciences, and the College of Architecture. Credit 3 units.

A&S TH FA AH

Art-Arch 218C. The Renaissance: Crisis and New Beginnings

Same as Med-Ren 318C.

A&S TH

Art-Arch 220. Introduction to Film Studies

Same as Film 220.

A&S LA

Art-Arch 222. Illustrated Entertainment: Pictorial Graphic Culture from Early Printing to Television

This course addresses the production, distribution, aesthetics, and cultural significance of illustrated entertainment in Europe and especially the United States. The course will serve as a typological survey; that is, it will address important practitioners in significant categories of a very broad field. Subject coverage will include early printing, caricature and the art of the gazette, the development of comics, 20th-century American magazine illustration, early animation, the animated TV series, and, if time permits, online animation. Topics of consideration include: the interplay of art, entertainment, and communication; the role of the individual creator versus the corporate concern; the impact of the editor and art director; the self-image of the creator; the social context of the work; and the role of technological change. Credit 3 units.

FA AH

Art-Arch 225. Matisse and Picasso

Credit 3 units.

A&S TH FA AH

Art-Arch 232E. Myths and Monuments of Antiquity

Same as ARC 232, History 105E.

An introduction to the ancient world (circa 3500 BC to AD 400) based on masterpieces of art and architecture from Mesopotamia, Egypt, Greece, and the Roman Empire. The monuments are accompanied by a selection of myths and documents representing the cultural life of these ancient societies and constituting their legacy to our modern world. Credit 3 units.

A&S CD LA FA AH

Art-Arch 2662. Semester Abroad Program Seminar

This course prepares students participating in the Semester Abroad Program in Florence, Italy. The seminar meets eight times over the course of the semester. Attendance is required. Prerequisite: Students selected for the Art History Semester Abroad Program only. Art students should register for F20 2662. Credit 1 unit.

Art-Arch 299. Internship in the Art Community

Prerequisite: a major or minor in art history, permission of the undergraduate adviser requested in advance, and a letter from the sponsoring institution stating the nature of the internship. Variable credit, 1-3 units. Credit variable, maximum 3 units.

FA AH

Art-Arch 3001. Writing Intensive in Art History and Archaeology

Same as Classics 3001.

Credit 3 units.

A&S TH WI

Art-Arch 3010. Topics in Art History

Same as Art-Arch 3010, WGS 3010.

Credit 3 units.

A&S TH

Art-Arch 3040. Documents and Documentary in Photography and Film

Same as Film 3040, AMCS 3040.

How do photographs, films, and contemporary media appear to portray cultures, events, or history with objectivity? What are the roles of ethics and

aesthetics in this process? We consider a range of images from the 19th century to the present that explore and challenge concepts of documentary, including: ethnographic records, WPA reportage, photomontage, surrealist film, and artists' autobiographic Web sites. Readings balance historical sources with contemporary theory from photography and film studies, including texts by Roland Barthes, Allan Sekula, W.J.T. Mitchell, Annette Michelson, Dziga Vertov, and Marianne Hirsch. Prerequisite: Art-Arch 112e or permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 3051. A Survey of Allegory in Italian Art

The course surveys the use of symbolic and allegorical images in Italian Art from Giotto (14th century) through Gianlorenzo Bernini (17th century). The course begins with religious images but emphasizes the influence of humanist (classical) literature and thought on Italian Allegory. Class discussions focus on major works by such artists as: Giotto Masaccio, Piero della Francesca, Botticelli, Andrea Mantegna, Michelangelo, Raphael, Titian, Nicolas Poussin and Bernini as well as passages from translated texts of Italian authors such as Francesco Petrararch, Dante Alighieri, Leon Battista Alberti, Ludovico Ariosto, and Giambattista Marino. Credit 3 units.

Art-Arch 306. Art of the Italian Renaissance Courts

Same as Art-Arch 306.

This course examines the art and architecture of the Italian Renaissance courts during the 15th and 16th centuries. Concentrating primarily on the dynastic centers of Milan, Mantua, Ferrara, and Urbino, the course explores the ways in which Renaissance art operated in the service of the court as a powerful tool of statecraft. We will consider the union of art and politics by examining the patronage of the secular princes, while also analyzing how the visual identity of the state intersected with presentations of gender and religious difference in the Italian Renaissance city-states. The course will provide new insights into famous masterworks by artists such as Leonardo da Vinci and Andrea Mantegna and place their work within a larger discourse that incorporates less well-known local art by painters including Garofalo and Dosso Dossi. This course is grounded in a close engagement with primary sources—both visual and textual, evoking through such documents the multiple contexts in which art and power were produced, received, and experienced. To this end, we study in-depth the art and architecture executed in the Italian courts through lectures and through readings such as Cole's small survey book and selected articles and essays exploring Italian court art from a variety of different methodological perspectives. In addition, we study the monument's relationship to contemporary writings, particularly Alberti's writings on the art of building: Castiglione's description of the customs, tastes, and culture of Renaissance court life in the *Book of the Courtier*; and Vasari's *Lives of the Artists*. Credit 3 units.

A&S TH FA AH

Art-Arch 3061. Pilgrimage and Renaissance Art

Tourism of today has its antecedents in the medieval and Renaissance practice of pilgrimage. Not usually associated with the Renaissance, pilgrimage was nevertheless an entrenched component of Renaissance life. It stimulated the development of art, particularly with relationship to the churches, which profited considerably, along with their respective towns and cities. This course looks at the practice of pilgrimage as a major catalyst in the development of Renaissance art. Covering works at St. Peter's in Rome, San Francesco in Assisi, il Santo in Padua, and the Basilica of

Loreto, for example, we go on our modern day pilgrimage to see and experience the major monuments and art works of such artists as Giotto, Donatello, and Michelangelo. We also visit the Saint Louis Art Museum. Credit 3 units.

FA AH

Art-Arch 307. Northern Renaissance Art

A survey of the major artistic developments in Northern Europe, circa 1400-1575. The course looks at the production of painting, sculpture, printmaking, drawing, manuscript illumination, and architecture in social, political, and religious contexts. The major artists to be covered include Jan van Eyck, Rogier van der Weyden, Albrecht Durer, Hans Holbein, Hieronymus Bosch, and Pieter Bruegel the Elder. Credit 3 units.

A&S TH FA AH

Art-Arch 311C. Ancient Civilizations of the New World

Same as Anthro 310C.

A&S CD TH FA AH

Art-Arch 316I. Special Topics in Printmaking: History and Practice of Printmaking

This course focuses on the history and creation of prints. We examine the specificities of the medium, historically and in the present, that contribute to its particular meaning, and that render it distinct from other forms of visual culture. Ideas of expression, interpretation, and ideological investment are seen on the continuum that ranges from the highly personal relationship of a print to its maker, to the commodification of the print within popular culture. All along that continuum, the print is seen as an active agent that mediates a relation between the maker, her materials, and the social and political world in which it circulates. Students participate in a broad range of hands-on studio sessions that offer basic instruction in monotype, lithography, etching, and relief printing. Weekly lectures on the history of prints complement the studio sessions, as do field trips to studios of St. Louis artists, and visits to the collections of local museums. Class lectures explore the idea of the communities built and sustained by the circulation of prints. We look at prints in their historical role as reproductions in a pre-photographic age, as representations of shared religious and social values, and as vehicles of social or political critique. Artists to be discussed include Durer, Rembrandt, Daumier, Degas, Gauguin, Kirchner, Kollwitz, Warhol, Spero, Rauschenberg, Gonzales-Torres, and Kiki Smith. Students' final projects involve both historical research, and the creation of an original print in response to a print on display in the Mildred Lane Kemper Art Museum. All students make prints, and all engage in written critical and historical analysis. Prerequisite: Introduction to Western Art (Art-Arch 112E). Course fulfills either an art or art history elective in the College of Art. 3 units. Lab, materials fee: \$75.00.

SECT 01: Same as Art-Arch 316I. Students in the College of Art register for F20 Art 316I. Art history majors and minors register for Art-Arch 316I. Enrollment limit will be set at zero and students will be enrolled from the waitlist. Credit 3 units.

A&S TH FA AH

Art-Arch 321I. Art in the Egypt of the Pharaohs

Same as ARC 321I.

A penetrating study of the artistic achievements in ancient Egypt during the Old, Middle, and New Kingdom (circa 3000-1100 BC). The great monuments of Egypt are considered both for their aesthetic importance and as expressions of the superior culture developing, flourishing, and declining in the pristine valley of the Nile. Prerequisite: sophomore standing or permission of the department. Credit 3 units.

A&S CD TH FA AH

Art-Arch 330I. Homeric Archaeology

Same as Classics 330I, ARC 330I, Art-Arch 330I.

The art and culture of prehistoric Greece as reflected in *The Iliad* and *The Odyssey* of Homer. The course examines, analyzes, and researches the Minoan/Mycenaean civilization and its legacy that resulted in the renaissance of the 8th century BC. Topics range from the 20th century to the 8th century BC and focus on major sites like Knossos, Phaistos, and Mycenae, burial customs, trade, warfare, and the emergence of the Greek city-state. No prerequisite. Credit 3 units.

A&S CD TH FA AH

Art-Arch 331. Greek Art and Archaeology

Same as ARC 331, Classics 350.

A survey of the artistic achievements and material culture of the Greeks from circa 1000 BC through the Hellenistic period. Development of architecture, sculpture, and painting, as well as minor arts and utilitarian objects, with emphasis on the insight they offer into Greek society. Credit 3 units.

A&S TH FA AH

Art-Arch 332O. From the Irrational to the Marvelous: Dada and Surrealism in Europe and the U.S

Same as Comp Lit 332.

A&S TH

Art-Arch 3333. The Art And Archaeology of Japan and Korea

Same as East Asia 3333, ARC 3333, IAS 3333, Art-Arch 3333.

Northern East Asia, in particular Japan and Korea, is now the location of several distinct national cultures. This course provides an overview of the cultural developments of Japan and Korea by introducing the art and archaeology of their major periods of development. Both regional interaction and the indigenous developments that formed the cultural heritage of this region will be looked at through an examination of artifacts, architecture, and monuments, all set within their social and historical contexts. Credit 3 units.

A&S TH FA AH

Art-Arch 334. Roman Art and Archaeology

Same as ARC 334, Classics 334.

The art and archaeology of the Romans, with emphasis on the late Republic and the Imperial period. Major monuments of sculpture and architecture, as well as town planning, domestic architecture, and the minor arts will be used as evidence for reconstructing ancient life. Credit 3 units.

A&S TH FA AH

Art-Arch 336. Ancient Sanctuaries: The Archaeology of Sacred Space in the Ancient Mediterranean

Same as Classics 336I, ARC 336.

Like the Vatican today, ancient sanctuaries were both the focus of religious activities and repositories for artistic treasures. Marked off from the secular world by physical boundaries, the sanctuary provided a common ground where gods and humans came together through sacrifice, shared meals, and other rituals. Shrines were often spectacularly sited and adorned with splendid architecture with both temples for the divinities and treasuries for the gifts they received. The course will focus on the great shrines of ancient Greece: Eleusis, the setting of the mysteries of Demeter; Olympia, home of the Olympic games. Credit 3 units.

A&S CD TH FA AH

Art-Arch 340I. Chinese Art and Culture

Same as IAS 340I, ARC 340I, ACC 340I.

Chinese art and culture from prehistory (circa 5000 BCE) through the Tang dynasty (9th century CE). Using new archaeological findings and new interpretive strategies, we "rewrite" the long-term history of the arts within Chinese culture. Particu-

lar attention to changing configurations of society and economy, and to the role of ideology. Prerequisite: Art-Arch 111EQ or permission of instructor. Credit 3 units.

A&S CD TH FA AH

Art-Arch 342O. The Archaeology of Ancient China

Same as ACC 342O, ARC 342O, IAS 342O.

This course examines the development of Chinese civilization from its beginnings in the many regional village-level societies that developed around the country early in the Neolithic period to the emergence of politically unified states in the Bronze Age. The archaeological evidence for this transition, including the evidence for regional interaction and conflict, technological innovation, urbanization, ceremony, and ritual are examined. Various theoretical perspectives also is introduced to give students a framework for interpreting this evidence. No prerequisites for this course, and students from all backgrounds are welcome for the diversity of perspectives they are able to provide. Readings used for this class are in English, and consist of materials from a variety of disciplines (primarily archaeology, anthropology, art history, and history). Credit 3 units.

A&S TH FA AH

Art-Arch 342I. The Art and Archaeology of Northern East Asia in Prehistory

The vast region of Northern East Asia (northern China, Japan, Korea, and the maritime region of Russia), now the location of many distinct national cultures, is the home of prehistoric societies that have many shared cultural roots. This course provides an overview of the cultural developments in this region during the period before written records (differing by region) by introducing the art and archaeology of its major periods of development. Both the regional interaction and the indigenous developments that formed the cultural heritage of this region will be examined through the region's artifacts, architecture, and monuments, all set within their social and historical contexts.

There is no prerequisite for this course and students of all backgrounds are welcome. Readings used for this class are in English, and consist of materials from a variety of disciplines (primarily archaeology, art history, anthropology, and history). Credit 3 units.

A&S TH FA AH

Art-Arch 3423. From Ancient Worlds to Contemporary Practice

Same as East Asia 3423, ACC 3423, Art-Arch 3423.

Asian art enjoys a rich and diverse history. Many of the art forms practiced today have inextricable ties to cultures and societies that formed centuries ago. This course introduces traditional art forms and their cultural underpinnings through the unique opportunity of interacting with visiting artists from East Asia from a painter from Taiwan to a potter from Japan, along with Asian-American artists in the St. Louis community. Credit 3 units.

A&S TH FA AH

Art-Arch 3424. The Arts of China, 907–2005: From the Dawn of the Literati to the Digital Age

This course on Chinese art explores painting, architecture and gardens, and sculpture, as well as furniture, ceramics, and other decorative arts from the period of the Five Dynasties and Song down to the present day. The arts are viewed in their social and ideological contexts. Among the themes the course explores are: the rise of landscape painting, gardens, and literati identity; imperial painting schools and building projects; religious values in art and architecture; art and mass production; the "vernacular" Chinese home and its contents; the arrival of the West and Chinese iden-

tity with relation to the modern; and art as propaganda and as a critical voice of dissent. Credit 3 units.

A&S CD TH FA AH

Art-Arch 3580. Chinese Art and Culture

Same as East Asia 3580, IAS 3581.

Chinese art and culture from prehistory (circa 5000 BCE) through the Tang dynasty (9th century CE). Using new archaeological findings and new interpretive strategies, we “rewrite” the long-term history of the arts within Chinese culture. Particular attention to changing configurations of society and economy, and the role of ideology. Prerequisite: Art-Arch 111e or permission of the instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 359. Dutch 17th-Century Painting

Same as Med-Ren 3591.

This course surveys the major developments in history, portrait, landscape, still-life, and genre painting in the Northern Netherlands in the 17th century. A variety of interpretive strategies and methods of inquiry are employed. The major artists to be discussed include Frans Hals, Rembrandt, and Vermeer. Credit 3 units.

A&S TH FA AH

Art-Arch 360. Renaissance Architecture

Same as Med-Ren 360, Art-Arch 360, Art-Arch 4781.

The modern concept of the architect as creator and genius began with Filippo Brunelleschi, the great innovator of 15th-century Florentine art. The course explores the spread of architecture and architectural theory as it begins in the hands of the innovator and is expressed and changed by other men of genius such as Leon Battista Alberti, Donato Bramante, Michelangelo Buonarroti, and Andrea Palladio. Credit 3 units.

A&S TH FA AH

Art-Arch 362. High Renaissance Art

Same as Med-Ren 362, Re St 362.

A general survey focusing on such outstanding figures of the period as Botticelli, Leonardo da Vinci, Michelangelo, Bellini, Giorgione, Titian. Credit 3 units.

A&S TH WI FA AH

Art-Arch 3620. Mannerism in Italy

Same as Med-Ren 3621.

This course surveys the various embodiments of Mannerism, “maniera,” or what has been called the “stylish style,” in Italian art following in the wake of the High Renaissance. The nature of this self-conscious response to the achievements of the Raphael, Michelangelo, and the revival of the antique has resisted easy classification both in contemporary writings and modern scholarship. The works of the “maniera” have been framed both in terms of decadence and refinement. The period was also a time of great social and religious upheaval, leading some to define Mannerism as a style of crisis. On the other hand, the deliberate elegance and grace that characterizes so many works responded to the tastes of court society. The course addresses the conflicting definitions of Mannerism by analyzing the works of art themselves and placing them in their social and cultural contexts. Credit 3 units.

A&S TH FA AH

Art-Arch 3623. Since 1960: Art, Criticism, and Theory

This course considers recent movements in European and American Art, including Pop, Minimalism, Conceptualism, Performance, Postmodernism, and Installation Art, in their social and historical contexts. We examine the dialogue between visual works and critical and theoretical texts by Michael Fried, Michel Foucault, Lucy Lippard, Jean Baudrillard, and Kobena Mercer, among others. Prerequisite: Art-Arch 112e or per-

mission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 362B. High Renaissance Art

A general survey focusing on such outstanding figures of the period as Botticelli, Leonardo da Vinci, Michelangelo, Bellini, Giorgione, Titian. Credit 3 units.

A&S TH FA AH

Art-Arch 3631. Creative Women

Same as WGS 351.

A&S LA FA AH Lit

Art-Arch 365. Baroque Art

Same as MLA 475, Art-Arch 365, Med-Ren 365, Re St 355.

A survey of the development of painting and sculpture in 17th-century Europe. Emphasis on the works of Caravaggio, Bernini, Poussin, Rubens, Rembrandt, and Velazquez. Prerequisite: Art-Arch 112E, or permission of the department. Credit 3 units.

A&S TH FA AH

Art-Arch 3671. Michelangelo: Painter, Sculptor, Architect

Same as Med-Ren 3671, Art-Arch 367A, MLA 4671.

An examination of his life, his work, and his time. A consideration of the artist’s painting, sculpture, and architecture in relation to his contemporaries and to the broad historical, political, and artistic currents of his day. Prerequisite: Art-Arch 112E. Credit 3 units.

A&S TH FA AH

Art-Arch 370. The American West: The Image in History

Same as AMCS 370.

Examines representations of the American West and of the frontier encounter between Euro-American and Native American cultures, from the early 19th to the early 20th centuries. We consider travel accounts, fiction painting, ledger drawings, photography, and film in order to analyze the ways in which historical circumstances have shaped artistic and literary representations. At the same time, we look at how images and texts have shaped formative myths about the West that in turn leave their impact on history. Credit 3 units.

A&S CD TH FA AH

Art-Arch 3701. Illustrated Entertainment: Pictorial Graphic Culture from Early Printing to Television

Same as F20 ART 3701, AMCS 3710.

This course addresses the production, distribution, aesthetics, and cultural significance of illustrated entertainment in Europe and especially the United States. The course serves as a typological survey; that is, it addresses important practitioners in significant categories of a very broad field. Subject coverage includes early printing, caricature and the art of the gazette, the development of comics, 20th-century American magazine illustration, early animation, the animated TV series, and, if time permits, online animation. Topics of consideration will include: the interplay of art, entertainment, and communication; the role of the individual creator versus the corporate concern; the impact of the editor and art director, the self-image of the creator, the social context of the work, and the role of technological change. Credit 3 units.

A&S TH FA AH

Art-Arch 371. American Art to 1900

Same as AMCS 371.

A survey of broad social, cultural, and nationalist themes in the visual arts from European contact with the New World to 1900. Topics include the encounter of New World cultures with European colonizers and the ongoing relationship between America and Europe; the changing image of the artist; the role of art in the formation of national

identity. Prerequisite: Art-Arch 112E or permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 3712. Art and Culture in America’s Gilded Age

Same as History 3712, AMCS 3712.

Developments in American culture from the end of the Civil War to the turn of the century: novels, buildings, images, public and private spaces of this transitional period a time of new class formation, of unparalleled social diversity, and of new urban forms. The connections between art, literature, and social experience. Representative figures include Henry James, Henry Adams, Louis Sullivan, Stanford White, Thomas Eakins, Louis Tiffany. Credit 3 units.

A&S TH FA AH

Art-Arch 372. American Art to 1960

Same as Art-Arch 372, AMCS 372.

From the beginnings of modernism in the visual arts of the United States, around 1900, to Abstract Expressionism and the Beat aesthetic. Focus on the cultural reception and spread of modernism, native currents of modernist expression, from organicism to machine imagery, the mural movement and the art of the WPA, the creation of a usable past, abstraction and figuration, regionalism and internationalism, photography and advertising. Credit 3 units.

A&S TH FA AH

Art-Arch 376. American Modernism, 1900–1940

Same as AMCS 376, Art-Arch 376.

American modernism: What is it? What is the nature of its encounter with mass culture? What happened to modernism as it migrated from its “high” European origins to its “middlebrow” version in America between the turn of the century and the eve of World War II? What was the rhetoric of modernism in everyday life its impact on design, photography, advertising? In addition to the fine arts, we look at popular media, film, and photography. Lecture/discussion. Prerequisite: Art-Arch 211 Introduction to Modern Art, or permission of the instructor. Credit 3 units.

A&S TH WI FA AH

Art-Arch 3782. Modern Art 1905–1960

This course investigates topics in European painting, sculpture, architecture, photography, and film. Lectures and readings address major artistic developments, including Cubism, De Stijl, Futurism, Expressionism, Dadaism, Constructivism, Surrealism, the Bauhaus, and Art Brut. Special attention is given to debates on abstraction versus figuration in different social and historical contexts, and to the roles of technology, mechanical reproduction, and engineering in the modern age. Prerequisite: Art-Arch 211e or permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 3831. Art in the Age of Revolution: 1789–1848

Same as IAS 3831.

European painting, sculpture, and printmaking from the French Revolution to the mid-19th century; French, English, German, and Spanish artists discussed in social and aesthetic context, with a focus on links between art and ideology in times of political turmoil. The styles of classicism and romanticism, the rise of history painting, and the development of realism in both landscape and genre painting. Prerequisite: Art-Arch 112 e, or permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 3833. Realism and Impressionism

Same as Art-Arch 3833, IAS 3833, EuSt 3833.

An examination of the development of European art from approximately 1848 to the mid-1880s, with a focus on the development of Realism and

Impressionism in England and France. Issues explored include the breakdown of academic art, the rise of landscape and naturalist themes, the emergence of alternative exhibition spaces and new dealer systems, and the relationship between gender and avant-garde practice. Prerequisite: Art-Arch 112e or Art-Arch 211, or permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 3838. Modern Art in Fin-de-siècle Europe, 1880–1907

Same as EuSt 3838, IAS 3838.

This course examines artistic production at the turn of the century in France, Belgium, England, and Scandinavia. Beginning with the re-evaluation of impressionism and naturalism in France, we examine Neo-Impressionism (Seurat and Signac) and Symbolism (Moreau, Van Gogh, Gauguin, the Nabis, Rodin, Munch), as well as later careers of Impressionists (Cassatt, Monet, Degas, Renoir). Considers cross-national currents of Symbolism in Belgium and Scandinavia; the Aesthetic Movement in Britain; the rise of expressionist painting in French art (particularly with the Fauvism of Matisse and Derain), and the juncture of modernist primitivism and abstraction in early Cubism (Picasso). Prerequisite: Art-Arch 112 or permission of the instructor. Credit 3 units.

A&S TH WI FA AH

Art-Arch 3871. European Art Between the World Wars

An examination of European art within its social and political context from 1914 to 1945. Lectures and readings address major artistic developments such as Cubism, Expressionism, Dada, and Surrealism, as well as cultural production under totalitarian regimes. Prerequisite: Art-Arch 211 Introduction to Modern Art or permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 392. History of Book Illustration

Same as ART 445.

Art-Arch 3971. Gender in Contemporary Art

Same as WGS 3971.

We will study artists from 1960 to the present whose work thematizes gender, including Carl Andre, Robert Morris, Cindy Sherman, Lorna Simpson, and Mona Hatoum, and discuss how their work raises questions about representation of the body, spectatorship, and notions of identity. This course is intended to help students develop and refine their writing, and requires at least three papers. As we write and revise, we consider how gender theory has encouraged art historians to rethink writing and research methods: the topics we choose, the structure of our arguments, our relation to our subjects, and the audience we address. Prerequisites: at least one art history course at the 300 level or permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 397W. Writing about Art

This colloquium will engage the possibilities and pitfalls involved in writing about art, including the difficulty of translating visual responses into verbal or written media and distinguishing between history, theory, and criticism. Readings investigate a broad range of methodologies employed by art historians, including connoisseurship, iconology, semiotics, patronage studies, and gender, class, and race politics. Students compose a sequence of short papers that are closely scrutinized in an effort to improve writing skills. The assignments cover different genres of art writing, such as the visual analysis, the museum label, the catalogue entry, and the comparative essay, all bearing in mind the respective appropriate audience(s). Prerequisites: open to junior and senior undergraduates only, or by permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 400. Stone, Bone, Clay, and Fiber: A Hands-on Course in Materials and Pre-modern Production Techniques

Same as ARC 400.

Often, archaeologists and art historians have little opportunity in the course of their academic trainings to obtain hands-on experience with materials forming the basis of their study. This class is designed to provide several opportunities for students to do just so. We work with stone, bone, wood, and shell to recreate tools and ornaments; clay to make pottery; pounded earth to make walls; and fibers to make textiles and cordage. The instructor includes any other areas of student interest where facilities/resources can be arranged. Students produce several experiments using different materials, document their experimental productions in written reports, and present their projects to the class. Credit 3 units.

A&S TH FA AH

Art-Arch 4002. The Decorative Aesthetic in Modernism, 1860–1960

In the criticism of modern art, decoration and decorative have often been used as pejorative terms, designating art that has no intellectual basis but is merely pleasing, intended to fill space and delight the eye. But in the late 19th century, these terms carried important cultural value, and opened the door to significant experiments in abstraction. Moreover, the decoration of a public space or surface may have political implications. This course will investigate decoration and theories of “the decorative” in modern art in Europe and the United States, with special attention to the evolution of ideas of modernism in both 2-dimensional and 3-dimensional environments. We also consider some of the political meanings that may be borne by both public mural painting and domestic decoration, as well as easel painting that aspires to conditions of the decorative. Key figures include Puvis de Chavannes, Morris, the Nabis, Van de Velde, Monet, Matisse, the Mexican muralists, Pollock, and Shapiro. Prerequisite: Art-Arch 211, Introduction to Modern Art, or any 300-level course in art history, or permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 4003. Mountain Peaks, Floating Clouds, and Flowing Water: East Asian Garden and Landscape Traditions

This seminar focuses on the gardens of East Asia (China, Japan, and Korea), as well as traditions of landscape representation, in their broader context of perceptions, cultural meanings, and societal implications of landscape. The course examines both primary sources and modern scholarship on various East Asian landscape traditions. While gardens are the primary focus, paintings and literature of East Asia also provide essential contextual discussion. We examine both aesthetic/design qualities and cultural meanings. Case studies include Chinese traditions of imperial and scholarly gardens, Japanese tea and zen gardens, and Korea’s uncultivated gardens. Field trips include the Missouri Botanical Garden and the Saint Louis Art Museum. Prerequisite: one course in Asian Art or East Asian Studies, or permission of the instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 4032. Lithic Analysis

Same as ARC 4032.

This seminar provides graduate and undergraduate archaeologists and other interested students with an introduction to various aspects of lithic analysis. Stone tools and lithic debitage found at prehistoric settlement and activity sites can provide insights into the lives of past peoples that are both complementary and contrastive to findings from other material remains, and are thus a major area of archaeological interest. Topics to be covered include a historical review of the various develop-

ments in lithic analysis, hands-on application of analytical techniques using flaked stone tools, ground stone tools, and lithic debitage, lithic illustration, and flaked and ground stone tool replication. Prerequisite: Introduction to Archaeology. Credit 3 units.

A&S SS

Art-Arch 4041. Connoisseurship and Museum Procedures

The course deals with the theory of connoisseurship, an approach to the study of the history of art based on examination and direct knowledge of works of art. Readings emphasize various approaches to connoisseurship. Students experience the practice side of connoisseurship doing research and writing papers about specific works of art in the collections of the Washington University Mildred Lane Kemper Art Museum and Saint Louis Art Museum. Prerequisite: permission of the instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 4048. Gallery Publication Seminar

A collaborative project leading to the publication of a book based on an exhibition mounted by the Washington University Mildred Lane Kemper Art Museum. The course is open to advanced students from all schools within the University. For further information, contact Sabine Eckmann at sabine_eckmann@aimail.wustl.edu. Prerequisite: permission of the instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 408. Gender in Contemporary Art

Same as WGS 408, AMCS 408.

We study artists from 1960 to the present whose work thematizes gender, including Carl Andre, Robert Morris, Cindy Sherman, Lorna Simpson, and Mona Hatoum, and discuss how their work raises questions about representation of the body, spectatorship, and notions of identity. This course is intended to help students develop and refine their writing, and requires at least three papers. As we write and revise, we consider how gender theory has encouraged art historians to rethink writing and research methods: the topics we choose, the structure of our arguments, our relation to our subjects, and the audience we address. Prerequisites: at least one art history course at the 300 level or permission of instructor. Credit 3 units.

A&S SD TH FA AH

Art-Arch 409. Logistics of the Art Museum

Same as Art 409.

This seminar will explore the inside and inner logistics of the art museum. Readings and discussions concentrate on how the art museum determines what art is, how it stages artistic subjectivity, and how museums and art interpenetrate and reflect each other. What does it mean to collect art? Why is an artwork worth preserving? What happens to the museum when art leaves it through new media such as the Internet, the public domain, and the realm of politics? Alternating with theoretical reading are case studies that focus on the practices of New York’s MoMA, and temporary shows such as Documenta. We ourselves become critics and professionals as we examine displays at the Saint Louis Art Museum and the Pulitzer Foundation of the Arts and conceive of possibilities to curate the permanent collection of the Mildred Lane Kemper Art Museum on campus. Prerequisite: Art-Arch 211 Introduction to Modern Art, or permission of the instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 411. Art and Science in Renaissance Italy

This course is concerned with the sophisticated dialogue between art and science, between image making and scientific enquiry during the Italian Renaissance, a period when technology, science, and art were closely interconnected. In fact, our modern distinction between science and art did

not exist, and for the most part they were allied in both theory and practice. We examine the artistic and scientific activity of a range of Renaissance figures including Brunelleschi, Alberti, Leonardo da Vinci and Piero della Francesca, Antonio Santucci, Egnazio Danti, Stefano Buonsignori, Miniato Pitti, Andrea Vesalius, and Galileo. We also explore the role of the Medici and the papacy as patrons of both art and science, and the history of the construction and display of scientific instruments during the Renaissance. This class is only offered in Florence, Italy, only as part of the semester study abroad program. Credit 0 units.

FA AH

Art-Arch 414. Contemporary German Art

The seminar explores the specific nature of art made in Germany since the fall of the Berlin Wall in November of 1989. It inquires how the visual arts have directly and indirectly dealt with the effects of unification, bringing into focus the interdependency between art and the social, economic, and political worlds. The creation of the new Germany in 1990 affected decisive transformations that shaped new and often conflicting self-images of Germany. We consider how German artists engage with the make-up of the new Germany and discuss artworks that address Germany's relationship to its past and present. The memory of the Third Reich and the investigation of the East and West German pasts play roles as important as Germany's role within globalization. We concentrate on artworks executed during the 1990s and thereafter that challenge a new relation between art and the everyday, art and "reality," or art and non-art. In order to implicate the everyday into the aesthetic domain and vice versa, the artists employ mass and popular culture, integrate the viewer into the creation of aesthetic experience, and create spaces that compete with social environments, for example. Embracing all forms of visual media including painting, sculpture, installation art, photography, film, and video art, the course focuses on a new generation of German artists who grew up in either part of the divided Germany such as Franz Ackermann, Rudolf Herz, Sabine Hornig, Christian Jankowski, Via Lewandowsky, Michael Majerus, Jonathan Meese, and Neo Rauch. Prerequisite: at least one art history seminar on the 300 level or permission of the instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 415. Feminist Art and Theory 1970 to Present

Same as WGS 4151, AMCS 415.

How have feminist artists and theorists challenged the conventions of art history? This course begins with the feminist art world activism that arose in the 1970s in the context of the women's liberation movement. During this time, feminist artists sought to establish new forms of art education, venues for exhibiton, and creative working methods to provide alternatives to traditional art world institutions (which were often seen as ill-suited or unresponsive). We examine how current artists, building on this recent history, continue to develop feminist aesthetics and politics in a variety of contemporary practices, including installation art, body art, performance art, and video. We read texts by Griselda Pollock, Linda Nochlin, Lucy Lippard, Carolee Schneemann, Helene Cixous, Laura Mulvey, Lisa Tickner, Judith Butler, Adrian Piper, and Helen Molesworth, among others, and discuss the relationship between feminist theory and artistic creativity. Prerequisites: 300-level class in art history or 300-level class in gender studies or permission of the instructor. Credit 3 units.

A&S TH

Art-Arch 421. Minoan and Mycenaean Archaeology

A study of the Minoan civilization and late

Bronze Age Greece. Relations of the two civilizations to each other and to the Near East. Examination of archaeological evidence and its varied interpretations by scholars in relation to solving chronological and historical problems. Prerequisite: Art-Arch 331, or permission of instructor. Credit 3 units.

A&S CD TH FA AH

Art-Arch 422. Modern Art in Exhibition: Museums and Beyond

Same as AMCS 4213.

How does the collection and display of artwork create meanings beyond the individual art object? During the 20th century, enormous shifts occurred in exhibition design as artwork projected from the walls of the museum, moved outdoors to the space of the street, and eventually went online. We study an array of 20th-century exhibition practices and sites in their social and historical contexts, including the temporary exhibition, "the white cube," museum installations, and Web sites. During the seminar, we will examine how issues such as patronage, avant-gardism, nationalism, and identity politics have progressively brought museums and other exhibition spaces into question. Prerequisite: 300-level course in 20th-century art or permission of the instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 423. The Painted Page: The Art of the Illuminated Manuscript

This course about the fascinating art of manuscript production and decoration introduces students to books from the late Antique period through the Renaissance. Students study changing production materials and methods and diverse book types that developed over the centuries. We consider such scholarly issues as text/image and manuscript/monument relationships, functions of diverse secular and religious manuscript types, audience, and patronage. Visits to local libraries and museums are essential to the course, and the final project requires each student to research a special manuscript. Credit 3 units.

A&S TH FA AH

Art-Arch 426. Ancient Athens

Same as Classics 426.

A&S CD TH FA AH

Art-Arch 427. Athenian Vase Painting

Same as Classics 427, ARC 427.

From the late 7th to the late 4th century BC, Athenian artisans produced pottery of high quality that was particularly outstanding for its figured decoration. This seminar will investigate the technology and history of this craft, with particular emphasis on the iconography of the figured scenes. Topics discussed include the relationship of form, decoration, and function; the relationship between figured decoration and the textual sources; the role of pottery as an export; and genre scenes as a basis for investigating ancient Athenian society. Prerequisite: Art-Arch 331, ARC 331, Classics 350 or permission of the instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 430. Topics in Northern Renaissance Art

Credit 3 units.

A&S TH FA AH

Art-Arch 4321. Ancient Coins

Same as Classics 4321, ARC 4321.

The seminar is designed to research the rich world of Greek and Roman coinage by using the university's own resource, the J.M. Wulff collection of coins. Emphasis on coin typology, works of art or buildings illustrated on our coins, and the history of coinage. We use actual coins in the museum. Due to the delicate nature of the material, the course is by permission of the instructor only. Credit 3 units.

A&S TH FA AH

Art-Arch 4325. Sacred Cities in Medieval Art and Culture

Same as JNE 4325, Re St 4325.

Credit 3 units.

A&S TH FA AH

Art-Arch 433. Greek Vase Painting

Same as Classics 433.

This seminar will examine vase painting from the geometric period (circa 800 BC) to the end of the red-figure style (circa 350 BC), but the majority of class time is spent looking at Attic vase-painting of the 6th and 5th centuries BC. The iconography of Greek vases, particularly Attic black-figure and red-figure, provides an extraordinary view into the culture and beliefs of contemporary society. Some vases are clearly made as grave offerings, others as votive offerings at sanctuaries, and still others for use at home. The focus of this seminar will be the relationship of a vase's images to the context of its use. How much does the intended use and audience for the vase determine the images on it? These important questions have not received much attention by scholars, and class papers may possibly result in publications. Enthusiastic class participation required. Occasional responsibility for presentation of weekly readings. Class paper and presentation. Credit 3 units.

A&S TH FA AH

Art-Arch 435. The Parthenon

Same as Classics 435.

A study of the architectural design, aesthetic principles, engineering, and construction of the greatest Greek building. Its architecture is considered in conjunction with its immense sculptural program that revolutionized European art. We penetrate deeply into the background of this remarkable work of art and try to understand it by placing it in its proper context and comparing it with other similar efforts in Classical Greece. Prerequisite: senior standing or permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 437. Greek Sculpture

Same as Classics 437, ARC 437.

The development of Greek sculpture from its earliest beginnings (circa 800 BC) through the time of Alexander. Early influences from Egypt and the Near East. Sculpture's relation to changing artistic concepts and the changing character of Greek society. Prerequisite: Art-Arch 331, or permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 4371. Greek and Roman Pottery

Same as ARC 4371, Classics 4371.

Pottery is the most commonly found artifact on virtually all Classical sites. It therefore serves as an essential tool for the dating and interpretation of monuments and features in excavation. It also offers evidence for trade, diet, life style, and many other aspects of ancient life. The course will examine the typology and chronology of the major pottery types produced from the 6th century BCE to the 4th century CE, as well as the ways in which pottery has been used to throw light on the culture and society of the ancient Greeks and Romans. Prerequisite: permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 438. Ancient Painting

Same as Classics 4381.

A study of the rich world of painting in Greco-Roman art from the first renderings of mythological scenes, Classical frescoes, panel paintings known from texts, to the diverse styles of Roman frescoes and the masterful ancient mosaics. We emphasize Pompeii and attempt to recognize famous paintings. Prerequisites: at least one art history course at the 300 level or permission of the instructor.

Credit 3 units.

A&S TH FA AH

Art-Arch 4471. From Village to State in Ancient China

China is home to one of the world's oldest and longest surviving civilizations. This course examines the development of Chinese civilization from its beginnings in the early Neolithic period when many diverse regional village level societies developed around the country; throughout the period when these local societies gradually coalesced into numerous regionally related traditions; and ending in the Bronze Age with the emergence of politically unified states that controlled large territories. The archaeological evidence for this transition, including the evidence for regional interaction and conflict, urbanization, ceremony and ritual, and technological innovations are examined. Various theoretical perspectives also are introduced to give students a framework for interpreting this evidence. There are no prerequisites for this course, and students from all backgrounds are welcome for the diversity of perspectives they are able to provide in the seminar class format. Readings used for this class are in English, and consist of materials from a variety of disciplines (primarily archaeology, art history, anthropology, and history). Credit 3 units.

A&S TH FA AH

Art-Arch 4492. Production Systems in East Asia

Bronze, silk, and porcelain have been used in the making of some of East Asia's most important art. But what is involved in the production of the materials themselves, as well as in the objects made from them? This course looks at the archaeological and historical evidence for the origins of these various industries, and traces their development by examining them (as well as other materials such as iron and salt) in terms of the processes involved in their extraction, production, and consumption. Along with examining the roles that products made from these materials played in society, we look at the economic and other factors that influenced modes of manufacture. Requirements: summaries of weekly readings, final presentation, and final paper. Credit 3 units.

A&S TH

Art-Arch 4493. When Materials Become Media: Bronze, Silk, and Porcelain and the Production of East Asian Art

Same as East Asia 4493.

Bronze, silk, and porcelain are used to make some of the most spectacular works of East Asian art. This course looks at art of various media from its origins to its final realization, by examining the archaeological evidence for the processing of the metal ores, clay, or other materials from which the art is made; the sequence and process of its manufacture; and the roles that the final products played in temple, palace, or greater society. We also explore the social factors surrounding the production of these objects and the consequences of their creation and use. No prerequisites. Credit 3 units.

A&S TH FA AH

Art-Arch 450. Amsterdam in the Golden Age

Credit 3 units.

A&S TH

Art-Arch 4529. Seminar in Cultural Theory

Art-Arch 458. Vermeer

This course examines the life and work of one of the most admired and traditionally enigmatic artists of the 17th century. Vermeer's extant oeuvre of 35 paintings is studied in light of recent developments in the study of his technique, iconography, and artistic and social milieu. Credit 3 units.

A&S TH FA AH

Art-Arch 4612. Drawings

The history, techniques, connoisseurship, and collecting of European drawings from the 14th through the 19th centuries. Artists considered include Leonardo, Michelangelo, Rembrandt, Goya, Degas, and Van Gogh. Students are encouraged to look at drawings and to conduct research using the collections of the Saint Louis Art Museum, the Art Institute of Chicago, and the Nelson-Atkins Museum in Kansas City. Credit 3 units.

A&S TH FA AH

Art-Arch 4613. Renaissance Patronage

A seminar on patrons and patronage of Renaissance Italy, France, and Spain focusing on major families such as the Medici, Sforza, Este, and Gonzaga and on such prominent figures as Cosimo and Lorenzo de' Medici, Isabella d'Este, Francis I, and Philipp II. Credit 3 units.

A&S TH FA AH

Art-Arch 4614. Connoisseurship in Old Master Prints

Credit 3 units.

A&S TH FA AH

Art-Arch 4615. Caricature: The Culture and Politics of Satire

This course examines the golden age of caricature. Beginning with the prints of William Hogarth, we look at the caricatural traditions in France and England from the late 18th-century through the early 20th century. Special emphasis is placed on visual satire as a vehicle for social and political critique, on theories of humor (particularly Baudelaire and Bakhtin), and the development of a mass market for this imagery. Other figures to be discussed include Rowlandson, Cruikshank, Daumier, Gavarni, Philippon, and Gil. Students may also propose report topics in 20th-century material. We take advantage of a major collection of French caricature at the Mildred Lane Kemper Art Museum at Washington University, as well as collections available for study in Olin Library and at the Saint Louis Art Museum. Reading knowledge of French not necessary, but desirable. Prerequisites: Art-Arch 112e or 211e, or a 300-level course in modern European history or literature, or permission of the instructor. Credit 3 units.

A&S TH

Art-Arch 462. Topics in Renaissance Art and Architecture II

Same as E Lit 461.

A&S TH FA Lit

Art-Arch 4625. Venice

Same as MLA 4625.

A seminar focusing on the art of Venice, in particular on Bellini, Giorgione, and Titian. Special attention to the international reputations of these three artists and to problems of patronage, connoisseurship, and interpretation. Prerequisite: Art-Arch 361 or 362, or permission of the instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 4645. Introduction to American Culture Studies

Same as AMCS 645.

Art-Arch 4661. Mannerism

Same as Med-Ren 4661.

Italian and Italianate art after the High Renaissance (circa 1510-90), including consideration of style, historical events, cultural context, and artistic personality and biography. Artists include Michelangelo, Pontorno, Bronzino, Cellini, and Parmigianino. Prerequisite: Art-Arch 361, 362, or 3621, or permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 4662. Michelangelo the Architect

Same as Med-Ren 4662.

When, why, and how did the great Renaissance

sculptor, painter, and poet Michelangelo Buonarroti become an architect? This seminar surveys Michelangelo's built and unbuilt architecture, his methods and extant drawings, and the process and influence of his creations. Credit 3 units.

A&S TH FA AH

Art-Arch 4669. Rembrandt van Rijn

This seminar explores the connections between the life and work of Rembrandt. The biography of the artist serves as a foundation to explore the breadth of Rembrandt's activity as a painter, printmaker, and draftsman. Special attention is paid to original works in St. Louis collections. Prerequisite: permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 4671. Ancient Myths in Renaissance and Baroque Art

Same as Med-Ren 467.

Selected reading of ancient myths and the ways in which they were illustrated in ancient and Renaissance-Baroque art. Prerequisite: graduate or senior standing, or permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 4682. Gian Lorenzo Bernini: The Sculptor of the Roman Baroque

An examination of Bernini's development of Baroque sculpture in relationship to the art of Michelangelo and Giambologna as well as to religious and secular patronage in 17th-century Rome. Students are required to write research papers and give oral reports on assigned topics. Prerequisite: permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 4683. Cities in Asia

Same as IAS 468.

A&S TH

Art-Arch 4721. American Art and Culture, 1945-1960

Same as AMCS 472, Art-Arch 4721.

The rise and triumph of Abstract Expressionism has long dominated the story of American art following World War II. This new seminar puts Abstract Expressionism into context with parallel developments in the arts, photography, and film. Among the topics we consider: the conversation between émigré artists and American culture during and after the war; the emergence of a "noir" aesthetic in film and literature; the early work of Jasper Johns and Robert Rauschenberg and the so-called "aesthetic of indifference" in relation to Ab. Ex.; artistic collaborations at Black Mountain College; New York school photography and photojournalism; and the cultural impact of the A bomb. Prerequisites: a 300-level course on 20th-century art, photography, or history, or permission of the instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 473. Art and Culture in Fin-de-siècle America

Same as AMCS 473.

The particular climate of the fin-de-siècle and its expression in art, architecture, and letters. Concurrent development in Vienna, Paris, and London as basis for comparison. Themes include new theories of mind and perception, the fate of rationalism, the "crisis in bourgeois values," and redefinitions of gender. Prerequisite: permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 474. Topics in American Art

Credit 3 units.

A&S TH FA AH

Art-Arch 4743. Imagining the West

Same as History 4743.

The historical, visual, literary, and scientific encounter of Europeans and European Americans with the North American frontier. Examines how the West as myth and reality was assimilated into,

and imaginatively colonized by, both Europe and America from the pre-discovery period through the end of the 19th-century. Images of the first encounter, cultural dynamics of the colonization process, cultural resistance of native Americans. Field trips, guest lectures. Prerequisite: 100-, 200- or 300-level courses in art history or 300-level courses in European or American 19th-century comparative literature, history; or permission of instructors. Credit 3 units.

A&S TH FA AH

Art-Arch 475. The City In American Arts and Popular Culture: 1910–1940

Same as AMCS 476.

Using visual media-painting, prints and illustration, film and animation along with studies of vaudeville and other forms of popular and mass entertainment, this seminar analyzes the presence of the city as a theme that registers a range of cultural attitudes toward the modern. Through close readings of visual and verbal texts, we consider such issues as the relationship between work and leisure, and between high culture and popular arts. We look at critiques and celebrations as well as at how the popular arts help the ordinary man and women to negotiate the challenges of the new mechanized and overscaled urban environment. Prerequisite: 300-level course in American 20th century cultural history, American art, literature, or permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 4771. Gender in 19th-Century Art

Same as WGS 4771.

An examination of the representation of gender, i.e. the construction of male and female identities through images, and the role of gender in artistic practice. Readings and class discussion focus on American, French, and English art. Prerequisite: Survey of modern art, any 300-level course in 19th-century American/European art or culture, or permission of instructor. Credit 3 units.

A&S SD TH FA AH

Art-Arch 4776. Art and Culture in 1930s America

An interdisciplinary look at the production of culture in the United States during the Depression years between the stock market crash and the nation's entry into World War II. Focus on the evolving dialogue between aesthetic concerns and political commitment. We consider the role of the state as an agent of culture; the relationship between leftist politics and modernism, regionalism, and internationalism; debates over the nature of documentary photography; and attitudes toward the past in New Deal art, among other topics. Prerequisite: 300-level course in European or American 20th-century art or cultural history, concurrent enrollment in Art-Arch 372, or permission of the instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 4781. Urban Landscapes and The Meanings: “Meet me in St. Louis”

Same as Art-Arch 360.

A&S TH FA AH

Art-Arch 4785. Art and Culture in 1920s America

Same as AMCS 4785.

This interdisciplinary seminar examines the relationship between art and 1920s culture in the United States: how artists and critics thought about the nature of our cultural heritage; its rich possibilities and its limitations; the potential of technology and urbanization as well as the threats they pose to older cultural values; the nature of a multicultural society and the contributions of minority traditions to the evolution of American culture; the lure of the Southwest; early criticism of popular media; and the conversation between popular culture and high art. Prerequisite: Art-Arch

112e or permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 481. Topics in Modern Art

The sources, styles, influences, and content of the art of such artists as Gauguin and Cézanne examined in the context of contemporary movements in art and literature. Prerequisite: art history major, or permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 4816. Art and Culture in Fin-de-siècle Europe

Same as IAS 4816, EuSt 4816.

An examination of painting, photography, and the decorative arts in France during the period between the two World's Fairs of 1889 and 1900. Artistic movements include Symbolism (Van Gogh, Gauguin, Redon), later Impressionism (Monet and Morisot), Neo-Impressionism (Seurat and Signac), and Art Nouveau. Thematics include urban leisure and café culture, the agrarian ideal, the promises and threats of science and technology, the lure of the primitive and the impact of nationalism and feminism on the arts. Prerequisite: Art-Arch 211, any 300-level course in 19th-century art, literature, or history, or permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 4840. Architecture in the Americas

Art-Arch 4855. Contemporary Art in France

Same as French 4855.

This course covers artistic styles and movements from 1945 to the present, including art informel, art brut, new realism, the Situationist International, and new wave film. Artworks are studied in the context of cultural debates, on topics such as post-WWII reconstruction, decolonization, consumerism, the 1968 revolution, the influence of the mass media, and changing conceptions of national, ethnic, and gender identity. Reading knowledge of French is helpful. Prerequisite: permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 4861. Paul Gauguin in Context

Same as MLA 4861.

An examination of the art and career of Paul Gauguin (1848–1903) and the artistic, social, and political milieu in which he worked in France and Polynesia. Readings include the artist's writings, studies of avant-garde culture and primitivism in fin-de-siècle France, and the many new publications issued in 2003–04 in America, Tahiti, and France in recognition of the century since Gauguin's death in 1903. Prerequisite: Art-Arch 211, or any 300-level course in art history, or permission of instructor. Reading knowledge of French useful, but not required. Credit 3 units.

A&S TH FA AH

Art-Arch 4862. Exoticism and Orientalism in 19th-Century Art

Same as IAS 4862.

An examination of the traditions of exoticism and orientalism in European painting and photography from approximately 1800 to 1900. Readings include artists' writings, travel journals, literature, theory of colonialism, and exoticism. Sample topics to be discussed include: Delacroix, Ingres, Gerome, and the Orient; Flaubert and Maxime du Camp in Egypt; Gauguin and La Farge in Polynesia. Prerequisite: any 300-level course in art history or permission of instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 4863. The Photographic Muse: The Modern Artist and the Camera

An examination of the interplay of photography with painting and sculpture in European art from 1850 to WWI, with an emphasis on the fin-de-siècle. Readings address the history of the medium; the critical debates (starting with Baudelaire) over

photography as a tool of science or of art; the rise of ethnographic photography; the Symbolist ambivalence toward technology; and the development of Pictorialism at the turn of the century. Artists to be studied include Nadar, Moreau, Degas, Rodin, Steichen, Gauguin, Munch, the Nabis, Brancusi, and Picasso. Prerequisite: graduate standing. Credit 3 units.

A&S TH FA AH

Art-Arch 4864. Exoticism and Primitivism in Modern Art

Same as IAS 4864.

An interdisciplinary investigation of the development of exoticism and primitivism in Europe from the Enlightenment to WWI. Topics include exoticist representations of non-western cultures; the links between colonialism and orientalism; the intersection of discourses on race and gender with exoticism; and the anti-modernist impulse of fin-de-siècle primitivism. Sample artists and authors include Chateaubriand, Delacroix, Flaubert, Gauguin, Picasso, and Matisse. Prerequisite: any 300-level course in art history or permission of the instructor. Credit 3 units.

A&S TH FA AH

Art-Arch 4866. Cold War Cultures: Art in the Former Germanies

In both Germanies during the Cold War (1949–89), the creation of art, its reception and its theoretization were closely linked to the respective political systems: the Western liberal democracy of the Federal Republic of Germany (FRG) and the Eastern communist dictatorship of the German Democratic Republic (GDR). Reacting against the legacy of Nazi aesthetics, both Germanies revived pre-WWII German artistic traditions. Yet they both developed their own distinctive versions of modern and postmodern art at times in accord with their political cultures and at other times in opposition to them. Class discussion will focus on theories of modernism and postmodernism, collectivist and individualistic aesthetics, realist and abstract art, the internationalization of German art, the increasing importance of popular and mass culture, the fashioning of two distinct national identities, and the engagement with Germany's past. Tracing the political, cultural, and theoretical discourses in both German art worlds, we will analyze conventional art, new media, new art forms, popular culture, and international contemporary art exhibitions. This seminar makes use of German artworks in the collections of the Mildred Lane Kemper Art Museum and the Saint Louis Art Museum. For undergraduates with permission of instructor. Credit 3 units.

FA AH

Art-Arch 4888. The Presence of the Past: Contemporary German Art of the 1990s

This course explores contemporary German art executed after the reunification of the two Germanies in 1989. We focus on artworks that address the identity of the new Germany and its relationship to Germany's past. The memory of the Third Reich, the Holocaust, the revival of interest in Jewish culture, minority cultures, and the exploration of the divided and reunited nation are some of the topics we discuss. We consider all forms of visual media including photography, film, and video art. In addition to examining the work of second-generation artists such as Anselm Kiefer and Gerhard Richter, we concentrate on third-generation artists such as Gunther Forg, Georg Herold, Thomas Hirschhorn, Miaka Hauschild, Thomas Struth, Rosemarie Trockel, and Katharina Sieverding. This seminar is part of the preparation for an exhibition on contemporary German art to be held at the Mildred Lane Kemper Art Museum. Credit 3 units.

A&S TH FA AH

Art-Arch 4889. Reframing Feminist Art of the 1970s*Same as AMCS 4889, WGS 4889.*

Many feminist artists of the 1970s created collaborative projects exhibition spaces and discussion groups as central parts of their aesthetic and political practice. This course examines how these activities sought to give gendered meanings to the languages of art, provide access to art world institutions, and rethink the tenets of art history. We read texts ranging from documents of the period to recent art historical accounts, in order to develop new, art historical methods for studying the diverse collaborations, networks, and alternative exhibition sites that were fundamental to the feminist artwork of this decade. Prerequisite: permission of the instructor. Credit 3 units.

A&S TH FA AH**Art-Arch 4911. Aesthetic Politics: Power, Art, and Modern Culture**

German National Socialism, Italian Fascism, and Soviet Stalinism built heavily on aesthetic material on art, architecture, exhibition culture, film, and photography in order to legitimate totalitarian rule. They aspired to transform the state into a spectacular work of art while at the same time providing their citizens with peculiarly modern diversions. This course is intended to offer a theoretical, historical, and comparative framework through which to analyze the political dimensions of modern aesthetic culture. Readings and class discussions address issues such as the role of aesthetic experiences in shaping collective values, supporting dominant ideologies, and articulating counter-hegemonic agendas; the function of exhibition institutions such as museums, theaters, and public memorials in constructing national identities; and the role of mass-cultural technologies such as film, photography, and more recently the Internet in displaying political authority. Examining diverse materials from five different national contexts (Germany, Italy, Soviet Union, People's Republic of China, United States), this interdisciplinary seminar also inquires about the legacy of modern aesthetic culture to our own age of media politics and highly orchestrated spectacles of power. All readings and discussions in English. Prerequisite: permission of instructors. Credit 3 units.

A&S TH FA AH**Art-Arch 4976. The American Trauma: Representing the Civil War in Art, Literature and Politics***Same as History 4976.***A&S TH****Art-Arch 499. Honors Art and Archaeology**

A major research paper acceptable to the department. Prerequisite: permission of the department. Credit 3 units.

Art-Arch 4ABR. Art History and Archaeology Course work Completed Abroad

Credit 3 units.

Asian and Near Eastern Languages and Literatures

Chair**Fatemeh Keshavarz**Associate Professor
Ph.D., University of London**Endowed Professor****Robert E. Hegel**Liselotte Dieckmann Professor of
Comparative Literature
Ph.D., Columbia University**Professor****Beata Grant**

Ph.D., Stanford University

Associate Professors**Pamela Barmash**

Ph.D., Harvard University

Nancy E. Berg

Ph.D., University of Pennsylvania

Rebecca Copeland

Ph.D., Columbia University

Marvin H. Marcus

Ph.D., University of Michigan

Assistant Professors**Lingchei Letty Chen**

Ph.D., Columbia University

Martin Jacobs

Ph.D., Habilitation Free University of Berlin

Pauline Chen Lee

Ph.D., Stanford University

Elizabeth Oyler

Ph.D., Stanford University

Nargis Virani

Ph.D., Harvard University

Senior Lecturers**Xia Liang**

M.A., Beijing Normal University

Virginia S. Marcus

M.A., University of Michigan

M.A., New York University

Judy Zhijun MuPh.D., University of Illinois at
Urbana-Champaign**Fengtao Wu**

M.A., Indiana University-Bloomington

Lecturers**Hiroo Aridome**

M.A., University of Minnesota

Housni Bennis

M.A., Washington University in St. Louis

Giore Etzion

M.A., University of Michigan

Shino Hayashi

M.A., University of Wisconsin

M.A., University of Minnesota

Hanaa Kilany

Ph.D., University of Pennsylvania

Mijeong Mimi Kim

Ed.D., University of San Francisco

Kayo Niimi

M.A., Ohio State University

Rami J. Pinsberg

M.Ed., University of Missouri-St. Louis

Wei Wang

M.A., University of Minnesota

M.A., Beijing Language and
Culture University**Mohammad J. Warsi**

Ph.D., Aligarh Muslim University (India)

Professors Emeriti**Tamie Kamiyama**

Ph.D., Saint Louis University

Viola Liu

M.A., Seton Hall University

Robert E. Morrell

Ph.D., Stanford University

James C. Shih

Ph.D., University of California-Berkeley

Richard H. Yang

Ph.D., New School for Social Research

Betty Pei-shan Yue

M.A., Washington University

The department offers programs in the study of Asian and Near Eastern languages, literatures, and cultures, including both the traditional and modern periods of their development. A major in Asian and Near Eastern Languages and Literatures offers a solid preparation for graduate study in these areas. It also opens up career opportunities in diplomacy, business, law, journalism, and higher education.

Majors and minors are offered in Chinese, Japanese, Arabic, and Hebrew; a minor is offered in Persian; course work and language instruction are also offered in Hindi and Korean. The majors typically require completion of 27 units, 18 of which must be at the 300-level or above. Specific requirements usually include one 200-level foundational course, the equivalent of four years of modern language study, one course in the classical language, and two or more courses in the relevant literary tradition. In addition, all majors (except those who are writing a senior's Honors thesis, or who are fulfilling a capstone requirement in a second major) are required to take the ANELL Senior Seminar.

The minors require the completion of 18 units, 9 of which must be at the 300-level or above. Specific requirements normally include the equivalent of two years of modern language study and one or more courses in the relevant literary tradition: three of these courses must be at the 300-level or above. Students who are double majoring must keep in mind that no more than 6 units of the 27 units required for the major and 3 units of the required 18 units for the minor may be courses that are also used to satisfy the requirements of the other major.

Asian Languages and Literatures

As a major in one of the Asian languages and literatures (Chinese or Japanese) students can expect to gain proficiency in one or more of these languages, study the area's literary and cultural landmarks, and gain familiarity with Asian history and civilizations.

The Majors: To major in Chinese or Japanese language and literature, students must complete a minimum of 27 upper-level units, no more than 12 of which may be language courses.

All students majoring in Chinese or Japanese normally must complete the fourth-level modern language course or its equivalent. They must also complete a prerequisite 200-level foundational course, at least one semester of relevant classical literary language, the historical survey of the relevant literature, and the ANELL Senior Seminar. The department strongly encourages overseas study during students' junior year. As a major, students are expected to maintain a B average in all departmental courses. Each student's progress toward her or his goal is monitored on a regular basis and by a variety of means.

As a prerequisite to the major, students must complete first- and second-level language study or its equivalent: Chinese 101DQ-102DQ and 211-212 or Japan 103DQ-104DQ and 213-214. In addition, Chinese and Japanese majors are required to complete one lower-level foundational course, normally ACC 227 (Chinese Civilization) or ACC 226 (Japanese Civilization) respectively. Required upper-level courses for the major Core courses include language courses at the third-year or higher levels (to be chosen from and are to be selected from among Chinese 360, 361, or Japan 412, 413; Chinese 427, 428, or Japan 458, 459. Chinese majors are also required to take Chinese 410 or 411 (Classical Chinese); Japanese majors are required to take Japanese 460 (Classical Japanese).

Majors also are required to take a historical survey of the chosen literature: for Chinese majors, 341 and 342; for Japanese majors, 332 and 333. These courses must be taken in residence. Under special circumstances and with the approval of their adviser, students may substitute another upper-level literature course for one of these. Students may also select electives from upper-level courses in this and other departments to complement his or her literature studies. In addition, unless a student is writing an Honors thesis or fulfilling a capstone requirement for a second major, he or she is also required to take the ANELL Senior Seminar during the senior year.

The Minors: To minor in Chinese or Japanese, students must take a minimum of two years of language and at least 9 units of upper-level literature or culture courses, chosen in consultation with his or her minor adviser. Normally these courses include the historical surveys of the relevant literature. (For Chinese: 341 and 342; for Japanese: 332 and 333.) If a student places out of language

courses, he or she is required to take a total of 15 units of literature or culture courses.

Language Placement: Placement tests are required for all students entering our language programs, with the exception of those students who have had no previous knowledge of the language and are planning to enroll in the first semester of the first year of instruction. Students who test into second-year Chinese or Japanese and satisfactorily complete (with a grade of B- or better) at least one semester of language study may petition for 3 units of retroactive credit; students who test into third year or above and satisfactorily complete (with a grade of B- or better) at least one semester of language study may petition for 6 units of retroactive credit. Credit is limited to 3 units for testing into second year and 6 units for testing into third year or above. Please note that students with native language proficiency as determined by the individual language section, as well as students who enroll in a course below their placement level, are ineligible for retroactive credit units. Students who misrepresent the extent of their background so as to gain entrance to a course at the elementary or intermediate level will be dropped from that course.

Teacher Accreditation: Various states offer foreign language accreditation in Chinese and Japanese, as well as dual accreditation in language and social studies. Students intending to teach in primary or secondary schools should indicate this to the department as early as possible so appropriate arrangements can be made with the University's Department of Education.

Study Abroad: Students are strongly encouraged to participate in study abroad programs, usually during the junior year, and after a minimum of one year of language study. In Chinese, overseas study is available through the Duke Study in China Program, located in the People's Republic of China. In Japanese, a two-semester overseas program is available at Waseda University, Tokyo, and at Kyoto University through a program sponsored by a consortium of American universities. Students who participate in Washington University-sponsored and/or -approved overseas programs are normally able to apply most or all of these units to their undergraduate degree although normally no more than 9 upper-level units may be applied to the major. However, all transfer of credit is subject to review and approval by the department and the Study Abroad Office.

Transfer Credit: Normally no more than 6 units of credit earned at an institution other than Washington University (this does not include Washington University-approved study-abroad programs) may be applied to the major.

Senior Honors: Qualified majors are encouraged to apply for Senior Honors before the end of the junior year. Students wishing to pursue this option need to meet the minimum Honors requirements stated in this *Bulletin*, have outstanding performance in language work, and satisfactorily complete, during the senior year, Chinese/Japanese 486 (fall) and, if possible, Chinese/Japanese 487 (spring), to be taken in addition to all other

departmental requirements. Honors work will be supervised by a three-member departmental Honors Committee composed of a primary adviser and two additional faculty, which plans with each student special language work as needed and an independent Honors research paper in the student's area of academic interest.

Undergraduate Courses

ANELL 200. Asian and Near Eastern Languages and Literatures

Same as East Asia 200, Chinese 200, Japan 200, Comp Lit 200, Pers 200, Arab 200, Korean 200, MHBR 200, JNE 2001, WGS 200, Hindi 200.

A team-taught comparative introduction to the literatures and cultures of Asia and the Near East. Topics and approaches vary from year to year.

Credit 3 units.

A&S CD TH

ANELL 205. Literature and Film from Asia and the Near East

Same as JNE 2051, ACC 205.

A general introduction to fiction, plays, and films from Asia and the Near East. Each text is introduced by a faculty specialist in that language and culture, but most of our time is devoted to discussions of the texts. Our purpose is to explore ways that the study of literature and performance can illuminate cultures in general and several non-European cultures more specifically. And through comparisons between samples from any one culture and between our several cultures, we examine the richness of the traditions, and the modern experience, of writing and cinematic art from areas such as Egypt, Israel, Iran, India, China (including Taiwan and Hong Kong), Korea, and Japan. No prerequisites; all interested students are welcome. All readings available in English translation; all films are subtitled. Credit 3 units.

A&S CD TH

ANELL 208. Freshman Seminar: The Chinese-American Experience

Same as East Asia 2081, Chinese 208, Comp Lit 2081, AMCS 207.

The course discusses works by Chinese-American writers such as Maxine Hong Kingston, Amy Tan, Frank Chin, David Henry Hwang, among others. We discuss issues such as cultural in-betweenness, the politics of hyphenation (Asian-American, pan-Asian, trans-national, etc.), and femininity vs. feminism in Chinese-American identity negotiation. We also look into the immigration history of the United States and examine the role Chinese Americans play in this country's nation building. Literary and cinematic representations of the Chinese-American experiences and struggles are examined. All readings are in English. All films are subtitled. There are no prerequisites. Freshmen only. Credit 3 units.

A&S SD TH

ANELL 358. Modern Near Eastern Literatures

Same as Comp Lit 358C.

A&S TH **FA** Lit

ANELL 400. Asian and Near Eastern Languages and Literatures Senior Seminar

Same as BHBR 4001, Comp Lit 4002, Japan 400, Chinese 400, East Asia 4001, MHBR 400, Hindi 400, Korean 400, Arab 400, Pers 400.

Prerequisites: this course fills the senior capstone requirement for majors in Asian and Near Eastern Languages and Literatures; it will also be open to juniors majoring in ANELL and other students by permission of the instructor. Credit 3 units.

A&S CD TH

ANELL 500. Independent Study

Requires permission from instructor, department and dean, and a signed proposal. Credit 3 units.

ACC 106. Introduction to Hinduism, Buddhism, and East Asian Religions*Same as Re St 106.***ACC 111E. Introduction to Asian Art***Same as Art-Arch 111E.***A&S** CD LA **FA** AH**ACC 205. Literature and Film from Asia and the Near East***Same as ANELL 205.***A&S** CD TH**ACC 220. Special Interest Workshop: Performing Medieval Japanese Musical Narrative****ACC 223. Korean Civilization***Same as East Asia 223C, Korean 223C, IAS 223, East Asia 223.*

A comprehensive introduction to the study of Korea. Following a historical survey, the course examines key cultural themes and social institutions and explore aspects of Korea's relationship with its East Asian neighbors. Attention is also paid to contemporary issues, social problems, and cultural trends. Credit 3 units.

A&S CD TH**ACC 226. Japanese Civilization***Same as Japan 226, East Asia 226, IAS 226C, Japan 226C, East Asia 226C.*

The development of Japanese culture from antiquity to the present: an overview of Japanese cultural history, focusing on the interplay of crucial aspects of contemporary Japanese society and Japanese social psychology. Credit 3 units.

A&S CD SD TH **FA** SSP**ACC 227. Chinese Civilization***Same as East Asia 227C, Chinese 227C, IAS 227C, East Asia 227, Chinese 227.*

An introduction to Chinese culture through selected topics that link various periods in China's past with the present. Ongoing concerns include social stratification, political organization, and the arts, gender relationships and the rationales for individual behavior, and the conceptions through which Chinese have identified their cultural heritage. Our readings include literary, philosophical, and historical documents as well as cultural histories; there are two examinations and several short writing assignments. Credit 3 units.

A&S CD SD TH**ACC 235. Warrior Culture of Japan***Same as ACC 351, Japan 235, East Asia 235.*

From valiant medieval samurai to selfless imperial army soldier, the warrior stands as one of the most striking and universally recognizable images of Japanese identity. In this course, we investigate how his portrayal develops over the course of Japanese history. Credit 3 units.

A&S TH**ACC 2451. The Buddhist Traditions***Same as Re St 245.***A&S** CD TH **FA** SSP**ACC 250. The Hindu Tradition***Same as Re St 250F.***A&S** CD TH **FA** SSP**ACC 293C. Freshman Seminar: Images of East Asia: Geisha***Same as East Asia 293C, Japan 293C.*

In this course we consider the geisha as both a cultural construct and a historical phenomenon. Our approach is comparative, literary, and cross-cultural. How did the geisha, as a social institution, emerge in Japan? How has the image of the geisha been marketed and exploited there? How has it been reconstituted and similarly used in the United States? What does the enduring presence of the geisha in Japan reveal about its attitudes toward gender, social roles, and female sexuality?

What does the obsession with the geisha in the United States reveal about its attitudes toward Asia in general and Japanese women in particular? Texts for the course include Arthur Golden's *Memoirs of a Geisha*, Liza Dalby's *Geisha*, and selections of novels and short stories by Japanese authors—both male and female. In addition, we consider the way the geisha has been portrayed in television programs and films in both Japan and the United States. Credit 3 units.

ACC 294. Images of East Asia*Same as WGS 293, Japan 294, East Asia 294.*

A variety of topics offered individually which reflect the images of East Asian cultures. Credit 3 units.

ACC 303. Taoist Tradition

Credit 3 units.

ACC 309. Chinese Thought*Same as Re St 309.***A&S** CD TH WI**ACC 3091. Confucian Traditions***Same as Re St 3091.***A&S** TH**ACC 3162. Early Modern China: 1350–1890***Same as History 3162.***A&S** TH **FA** SSP**ACC 3192. Modern South Asia***Same as History 3192.***A&S** CD TH **FA** SSP**ACC 3401. Chinese Art and Culture***Same as Art-Arch 3401.***A&S** CD TH **FA** AH**ACC 3420. The Archaeology of Ancient China***Same as Art-Arch 3420.***A&S** TH **FA** AH**ACC 3421. The Archaeology of Northern East Asia****ACC 3423. Seminar in Asian Art: From Ancient Worlds to Contemporary Practice***Same as Art-Arch 3423.***A&S** TH **FA** AH**ACC 351. Warrior Culture of Japan***Same as ACC 235.***A&S** TH**ACC 4842. The Japanese Empire in Asia, 1874–1945***Same as History 4842.***A&S** CD TH**ACC 4911. The Nativist Dimension in Modern Japanese Culture***Same as East Asia 4911.***A&S** TH**ACC 4982. Topics in Chinese History: Women and Confucian Culture in Early Modern East Asia***Same as History 4982.***A&S** TH**Chinese****Chinese 101D. First-Level Modern Chinese I**

Introduction to the modern spoken and written national language of China. Five regular hours and additional drill or laboratory sessions as assigned by instructor. Students with some previous Chinese language background must take placement examination. Credit 5 units.

A&S LA**Chinese 102D. First-Level Modern Chinese II**

Continuation of 101D. Prerequisite: grade of B- or better in 101D, or placement by examination. Five regular hours and additional drill or laboratory sessions as assigned by instructor. Credit 5 units.

A&S LA**Chinese 106. Beginning Chinese for Heritage Speakers I**

This course is designed for students who have basic speaking and listening skills but no background in writing or reading. Three class hours plus one additional hour are required. Prerequisite: placement by examination. Credit 3 units.

A&S LA**Chinese 107. Beginning Chinese for Heritage Speakers II**

Continuation of 106. Emphasis on improving basic reading and writing skills. Three class hours plus one additional hour are required. Prerequisite: grade of B- or better in Chinese 106, or placement by examination. Credit 3 units.

A&S LA**Chinese 110. Basic Principles and Practice of Chinese/Japanese Calligraphy***Same as East Asia 110, Japan 110.*

Elementary approach to brush-and-ink writing of traditional Chinese/Japanese characters. Prerequisite: Chinese 101DQ-102DQ, Japan 103DQ-104DQ or concurrent registration, or permission of instructor. Two hours a week. Credit 1 unit.

A&S LA**Chinese 150. Freshman Seminar**

Credit 3 units.

A&S TH**Chinese 200. Topics in Asian and Near Eastern Languages and Literatures***Same as ANELL 200.***A&S** CD TH**Chinese 208. Freshman Seminar: The Chinese-American Experience***Same as ANELL 208.***A&S** SD TH**Chinese 211. Second-Level Modern Chinese I**

The standard second-year level of instruction in modern Chinese. Students learn both long and short forms of characters. Prerequisite: grade of B- or better in Chinese 102D, or placement by examination. Five hours a week, plus drill and laboratory sessions as required by instructor. Credit 5 units.

A&S LA**Chinese 211S. Chinese Language Study Abroad (second-year level)**

Not the same as Washington University courses 211, 212. Students must receive a grade of B- or better in order to earn any credit, and those wishing to continue language study at Washington University must take a placement test before enrolling in Chinese 360, 361 (Third-Level Modern Chinese I, II). Credit variable, maximum 4 units.

Chinese 212. Second-Level Modern Chinese II

The standard second-year level of instruction in modern Chinese. Students learn both long and short forms of characters. Prerequisite: grade of B- or better in Chinese 211, or placement by examination. Five hours a week, plus drill and laboratory sessions as required by instructor. Credit 5 units.

A&S LA**Chinese 212S. Chinese Language Study Abroad (second-year level)**

Not the same as Washington University courses 211, 212. Students must receive a grade of B- or better in order to earn any credit, and those wishing to continue language study at Washington University must take a placement test before enrolling in Chinese 360, 361 Third-Level Modern Chinese I, II. Credit variable, maximum 4 units.

Chinese 227C. Chinese Civilization*Same as ACC 227.***A&S** CD SD TH

Chinese 298. An Internship for Liberal Arts Students

Same as Ge St 2991.

Chinese 299. Independent Study

Credit variable, maximum 6 units.

Chinese 330. Topics in Chinese Literature and Culture

Same as East Asia 3301, IAS 3301, Comp Lit 3301.

Credit 3 units.

A&S CD TH

Chinese 341. Literature of Early and Imperial China

Same as East Asia 3411, IAS 3410.

An introduction to important genres and themes of Chinese literature through the study of major writers. Brief lectures on the writers' personal, social, intellectual, and historical contexts; most class time is devoted to student discussions of masterworks as an avenue for understanding Chinese culture during selected historical periods. Required for all Chinese major, and recommended for all Japanese and East Asian Studies majors. No prerequisites; all readings available in English translation. Credit 3 units.

A&S CD SD TH **FA** Lit

Chinese 342. Literature of Modern and Contemporary China

Same as Chinese 342, IAS 342, East Asia 3421.

An introduction to the major writers and works of Chinese literature from the turn of the 20th century to the present, including fiction, poetry, and film. We look at these works in their relevant literary, socio-political, and cultural contexts (including Western influences). Required for all Chinese majors and recommended for all Japanese and East Asian Studies majors. No prerequisites; all readings in English translation. Credit 3 units.

A&S CD SD TH **FA** Lit

Chinese 360. Third-Level Modern Chinese I

Emphasis on improving speaking, listening, reading, and writing skills. Texts include Chinese newspapers and modern literary texts. Open to undergraduates only. Prerequisite: grade of B- or better in Chinese 212, or placement by examination. Credit 5 units.

A&S LA

Chinese 360S. Chinese Language Study Abroad (Third-Year Level)

Not the same as Washington University courses 360, 361. Students must receive a grade of B- or better in order to earn any credit, and those wishing to continue language study at Washington University must take a placement test before enrolling in Chinese 427, 428 Fourth-Level Modern Chinese I, III. Credit variable, maximum 4 units.

Chinese 361. Third-Level Modern Chinese II

Continuation of advanced work in reading Chinese newspapers and modern literary texts. Open to undergraduates only. Prerequisite: grade of B- or better in Chinese 360, or placement by examination. Credit 5 units.

A&S LA

Chinese 361S. Chinese Language Study Abroad (Third-Year Level)

Not the same as Washington University courses 360, 361. Students must receive a grade of B- or better in order to earn any credit, and those wishing to continue language study at Washington University must take a placement test before enrolling in Chinese 427, 428 Fourth-Level Modern Chinese I, II. Credit variable, maximum 4 units.

Chinese 382. Writing Women of Imperial China

Same as East Asia 382, WGS 3820.

Women writers can be found throughout most of China's imperial history, and from the 16th cen-

tury on, there were an extraordinary number of women writing and publishing their poetry collections. Despite this fact, only a very few writings by women were included in the traditional literary canon and until recently, they were not considered worthy of scholarly attention. Fortunately, there is now a growing body of critical studies on, and translations of, these women writers. In this course, we explore the writings of Chinese women from the 1st through to the early 20th centuries, and discuss the changing historical and social contexts within which these women wrote and the obstacles of both genre and gender that had to be overcome in order to ensure that their voices were heard. Prerequisite: at least one course in Chinese literature or culture, or instructor's permission. Credit 3 units.

A&S TH

Chinese 400. Asian and Near Eastern Languages and Literatures Senior Seminar

Same as ANELL 400.

A&S CD TH

Chinese 406. Advanced Conversation and Composition (in China)

Credit variable, maximum 5 units.

A&S LA

Chinese 407. Advanced Conversation and Composition (in China)

Credit variable, maximum 5 units.

A&S LA

Chinese 408. Advanced Readings in Chinese (in China)

Credit variable, maximum 6 units.

A&S LA

Chinese 410. Introduction to Traditional Literary Chinese I

Selected readings in pre-modern Chinese texts. Required of all majors in Chinese and students in fields of specialization where knowledge of literary Chinese is normally expected. Prerequisite: grade of B- or better in Chinese 212, or instructor's permission. Credit 3 units.

A&S LA **FA** Lit

Chinese 411. Introduction to Literary Chinese II

Selected readings in pre-modern Chinese texts. Required of all majors in Chinese and students in fields of specialization where knowledge of literary Chinese is normally expected. Prerequisite: grade of B- or better in Chinese 410, or instructor's permission. Credit 3 units.

A&S LA **FA** Lit

Chinese 412. Advanced Conversation in Mandarin I

A course particularly designed to improve pronunciation in Mandarin and conversational skills. Limited to students who have substantial proficiency in Chinese character reading and composition. Prerequisite: grade of B- or better in Chinese 428, or instructor's permission. Credit 3 units.

A&S LA

Chinese 413. Advanced Composition in Chinese

This course is designed for students wishing to improve their ability to write letters, essays, reports, and other types of compositions in Chinese. There are assigned readings both on the art of writing Chinese and of writing models, as well as regular take-home writing assignments. This course is conducted entirely in Chinese. Prerequisite: grade of B- or better in Chinese 428 or instructor's permission. Credit 3 units.

A&S LA

Chinese 414. Readings in Classical Chinese Philosophy

Same as East Asia 4141, Re St 414, IAS 4140.

In this course we study Chinese philosophical texts from the classical period (circa 6th–3rd cen-

turies BCE). We read selections from the Analects, the Mengzi, the Xunzi, the Zhuangzi, the Daodejing, and the Hanfeizi, in addition to commentaries on these primary texts. The readings are in classical Chinese with occasional supplemental readings in English and modern Chinese. The aim of the course is to familiarize students with the language and grammar of Chinese philosophical texts, introduce students to the tradition of scholarly commentary, and explore a set of influential Chinese texts in the original language. Prerequisite: Chinese 411 or instructor's permission. Credit 3 units.

A&S CD TH

Chinese 420. Third-Level Modern Chinese I

Advanced work in modern contemporary Chinese with emphasis on historical, social, and modern literary texts. Integral part of basic Chinese language curriculum. Prerequisite: previous or concurrent registration in Chinese 410, 411. Credit 3 units.

A&S LA

Chinese 421. Third-Level Modern Chinese II

Advanced work in modern contemporary Chinese with emphasis on historical, social, and modern literary texts. Integral part of basic Chinese language curriculum. Prerequisite: previous or concurrent registration in Chinese 410, 411. Credit 3 units.

A&S LA

Chinese 427. Fourth-Level Modern Chinese I

Readings in advanced texts covering a wide variety of fields in social sciences and humanities. Prerequisite: grade of B- or better in Chinese 361 or 421, or placement by examination. Credit 3 units.

A&S LA

Chinese 427S. Chinese Language Study Abroad (Fourth-Year Level)

Not the same as Washington University courses 427, 428. Students must receive a grade of B- or better in order to earn any credit, and those wishing to continue language study at Washington University must take a placement test before enrolling in any advanced language class. Credit variable, maximum 4 units.

Chinese 428. Fourth-Level Modern Chinese II

Readings in advanced texts covering a wide variety of fields in social sciences and humanities. Required of all students desiring subsequent tutorial assistance from the department. Prerequisite: grade of B- or better in Chinese 427, or placement by examination. Credit 3 units.

A&S LA

Chinese 428S. Chinese Language Study Abroad (Fourth-Year Level)

Not the same as Washington University courses 427, 428. Students must receive a grade of B- or better in order to earn any credit, and those wishing to continue language study at Washington University must take a placement test before enrolling in any advanced language class. Credit variable, maximum 4 units.

Chinese 460. Fifth-Level Modern Chinese I

This course is designed for advanced students wishing to improve their skills in conversation, reading and writing of letters, essays, reports, and other types of compositions in Chinese. The reading material is composed of a variety of authentic texts, including newspapers, short stories, and essays. This course is conducted entirely in Chinese. Required of all students desiring subsequent tutorial assistance from the department. Prerequisite: grade of B- or better in Chinese 428 or 411, by result of the placement examination, or by instructor's permission. Credit 3 units.

A&S LA

Chinese 461. Fifth-Level Modern Chinese II

This course is designed for advanced students wishing to improve their skills in conversation, reading and writing of letters, essays, reports, and other types of compositions in Chinese. The reading material is composed of a variety of authentic texts, including newspapers, short stories, and essays. This course is conducted entirely in Chinese. Prerequisite: grade of B- or better in Chinese 428 or 411, by result of the placement examination, or by instructor's permission. Credit 3 units.

A&S LA

Chinese 463. Legal and Business Chinese

An intensive exposure to legal and business texts in Chinese, with the aim of developing reading and speaking fluency in these areas and mastering the requisite specialized vocabulary. Of particular interest to students in the joint J.D./M.A. and dual M.B.A./M.A. programs, but open to all students with advanced proficiency in written and spoken Chinese. Prerequisite: Chinese 428 or instructor's permission. Credit 3 units.

A&S LA

Chinese 467. The Chinese Theater

Same as East Asia 467, Drama 465, Comp Lit 477, IAS 467.

Survey of the performance and literary traditions of the Chinese theater from their pre-Tang origins to the present day. The course focuses on three forms: 14th-century zaju plays, 16th- and 17th-century chuanqi plays, and recent films from China, Taiwan, and Hong Kong. Background in either China studies or theater in other cultures recommended. Credit 3 units.

A&S CD SD TH FA AH

Chinese 470. Readings in Chinese Literature

Same as WGS 4701, IAS 4700, East Asia 470. Selected literary masterpieces in Chinese, including examples of poetry and prose. All readings and discussion in Chinese. Open to both graduate and undergraduate students. Prerequisite: permission of instructor. Credit 3 units.

A&S TH FA Lit

Chinese 4711. Topics in Religious Studies: Gender and Religion in China

Same as Re St 4711.

A&S TH FA SSP

Chinese 476. Reading Seminar in Chinese Traditional Fiction

Same as IAS 476, East Asia 476.

Extensive readings in major critical works in Chinese and English concerning fiction of imperial China, with emphasis on vernacular fiction of the Ming and Qing periods. Weekly discussions and short reading reports. Knowledge of Chinese language and literature normally required, but arrangements can be made for graduate students in such programs as East Asian Studies and Comparative Literature. Credit 3 units.

A&S TH FA Lit

Chinese 477. Reading Seminar in Chinese Traditional Poetry

Credit 3 units.

A&S TH FA Lit

Chinese 478. Reading Seminar in Chinese Traditional Theater and Drama

Credit 3 units.

A&S TH FA Lit

Chinese 479. Reading Seminar in Modern Chinese Literature

Same as IAS 479, East Asia 479.

Credit 3 units.

A&S CD TH FA Lit

Chinese 480. Reading Seminar in Popular Literature and Culture

Same as East Asia 4801, IAS 4801.

Credit 3 units.

A&S TH FA Lit

Chinese 481. Reading Seminar in Religion and Chinese Literature

Same as Re St 4811, IAS 481, East Asia 4811.

Credit 3 units.

A&S TH FA Lit

Chinese 482. Reading Seminar in Gender and Chinese Literature

Same as East Asia 482, WGS 482, IAS 482.

Prerequisite: Chinese 341 or instructor's permission. Credit 3 units.

A&S TH FA Lit

Chinese 486. Independent Work for Senior Honors

This course to be taken in the fall semester. Prerequisite: senior standing, eligibility for honors, and permission of the department. Credit 3 units.

Chinese 487. Independent Work for Senior Honors

This course to be taken in the spring semester. Prerequisite: senior standing, eligibility for honors, and permission of the department. Credit 3 units.

Chinese 489. Topics in Modern Chinese Literature

Same as History 4891, IAS 489, LH 489, East Asia 4891.

Prerequisite: permission of instructor. Credit 3 units.

A&S TH FA Lit

Chinese 4891. Topics in Chinese Literature and Culture: The Chinese City in the Global Context

Same as East Asia 4892, Comp Lit 4891.

In this course, we situate major Chinese cities such as Beijing, Shanghai, Taipei, Hong Kong, and Singapore in the global context to gain new perspectives on Chinese culture. We examine issues such as alienation, decadence, and cosmopolitanism that are closely associated with urban culture. We also focus on the global circulation of cultures and discuss the possibilities of conceiving a new cultural geography that allows us to view the world in a new kind of global spatial order, instead of looking at the world as composed of a body of nations. This new inter- and cross-cultural map shows that a global urban culture has been in the making within the proposed Chinese global cities and that in fact they share more in common with each other than with the cultures of the state where these cities exist. Literary texts, films, videos, and multi-media art works are examined. All readings are available in English. All films are subtitled. Prerequisite: instructor's permission. Credit 3 units.

A&S SS

Chinese 490. Topics in Chinese Literature and History

Same as LH 416, East Asia 490.

Prerequisite: permission of the department. Credit variable, maximum 3 units.

A&S TH FA Lit SSP

Chinese 498. Guided Readings in Chinese

Same as East Asia 498.

Prerequisite: senior standing, and permission of the instructor and the department chair. Course normally taken after successful completion of Chinese 428. May be repeated once for credit. Credit variable, maximum 3 units.

A&S LA

Chinese 500. Independent Study

Prerequisite: senior standing, and permission of the instructor and the department chair. May be repeated for credit. Credit variable, maximum 3 units.

Hindi**Hindi 105S. Basic Conversational Hindi in India**

An introduction to conversational Hindi offered on-site at Washington University's Summer Program in India. The course provides beginning students with the practical conversational skills needed to conduct their local research projects (see JNE 225S, Indic Civilization) and to experience daily living in a Hindi-speaking environment. It also provides an introduction to the Devanagari script and to the study of Hindi. Students are encouraged to continue their study of Hindi at Washington University. Credit 2 units.

Hindi 106S. Explorations in Hindi

This course is based on-site at Washington University's Summer Program in India. It is intended for students who already have some knowledge of Hindi. Students improve their existing skills in a Hindi-literate environment and explore the language on their own. Students are given an assignment (in literature, media study, translation, an interview-based project, etc.) that suits their interests and their level of proficiency in the language and that they complete in India under the guidance of a local Hindi instructor. Credit 3 units.

Hindi 111D. Beginning Hindi I

Same as JNE 111D.

An introduction to the most widely spoken language of South Asia. Along with an understanding of grammar, the course offers practice in all four skills: listening, speaking, reading, and writing. The Hindi (Devanagari) script is used for reading and writing. Note: students with some previous Hindi language background must take a placement examination. Credit 5 units.

A&S LA

Hindi 112D. Beginning Hindi II

Same as JNE 112D.

Continuation of 101D, devoted to the further development of basic skills—listening, speaking, reading, and writing—with a particular emphasis on the acquisition of speaking proficiency. Prerequisite: Hindi 111D, or placement by examination. Credit 5 units.

A&S LA

Hindi 151D. Advanced Beginning Hindi I

Designed for the student with some background in Hindi. Emphasis on review of grammar, increased fluency, and vocabulary enrichment. Prerequisite: placement by examination or instructor's permission. Credit 3 units.

A&S LA

Hindi 200. Topics in Asian and Near Eastern Languages and Literatures

Same as ANELL 200.

A&S CD TH

Hindi 201. Intermediate Hindi I

Same as JNE 2011.

Continuing practice in listening, speaking, and grammatical understanding. The Hindi (Devanagari) script is used for reading and writing. Prerequisite: grade of B- or better in Hindi 112D, or placement by examination. Credit 5 units.

A&S LA

Hindi 202. Intermediate Hindi II

Same as JNE 2021.

Continuation of Hindi 201. Prerequisite: grade of B- or better in Hindi 201, or placement by examination. Credit 5 units.

A&S LA

Hindi 225B. Introduction to Indic Culture and Civilization

A guided classroom tour of the cultures of the Indian subcontinent both past and present. Highlights of the journey include such topics as geography and climate; major historical events; reli-

gious expressions; arts and music; languages and literatures; foods and apparel; Indian cinema; women's issues, etc. The tour concludes with an exploration of the many influences on Indic culture in the West, with emphasis on contemporary North America. No prerequisites. Credit 3 units.
A&S TH FA SSP

Hindi 299. Undergraduate Independent Study
 Prerequisite: Hindi 202, and permission of the instructor and the department chair. Credit variable, maximum 6 units.

Hindi 350. Introduction to South Asian Literature in Translation: The Modern Hindi/Urdu Short Story
Same as Comp Lit 3508.

An introduction to the major writers and writings of the modern Hindi/Urdu short story, including the works of Premchand, Krishnan Chander, Nir-mal Varma, and others. Our discussion extends from the various thematic, literary, and linguistic worlds created by these various authors, to the social, historical, and political trends behind the development of the "New Story" over the past several decades. All readings are in English translation, and there are no prerequisites. Credit 3 units.
A&S CD TH

Hindi 400. Asian and Near Eastern Languages and Literatures Senior Seminar
Same as ANELL 400.

A&S CD TH

Japanese

Japan 103D. First-Level Modern Japanese I

An introduction to spoken Japanese following a systematic study of grammatical structures presented in context. Emphasis is on developing skills in oral communication through performance. Students with some previous Japanese language background must take the placement examination. Credit 5 units.
A&S LA

Japan 104D. First-Level Modern Japanese II

Continuation of Japan 103D. An introduction to spoken Japanese following a systematic study of grammatical structures presented in context. Emphasis is on developing skills in oral communication through performance. Prerequisite: grade of B- or better in Japan 103DQ. Credit 5 units.
A&S LA

Japan 110. Basic Principles and Practice of Chinese/Japanese Calligraphy

Same as Chinese 110.

A&S LA

Japan 200. Topics in Asian and Near Eastern Languages and Literatures

Same as ANELL 200.

A&S CD TH

Japan 213. Second-Level Modern Japanese I

Continued development of communication skills with special emphasis on speaking. Students develop reading/writing skills with an additional 300 kanji during the year. Prerequisite: grade of B- or better in 104DQ, or placement by examination. Credit 5 units.
A&S LA

Japan 214. Second-Level Modern Japanese II

Continuation of Japan 213. Continued development of communication skills with special emphasis on speaking. Students develop reading/writing skills with an additional 300 kanji during the year. Prerequisite: grade of B- or better in Japan 213, or placement by examination. Credit 5 units.
A&S LA

Japan 220. Special Interest Workshop: Performing Medieval Japanese Musical Narrative

Japan 225. Topics in Pre-Modern Japanese Literature: Geishas and Ghosts: Pre-Modern Literature in Japan and China

This course is designed as an introduction to pre-modern and early modern fiction in Japan and China. In the pre-modern period, the Chinese excelled in writing supernatural stories. The Japanese, on the other hand, spun yarns of love set in the licensed prostitution quarters. Since these stories of romance and adventure sprung up without Western influence, they offer Western readers a glimpse of a literary tradition different from their own. The course is intended for those with no background in either language or literature, and due to the intensive, compact form of a summer course, only excerpts of the works can be read. Lectures offer historical background, and class discussion helps students focus on the differences and similarities between these genres and works of literature they have themselves read in the past. Credit 3 units.

A&S TH

Japan 226. Japanese Civilization

Same as ACC 226.

A&S CD SD TH FA SSP

Japan 226C. Japanese Civilization

Same as ACC 226.

A&S CD SD TH FA SSP

Japan 235. Warrior Culture of Japan

Same as ACC 235.

A&S TH

Japan 293C. Freshman Seminar: Images of

East Asia: Geisha

Same as ACC 293C.

Japan 294. Images of East Asia

Same as ACC 294.

Japan 298. An Internship for Liberal Arts

Students

Same as GeSt 2991.

Japan 299. Independent Study

Prerequisite: Japan 213 and permission of the department. Credit variable, maximum 6 units.

Japan 324. A User's Guide to Japanese Poetry

Same as IAS 3243.

This course introduces the art and craft of Japanese poetry, one of the world's great literary traditions. Exploring the many styles of traditional verse—the poetic diary, linked verse, haiku, and others—and their historical contexts, we gain insights into Japanese aesthetics and study the unique conventions of Japanese poetic production that have evolved over a span of some 1,500 years. The course also incorporates a "haiku workshop" where we engage in group-centered poetry writing and critiquing. No prior knowledge of Japanese is required. Credit 3 units.
A&S LA

Japan 332C. The Classical Voice in Japanese Literature

Same as IAS 3323, East Asia 332C.

This survey of Japanese literature covers antiquity to the 17th century. Emphasis on the ideological and cultural contexts for the emergence of a variety of traditions, including poetry, diaries, narrative, and theater. Required of all Japanese majors and recommended for all Chinese majors. No knowledge of Japanese language is required. Sophomore standing and above recommended. Credit 3 units.

A&S CD TH FA Lit

Japan 333C. The Modern Voice in Japanese Literature

Same as IAS 3331, Japan 333, East Asia 333C.

This survey explores the emerging modern voice in Japanese literature, with emphasis on prose fiction. After a brief introduction to earlier centuries,

we focus on the short stories and novels of the 20th century. Among the authors considered include Natsume Soseki, Nagai Kafu, Tanizaki Jun'ichiro, and Nobel laureates Kawabata Yasunari and Oe Kenzaburo. Discussions center on issues of modernity, gender, and literary self-representation. Required of all Japanese majors and recommended for all Chinese majors. No knowledge of Japanese language required. Credit 3 units.

A&S CD TH FA Lit

Japan 336. The Floating World in Japanese Literature

Same as IAS 3360.

This survey of Japanese literature covers the 17th to the 19th century. Primary focus is on the Genroku era (1688–1703), which witnessed the growth of lively urban centers and the emergence of a robust literary voice. Emphasis on the ideological and cultural contexts for the development of a variety of new innovations in the genres of poetry (haiku), theater (kabuki and bunraku), and prose (kana zoshi). Recommended for both Japanese and Chinese majors. No knowledge of Japanese language is required. Sophomore standing and above recommended. Credit 3 units.

A&S CD SD TH FA Lit

Japan 351. Japanese Political Institutions (in Japan)

Credit 3 units.

A&S SS FA SSP

Japan 3511. Warrior Culture of Japan

Same as ACC 351.

A&S TH

Japan 352. Japanese Economic Institutions (in Japan)

Credit 3 units.

A&S S FA SSP

Japan 353. Japanese Social Institutions (in Japan)

Credit 3 units.

A&S SS FA SSP

Japan 354. Japanese Business Institutions (in Japan)

Credit 3 units.

A&S SS FA SSP

Japan 400. Asian and Near Eastern Languages and Literatures Senior Seminar

Same as ANELL 400.

A&S CD TH

Japan 412. Third-Level Modern Japanese I

Emphasis on further development of speaking, listening, reading, and writing skills. Prerequisite: grade of B- or better in Japan 214, or placement by examination. Credit 4 units for undergraduates, 3 units for graduate students. Credit variable, maximum 4 units.

A&S LA

Japan 413. Third-Level Modern Japanese II

Continuation of Japan 412. Emphasis on further development of speaking, listening, reading, and writing skills. Prerequisite: minimum grade of B- in Japan 412, or placement by examination. Credit 4 units for undergraduates, 3 units for graduate students. Credit variable, maximum 4 units.

A&S LA

Japan 445. Japanese Fiction

Same as East Asia 445, IAS 4450, WGS 445.

A study of the themes, styles, and genres of Japanese fiction as revealed in representative works of major authors such as Soseki, Tanizaki, and Kawabata. Topics include the question of the Japanese literary canon, the varieties of Japanese literary selfhood, literature by and about women, and tradition versus modernity. All works read in English translation. Prerequisites: junior standing

and 6 units of literature. Credit 3 units.

A&S CD TH WI **FA** Lit

Japan 446. The Japanese Theater

Same as IAS 446, East Asia 446.

An investigation, using English materials, of the major developments and forms of the Japanese theater, from Noh and its antecedents to the rise of a modern drama. In this course we are less concerned with the performative aspects of theatrical arts (though these are introduced via videos) than with the ways in which dramatic texts influenced and borrowed from the literary tradition. Readings from major theatrical texts, secondary studies on Japanese theater, and literary sources. Prerequisite: junior standing or permission of instructor. Credit 3 units.

A&S CD SD TH **FA** Lit

Japan 447. Japanese Film

Same as East Asia 4471, IAS 4470.

An overview of Japanese film as art form and cultural medium. A survey of the history, genres, and themes of Japanese film. Detailed exploration of films by Kurosawa, Mizoguchi, Ozu, and others to explore the range of "classical" Japanese cinematic styles. Focus on the manner in which literary works have been adapted to film. Coverage of the satiric films of Itami Juzo and Morita Yoshimitsu. Readings in film theory and history. Prerequisite: one course in Japanese or film history or theory, or permission of instructor. Credit 3 units.

A&S TH **FA** Lit

Japan 448. Japanese Poetry

Same as IAS 448, East Asia 4483.

A comprehensive survey of Japanese poetry from the 8th century to the present day. Topics include the development of the great tradition of court poetry in the Heian period (circa 800–1200) and its full flowering during the medieval period (circa 1200–1600), the influence of the Zen aesthetic, the emergence of linked verse and haiku, and the transformation of the classical tradition with the advent of the modern era. All works are read in English translation, although knowledge of Japanese is useful. Graduate students and Japanese majors are expected to read original materials extensively. Prerequisite: junior standing and 6 units of literature course work. Credit 3 units.

A&S TH **FA** Lit

Japan 449. Modern Japanese Women Writers: Madame Butterfly's Delinquent Daughters

Same as East Asia 4492, WGS 4494.

Japanese women have been scripted by Western (male) imagination as gentle, self-effacing creatures. From their (re)emergence in the late 19th century to their dominance in the late 20th, Japanese women writers have presented an image of their countrywomen as anything but demure. Struggling to define their voices against ever-shifting expectations and social contexts, the women they create in their fiction are valiant, if not at times violent. This course examines the various manifestations of the female image in female-authored modern Japanese fiction. Writers to be considered are Higuchi Ichiyō, Hirabayashi Taiko, Uno Chiyo, Enchi Fumiko, Yamada Eimi, and others. A selection of novels and shorter fiction is available in English translation, and students need not be familiar with Japanese. Prerequisite: 6 units of literature/women's studies and junior standing, or permission of the instructor. Credit 3 units.

A&S CD SD TH WI

Japan 458. Fourth-Level Modern Japanese I

Mastery of more sophisticated skills in both spoken and written Japanese. Newspaper articles, editorials, essays, short stories, etc., are selected for readings and discussions in accordance with the interests and needs of participating students. Prerequisite: grade of B- or better in Japan 413, or placement by examination. Credit 4 units for un-

dergraduates, 3 units for graduate students. Credit variable, maximum 4 units.

A&S LA

Japan 459. Fourth-Level Modern Japanese II

Continuation of Japan 458. Mastery of more sophisticated skills in both spoken and written Japanese. Newspaper articles, editorials, essays, short stories, etc., are selected for readings and discussions in accordance with the interests and needs of participating students. Required of all students desiring subsequent tutorial assistance from the department. Prerequisite: grade of B- or better in Japan 458, or placement by examination. Credit 4 units for undergraduates, 3 units for graduate students. Credit variable, maximum 4 units.

A&S LA

Japan 460. Pre-Modern Japanese I

Readings in classical literary texts using materials from standard modern annotated editions. Kambun introduced in second semester. Prerequisite: Japan 412-413, or concurrent registration. Credit 3 units.

A&S LA

Japan 461. Pre-Modern Japanese II

A continuation of Japan 460. Readings in classical literary texts using materials from standard modern annotated editions as well as the introduction of skills necessary for reading original texts, including kambun and hentaigana. Prerequisite: Japan 413 or concurrent registration; Japan 460 or equivalent. Credit 3 units.

A&S LA

Japan 462. Fifth-Level Modern Japanese I

A course intended for students with advanced proficiency in written and spoken Japanese who have had extensive study experience in Japan. The course objectives are: to achieve mastery of communication skills, to deepen understanding of Japanese structural patterns, and to expand vocabulary and control of idiomatic expressions. Emphasis on readings in contemporary texts and extensive practice with different styles of oral discourse. Class is conducted exclusively in Japanese. Required of all students who wish to do subsequent independent study or guided readings in Japanese. Prerequisite: successful completion of Japan 459 (minimum grade of B-), or placement by written and oral examinations. Credit 3 units.

A&S LA

Japan 463. Fifth-Level Modern Japanese II

A course intended for students with advanced proficiency in Japanese who have had extensive study experience in Japan. Emphasis on improving skills in both written and spoken Japanese acquired in Japan 462. Class to be conducted exclusively in Japanese. Prerequisite: grade of B- or better in Japan 462 or placement test in written and spoken Japanese. Credit 4 units for undergraduates, 3 units for graduate students. Credit variable, maximum 4 units.

A&S LA

Japan 464. Japanese Textual Analysis

Same as East Asia 4641.

This course introduces the advanced student of Japanese to a variety of prose narratives in the modern language. Readings, which include literary texts and topical essays on aspects of Japanese society and culture, reflect the needs and interests of the enrolled students. Focus is on close reading and syntactic analysis of the selected texts. Regular translation exercises gauge the mastery of grammar, syntax, and idiomatic usages. All readings are in Japanese, with class discussion conducted predominantly in English. A final translation project, to be chosen by the student in consultation with the instructor, are required. Prerequisite: Japan 458, or instructor's permission. Credit 3 units.

A&S LA

Japan 466. Legal and Business Japanese

An intensive exposure to legal and business texts in Japanese, with the aim of developing reading fluency in these areas and mastering the requisite specialized vocabulary. Of particular interest to students in the joint J.D./M.A. and dual M.B.A./M.A. programs, but open to all students with advanced proficiency in written and spoken Japanese. Prerequisite: Japan 459 or permission of instructor based on placement examination. Credit 3 units.

A&S LA

Japan 471. Topics in Japanese Culture

Same as East Asia 471.

A&S TH **FA** SSP

Japan 480. Topics in Buddhist Tradition

Japan 486. Independent Work for Senior Honors

This course to be taken in the fall semester. Prerequisite: senior standing, eligibility for Honors, and permission of the department. Credit 3 units.

Japan 487. Independent Work for Senior Honors

This course to be taken in the spring semester. Prerequisites: senior standing, eligibility for Honors, and permission of the department. Credit 3 units.

Japan 4911. The Nativist Dimension in Modern Japanese Culture

Same as East Asia 4911.

A&S TH

Japan 499. Guided Readings in Japanese

Same as East Asia 499.

Prerequisites: senior standing and permission of the instructor and the department chair. Course usually taken after successful completion of Japan 459. May be repeated once. Credit variable, maximum 3 units.

A&S LA

Japan 500. Independent Work

Prerequisites: senior standing and permission of the instructor and the department chair. May be repeated. Credit variable, maximum 3 units.

Near Eastern Languages and Literatures

As a major in one of the Near Eastern languages and literatures, students can expect to gain proficiency in one or more Near Eastern languages, study the area's literary and cultural landmarks, and gain familiarity with Near Eastern history and civilizations.

The Majors: Near Eastern Languages and Literature majors are available in Arabic and Hebrew. To major in Arabic or Hebrew language and literature, students must complete a minimum of 27 upper-level units, no more than 12 of which may be language courses. As a major, students are expected to maintain a B average in all departmental courses. Each student's progress toward her or his goal will be monitored on a regular basis and by a variety of means.

The prerequisites for majors in Arabic and Hebrew include successful completion of the first two-levels of language study or its equivalent and one lower-level foundational course: JNE 210 (Introduction to Islamic Civilization) for Arabic majors and JNE 208 (Introduction to Jewish Civilization) for Hebrew majors.

Required upper-level courses for the major include language courses at the third-year or higher levels. Students normally complete

four years of a single Near Eastern language (for the Hebrew or Arabic major), or three years of study in one language and one year in a second (for the Arabic major). Hebrew majors must take at least two semesters of Fourth-Level Modern Hebrew (MHBR 4101, 402, 420, or 421), as well as a minimum of one semester of classical Hebrew (BHBR 384, 385, or 440). All students are expected to maintain a minimum grade of B- in language classes.

In addition, majors in both Arabic and Hebrew must complete 15 units of relevant upper-level literature, culture and civilization courses, chosen in consultation with their adviser. (Please note that many courses in Near Eastern literatures and cultures can be found under Religious Studies, Comparative Literature, or Jewish, Islamic and Near Eastern Studies.) Unless a student is writing an Honors thesis or fulfilling a capstone requirement for a second major, he or she is also required to take the ANELL Senior Seminar during the senior year.

The Minors: Near Eastern Languages and Literature minors are available in Hebrew, Arabic and Persian. Minors must successfully complete a minimum of two years of language study and at least 9 units of upper-level literature or culture courses, chosen in consultation with his or her minor adviser. Students who place out of language courses must take a total of 15 units in literature/culture courses. All minors must take at least one course in the literature of their language area.

Language Placement: Placement tests are required for all students entering our language programs. Students who test into Intermediate Arabic, Hebrew, or Persian and satisfactorily complete (with a grade of B- or better) at least one semester of language study may petition for 3 units of retroactive credit; students who test into third year or above and satisfactorily complete (with a grade of B- or better) at least one semester of language study may petition for 6 units of retroactive credit. Credit is limited to 3 units for testing into intermediate and 6 units for testing into third year or above. Please note that students with native language proficiency as determined by the individual language section, as well as students who enroll in a course below their placement level, are ineligible for retroactive credit units. Students who misrepresent the extent of their background to gain entrance to a course at the elementary or intermediate level will be dropped from that course.

Teacher Accreditation: Various states offer foreign language accreditation in Arabic and Hebrew, as well as dual accreditation in language and social studies. Students intending to teach in primary or secondary schools should indicate this to the department as early as possible so appropriate arrangements can be made with the University's Department of Education.

Study Abroad: Students are strongly encouraged to participate in Washington University-approved study abroad programs in Israel, Egypt, and other countries of the Middle East. Study abroad is usually during

the junior year, and after a minimum of one year of language study at Washington University. Students who participate in Washington University-sponsored and/or -approved overseas programs are normally able to apply most or all of these units to their undergraduate degree although no more than 9 upper-level units may be applied to the major. However, all transfer of credit is subject to review and approval by the department and the Study Abroad Office.

Transfer Credit: Normally no more than 6 units of credit earned at an institution other than Washington University (this does not include Washington University-approved study-abroad programs) may be applied to the major.

Senior Honors: Qualified majors are encouraged to apply for Senior Honors before the end of the junior year. Students wishing to pursue this option need to meet the minimum Honors requirements stated in this *Bulletin*, have outstanding performance in language work, and satisfactorily complete, during the senior year, Arabic/Hebrew 488 (fall) and, if possible, Arabic/Hebrew 489 (spring), to be taken in addition to all other departmental requirements. Honors work will be supervised by a three-member departmental Honors Committee composed of a primary adviser and two additional faculty, which plans with each student special language work as needed and an independent Honors research paper in the student's area of academic interest.

Arabic

Arab 107D. Beginning Arabic I

Same as JNE 107D.

Introduction to modern Arabic; concentrates on rapidly developing basic skills in reading, writing, speaking, and understanding. Five class hours, including one culture hour, and additional drill or laboratory hours. Students with previous Arabic language background must take a placement examination. Credit 5 units.

A&S LA

Arab 108D. Beginning Arabic II

Same as JNE 108D.

Continuation of Arab 107D. Emphasis on enhancing skills in reading, writing, speaking, and aural comprehension of modern Arabic. Prerequisite: grade of B- or better in Arab 107DQ or placement by examination. Five class hours a week with additional drill or laboratory hours arranged by instructor. Credit 5 units.

A&S LA

Arab 112. Basic Arabic I

Elementary course provides basic competence in modern standard Arabic and introduces general aspects of Arabic culture. Emphasis on fast acquisition of speaking skills, although basic grammar and Arabic script also are introduced. Course intended to meet practical needs for travel and business. (*Note:* this course does not replace the Arabic 107-108 sequence in the College of Arts & Sciences.) Credit 3 units.

Arab 200. Topics in Asian and Near Eastern Languages and Literatures

Same as ANELL 200.

A&S CD TH

Arab 207D. Intermediate Arabic I

Same as Arab 207, JNE 207D.

Study of grammar of literary Arabic and reading

of annotated classical and modern prose texts; elementary composition; practice in speaking and comprehending modern Arabic. Prerequisite: grade of B- or better in Arab 108DQ or placement by examination. Five class hours a week with additional drill or laboratory hours set by instructor. Credit 5 units.

A&S LA

Arab 208D. Intermediate Arabic II

Same as JNE 208D.

Continuation of Arab 207D. Study of grammar of literary Arabic and reading of annotated classical and modern prose texts; elementary composition; practice in speaking and comprehending modern Arabic. Prerequisite: grade of B- or better in Arab 207D or placement by examination. Five class hours a week with additional drill or laboratory hours arranged by instructor. Credit 5 units.

A&S LA

Arab 307D. Advanced Arabic I: Media Arabic

Same as JNE 507D, JNE 307D.

Continuation of Arabic 208D. Competence in reading, writing, speaking, listening and culture is developed through intensive exposure to classical and modern standard Arabic in its written and audio-visual forms. Prerequisite: grade of B- or better in Arab 208D or placement by examination. Credit 4 units.

A&S LA

Arab 308D. Advanced Arabic II

Same as JNE 308D, JNE 508D.

A continuation of Arabic 307D. Continued integration of language development through reading, writing, speaking, and listening activities centered around advanced authentic material. This semester proves critical for making the transition from Modern Arabic to Classical Arabic, including Qur'anic Arabic. Continued development of colloquial Arabic. Prerequisite: Arabic 307D or equivalent. Credit 4 units.

A&S LA

Arab 355C. The Flowering of Islamic Literature, 500-1200

Same as Comp Lit 355C.

A&S CD TH **FA** Lit

Arab 400. Asian and Near Eastern Languages and Literatures Senior Seminar

Same as ANELL 400.

A&S CD TH

Arab 407. Fourth-Level Arabic I

Same as JNE 407.

Focused reading and discussion of classical and modern texts centered around selected topics in Arabic literature, poetry, and media. Continued development of oral, aural, and writing skills. Students' interests are taken into consideration before finalizing the selection of texts. Practice in writing and grammar. Prerequisite: grade of B- or better in Arab 308D or placement by examination. Credit 3 units.

A&S LA **FA** Lit

Arab 408. Fourth-Level Arabic II

Same as JNE 408I.

Readings and discussion in Arabic of selected classical texts. Students' interests will be taken into consideration before finalizing the selection of texts. Practice in writing and grammar. Continued development of colloquial Arabic. Credit 3 units.

A&S LA **FA** Lit

Arab 450. Topics in Classical Arabic Literature and Culture

Exploration of medieval Arabic belles-lettres (Adab). All texts read in Arabic. Prerequisite: senior standing. Credit 3 units.

A&S TH **FA** Lit

Arab 470. Topics in Classical Arabic Literature in Translation

Various themes in Arabic religious literature and Belles-Lettres (Adab), e.g., the intertwining of religion and politics, court culture and fashions, social critiques, gender roles, etc., are read in English. Credit 3 units.

FA Lit

Arab 471. Topics in Modern Arabic Literature in Translation

Same as Comp Lit 471, IAS 4710, JNE 471, Comp Lit 4715.

Modern Arabic narratives read in English translation foregrounding themes such as the conflict between tradition and modernity, civil war, poverty, alienation, religion and politics, and changing gender roles. Credit 3 units.

A&S TH FA Lit

Arab 488. Independent Work for Senior Honors

This course to be taken in the fall semester. Prerequisites: senior standing, eligibility for Honors, and permission of the department. Credit 3 units.

Arab 489. Independent Work for Senior Honors

This course to be taken in the spring semester. Prerequisite: senior standing, eligibility for honors, and permission of the department. Credit 3 units.

Arab 497. Guided Readings in Arabic

Same as JNE 497.

Prerequisites: senior standing and permission of instructor and department chair. Credit variable, maximum 5 units.

A&S LA

Arab 498. Guided Readings in Arabic

Same as JNE 498.

Prerequisites: senior standing, and permission of the instructor and the department chair. Credit 3 units.

A&S LA

Arab 500. Independent Work

Prerequisites: senior standing, and permission of the instructor and the department chair. Credit variable, maximum 6 units.

Biblical Hebrew**BHBR 300. Introduction to the Hebrew Bible/Old Testament**

Same as Re St 300.

A&S TH FA SSP

BHBR 301C. The Jews in the Ancient World

Same as JNE 301C.

A&S CD TH FA SSP

BHBR 302. Introduction to the History and Culture of Ancient Mesopotamia

Same as JNE 302.

A&S TH FA SSP

BHBR 305. Wisdom Literature of the Bible

Same as Re St 305.

A&S TH

BHBR 348. Medieval Jewish Travelogues, Chronicles, and Biographies

Same as JNE 348, JNE 548.

Medieval Hebrew literature includes a wide range of narratives, many of which are commonly classified as chronicles, travelogues, biographies or diaries. In this course, we explore a variety of authors and narratives from the 9th to the 17th centuries, originating from Muslim and Christian lands, the Middle East and Europe. We ask to what extent these texts mirror the personal experiences of their authors and to what extent they must be regarded as literary fictions. In addition,

we discuss the question of how pre-modern Jewish writers reflected on history. All texts are read in English translation. Prerequisite: JNE 208F, or instructor's permission. Credit 3 units.

A&S TH

BHBR 375. How the World Began: Creation Myths of the Ancient World

Same as Re St 375.

A&S CD TH WI FA SSP

BHBR 384. Introduction to Biblical Hebrew

Same as JNE 584, JNE 3841.

This course enables students to read the Bible in the original Hebrew. Review of Hebrew grammar. Intended for students with a foundation in modern Hebrew. Prerequisite: MHBR 214D or instructor's permission. Credit 3 units.

A&S LA

BHBR 385D. Topics in Biblical Hebrew Texts

Same as Re St 385D, JNE 385D, JNE 585D.

Prerequisite: BHBR 384, or instructor's permission. Credit 3 units.

A&S TH

BHBR 400. Guided Readings in Northwest Semitic Inscriptions

Prerequisite: permission of the instructor and the department chair. Credit variable, maximum 6 units.

A&S LA

BHBR 4001. Asian and Near Eastern Languages and Literatures Senior Seminar

Same as ANELL 400.

A&S CD TH

BHBR 4020. Jerusalem, the Holy City

Same as JNE 4020.

A&S CD SD TH

BHBR 440. Topics in Rabbinic Texts

Same as JNE 440, Re St 4401.

The course aims to introduce students to independent reading of selected rabbinic texts in the original language. We focus on a number of topics representing the range of rabbinic discussion, including legal, narrative, and ethical issues. At the same time, we study the necessary linguistic tools for understanding rabbinic texts. Prerequisite: BHBR 385 or MHBR 401 or instructor's permission. Credit 3 units.

A&S TH

BHBR 488. Independent Work for Senior Honors

Senior standing. Credit 3 units.

A&S LA

BHBR 4983. Guided Readings in Akkadian

Same as JNE 4987.

Prerequisite: permission of the instructor and the department chair. Credit variable, maximum 6 units.

A&S LA

BHBR 4984. Guided Readings in Aramaic

Same as JNE 4984.

Prerequisite: permission of the instructor and the department chair. Credit variable, maximum 6 units.

A&S TH

BHBR 4985. Guided Readings in Biblical Hebrew

Same as JNE 4985.

Prerequisite: permission of the instructor and the department chair. Credit variable, maximum 6 units.

A&S LA

BHBR 500. Independent Study

This course is intended to allow students who have progressed beyond the stage of BHBR 384 or 584 to do independent study in Biblical Hebrew at a

more advanced level. Prerequisite: permission of the instructor and the department chair. Credit variable, maximum 6 units.

Modern Hebrew**MHBR 105D. Beginning Modern Hebrew I**

Same as JNE 105D.

For the student with no knowledge of Hebrew. Students with background in Hebrew are required to take the placement exam and encouraged to consider MHBR 151D. Foundation for modern conversational Hebrew. Skills for writing and speaking introduced. Five class hours a week plus laboratory work. Limit: 15 students per section. Credit 5 units.

A&S LA

MHBR 106D. Beginning Modern Hebrew II

Same as JNE 106D.

Foundation for modern conversational Hebrew. Skills for writing and speaking introduced. Three class hours a week plus laboratory work. Limit: 15 students per section. Credit 5 units.

A&S LA

MHBR 151D. Advanced Beginning Modern Hebrew I

Same as JNE 151D.

Designed for the student with some background in Hebrew. Emphasis is on review of grammar, increased fluency, and vocabulary enrichment. This course prepares students for MHBR 106D. Limit 15 students. Credit 3 units.

A&S LA

MHBR 200. Topics in Asian and Near Eastern Languages and Literatures

Same as ANELL 200.

A&S CD TH

MHBR 213D. Intermediate Modern Hebrew I

Same as JNE 213D.

Reading and discussion on the intermediate level of selected topics pertaining to contemporary Israel. Review and further study of grammar and development of conversational skills. Prerequisite: grade of B- or better in MHBR 106D or placement by examination. Credit 5 units.

A&S LA

MHBR 214D. Intermediate Modern Hebrew II

Same as JNE 214D.

Intermediate modern Hebrew reading and discussion of modern Hebrew fiction. Development of language skills in special drill sessions. Conducted in Hebrew. Prerequisite: MHBR 213D or equivalent. Credit 5 units.

A&S LA

MHBR 306. Modern Jewish Writers

Same as Comp Lit 306.

A&S TH FA Lit

MHBR 320D. Third-Level Modern Hebrew I

Same as JNE 520, JNE 320D.

Improves proficiency in the oral and written use of modern Hebrew through reading and discussion of short stories, Israeli newspaper articles, and other selected materials. Students discuss, in Hebrew, current events and public issues related to contemporary Israeli society. Prerequisite: grade of B- or better in MHBR 214D or placement by examination. Credit 3 units.

A&S LA

MHBR 322D. Third-Level Modern Hebrew II

Same as JNE 322D, JNE 522D.

Credit 3 units.

A&S LA

MHBR 324. Hebrew of the Media

Same as JNE 3241.

Reading and discussion of newspaper articles. Viewing and analysis of television news programs and films. Prepares students to become familiar

with the language and typical issues of the Israeli media and to discuss in writing and speech the issues in the news. Prerequisite: MHBR 322 or by departmental approval. Credit 3 units.

A&S LA

MHBR 339C. Exile: Jews, Literature, and History

Same as JNE 339C.

A&S CD TH

MHBR 340. Israeli Women Writers

Same as JNE 340, WGS 340, JNE 540, JNE 340, JNE 440.

Study of selected novels and shorter fiction by women. Attention to the texts as women's writing and as products of Israeli literature. No knowledge of Hebrew necessary; all readings in English translation. Credit 3 units.

A&S CD SD TH WI FA Lit

MHBR 350. Israeli Culture and Society

Same as JNE 350.

A&S CD SD TH FA SSP

MHBR 387C. Topics in Hebrew Literature

Same as JNE 387C.

Hebrew works read in English translation. Prerequisite: sophomore standing; previous courses in literature recommended. Credit 3 units.

A&S TH FA Lit

MHBR 400. Asian and Near Eastern Languages and Literatures Senior Seminar

Same as ANELL 400.

A&S CD TH

MHBR 4010. Fourth-Level Modern Hebrew I

Same as JNE 4010.

Introduction to modern Israeli literature and literary analysis for the advanced student of Hebrew. Topics include selected genres, influential writers, and the relationship between literature and society. Conducted in Hebrew. Prerequisite: grade of B- or better in MHBR 321D, or permission of instructor. Credit 3 units.

A&S LA

MHBR 402. Fourth-Level Modern Hebrew II

Same as JNE 402.

Students with advanced proficiency maintain and develop reading, speaking, and writing skills. Class conducted in Hebrew. Readings focus on key works of Hebrew poetry and fiction from earlier in this century and from contemporary Israel; additional reading and discussion of essays and editorials from current Israeli press, viewing of films and current news broadcasts produced in Israel. Prerequisite: MHBR 4010. Credit 3 units.

A&S LA

MHBR 420. Topics in Modern Hebrew Literature

Same as JNE 420.

Various themes in Hebrew belles lettres, e.g., the intertwining of politics and literature, the survival of rabbinic metaphors. Consult *Course Listings* for current topic. Credit 3 units.

A&S LA FA Lit

MHBR 421. Study of Selected Texts in Modern Hebrew Literature

Major works in Hebrew belles lettres by writers such as Bialik and Agnon studied in detail and depth. Consult *Course Listings* for current topic. Credit 3 units.

A&S TH FA Lit

MHBR 488. Independent Work for Senior Honors

This course to be taken in the fall semester. Prerequisite: senior standing, eligibility for Honors, and permission of the department. Credit 3 units.

MHBR 489. Independent Work for Senior Honors

This course to be taken in the spring semester. Prerequisite: senior standing, eligibility for honors, and permission of the department. Credit 3 units.

MHBR 4973. Guided Readings in Hebrew

Same as JNE 4973.

Prerequisites: senior standing, and permission of the instructor and the department chair. Credit variable, maximum 5 units.

A&S LA

MHBR 4983. Guided Readings in Hebrew

Same as JNE 4983.

Prerequisites: senior standing, and permission of the instructor and the department chair. Credit variable, maximum 5 units.

A&S LA

MHBR 500. Independent Study

Prerequisite: senior standing, and permission of the instructor and the department chair. Credit variable, maximum 6 units.

Persian

Pers 116D. Beginning Persian I

Same as JNE 116D.

Introduction to modern Persian; concentrates on rapidly developing basic skills in speaking, reading, writing, and understanding modern Persian. Five class hours a week and additional drill or laboratory hours as assigned by instructor. Credit 5 units.

A&S LA

Pers 117D. Beginning Persian II

Same as JNE 117D, JNE 117D.

Introduction to modern Persian; concentrates on rapidly developing basic skills in speaking, reading, writing, and understanding modern Persian. Five class hours a week and additional drill or laboratory hours as assigned by instructor. Credit 5 units.

A&S LA

Pers 200. Topics in Asian and Near Eastern Languages and Literatures

Same as ANELL 200.

A&S CD TH

Pers 216D. Intermediate Persian I

Same as JNE 216D.

Rapid development of skills in speaking, reading, writing, and understanding modern Persian. Reading of annotated, classical, and modern texts; elementary composition. Prerequisite: Pers 117D or equivalent. Credit 5 units.

A&S LA

Pers 217D. Intermediate Persian II

Same as JNE 217D.

A continuation of Pers 216D. Emphasis on enhancing skills in speaking, reading, writing, and understanding modern Persian. Reading of annotated classical and modern texts; elementary composition. Prerequisite: Pers 216D or equivalent. Five class hours a week with additional drill or laboratory hours as assigned. Credit 5 units.

A&S LA

Pers 316. Advanced Persian I

Selected readings from classical Persian prose and poetry. Prose readings from historical, mystical, and ethical literature by such authors as Bayhaghi, 'Attar and Sa'di. Poetry from significant lyrical genres, such as qasida and ghazal, as well as examples from heroic and romantic epics. Continued emphasis on developing skills in writing, speaking, and understanding Persian. Frequent use of traditional music, slides, and videos to enhance cultural awareness. Prerequisite: Pers 217D or equivalent. Credit 3 units.

A&S LA

Pers 317. Advanced Persian II: Readings from Modern Literature

Same as JNE 517.

Selected readings from modern Persian prose and poetry. The section on prose includes readings from key 19th- and 20th-century texts carrying the debate on social and literary reform. Examples from novels, short stories, and plays by such authors as Hedayat and Sa'di studied. Poetry selections include works of traditional figures, such as Iraj Mirza. Focus on reformists such as Nima, Shamlu, and Forough. Class discussion emphasized and the use of music, slides, and videos continued. Emphasis on developing skills in writing, speaking, and understanding Persian. Prerequisite: Persian 316 or equivalent. Credit 3 units.

A&S LA FA Lit

Pers 390. Lyrics of Mystical Love, East and West

Same as Comp Lit 390.

A&S CD TH WI FA Lit

Pers 400. Asian and Near Eastern Languages and Literatures Senior Seminar

Same as ANELL 400.

A&S CD TH

Pers 456. Topics in Classical Persian Literature and Culture

An in-depth study of literary/cultural concepts, generic patterns, or intellectual currents in Persian literature from 10th to 18th centuries. Persian primary sources comprise the bulk of the reading. Each semester, a certain genre, time period, literary/intellectual figure, or text forms the main focus. Advanced reading knowledge of Persian required. Prerequisite: senior standing. Credit 3 units.

A&S TH FA Lit

Pers 457. Topics in Modern Persian Literature and Culture

An in-depth study of the modern developments in literary/cultural concepts, generic patterns, or intellectual currents in Persian literature from 18th century to present. Persian primary sources comprise the bulk of the reading. Each semester, a certain genre, time period, literary/intellectual figure, or text forms the main focus. Advance reading knowledge of Persian required. Prerequisite: senior standing. Credit 3 units.

A&S TH FA Lit

Pers 488. Independent Work for Senior Honors

Prerequisite: senior standing. Credit 3 units.

Pers 4972. Guided Readings in Persian

Same as JNE 4972.

Prerequisites: senior standing, and permission of the instructor and the department chair. Credit variable, maximum 3 units.

A&S LA

Pers 4982. Guided Readings in Persian

Same as JNE 4982.

Prerequisites: senior standing, and permission of the instructor and the department chair. Credit variable, maximum 3 units.

A&S LA

Pers 500. Independent Study

Prerequisites: senior standing, and permission of the instructor and the department chair. Credit variable, maximum 3 units.

Biology

Chair

Ralph S. Quatrano
Spencer T. Olin Professor
Ph.D., Yale University

Endowed Professors

Peter H. Raven
Engelmann Professor of Botany
Ph.D., University of California–Los Angeles

Barbara A. Schaal
Spencer T. Olin Professor in
Arts & Sciences
Ph.D., Yale University

Alan R. Templeton
Charles Rebstock Professor
Ph.D., University of Michigan

Professors

Garland E. Allen
Ph.D., Harvard University

Roger N. Beachy
Ph.D., Michigan State University

Ian Duncan
Ph.D., University of Washington

Sarah C. R. Elgin
Ph.D., California Institute of Technology

Ursula W. Goodenough
Ph.D., Harvard University

Tuan-Hua David Ho
Ph.D., Michigan State University

Robert G. Kranz
Ph.D., University of Illinois

Allan Larson
Ph.D., University of California–Berkeley

Jonathan B. Losos
Ph.D., University of California–Berkeley

Kathryn G. Miller
Ph.D., Johns Hopkins University

Philip A. Osdoby
Ph.D., Case Western Reserve University

Himadri B. Pakrasi
Ph.D., University of Missouri–Columbia

Craig S. Pikaard
Ph.D., Purdue University

Eric Richards
Ph.D., Harvard University

Paul S. G. Stein
Ph.D., Stanford University

Robert E. Thach
Ph.D., Harvard University

Associate Professors

Jonathan M. Chase
Ph.D., University of Chicago

Barbara Kunkel
Ph.D., Harvard University

Assistant Professors

Douglas L. Chalker
Ph.D., University of California–Irvine

Erik D. Herzog
Ph.D., Syracuse University

Tiffany Knight
Ph.D., University of Pittsburgh

Petra A. Levin
Ph.D., Harvard University

Michael M. Neff
Ph.D., University of Washington

Kenneth M. Olsen
Ph.D., Washington University

Joint Professors

James Cheverud
(Anatomy and Neurobiology, WUSM)
Ph.D., University of Wisconsin–Madison

Gayle J. Fritz
(Anthropology)
Ph.D., University of North Carolina–
Chapel Hill

Professors Emeriti

Oscar P. Chilson
Ph.D., Florida State University

Roy Curtiss III
Ph.D., University of Chicago

George B. Johnson
Ph.D., Stanford University

David L. Kirk
Ph.D., University of Wisconsin

Daniel H. Kohl
Ph.D., Washington University

Marilyn Krukowski
Ph.D., New York University

Rita Levi-Montalcini
M.D., University of Torino

Walter H. Lewis
Ph.D., University of Virginia

Barbara Pickard
Ph.D., Harvard University

Owen J. Sexton
Ph.D., University of Michigan

Nobuo Suga
Ph.D., Tokyo Metropolitan University

Biology is an excellent major for careers in medicine, dentistry, biological research, bioinformatics, biomedical industry, agriculture, ecology, conservation, or paramedical specialties.

Biology is an exciting, diverse field ranging from the molecular biology of individual cells to interactions among whole populations of organisms. Members of the biology faculty are recognized internationally for their research and bring a variety of strengths and teaching styles into the classroom. Particular areas of emphasis in the department are plant biology, evolutionary biology, and developmental biology. One of our emerita faculty members, Rita Levi-Montalcini, was awarded the Nobel Prize in medicine for her work on neural development.

As a biology major, you have a wide range of research opportunities. Students find the individual instruction and mentoring received while doing research with the faculty an important part of their undergraduate experience. Because more than 300 faculty

members conduct research in biology and biomedical sciences at Washington University, it is easy to find a project that suits your interests. Many students complete their research projects at the Washington University School of Medicine, one of the top-ranked medical schools in the country. Summer research fellowship programs are funded by the National Science Foundation and the Howard Hughes Medical Institute.

To help you plan your future, the biology department publishes a handbook that describes careers in the biotechnology industries, agriculture, science communication, teaching, and health-related areas such as veterinary medicine, dentistry, and psychology. Information on these careers and how to prepare for them is available in the Natural Sciences Learning Center of the Department of Biology. In addition, you may participate in the Biology Club, which sponsors speakers and other activities relevant to careers in biology.

The Major: You begin the biology major with Biol 2960, which is ordinarily taken in the spring of the first year. Chem 111A and 112A are also taken in the first year because they are required for Biol 2960. You then proceed to Biol 2970, 3050, and Chem 251 in the sophomore year. Biol 2960, 2970, and 3050 are required for majors and premedical and pre dental students majoring in other departments.

Also required for the major are Chem 151, 152, 252, and 257; Physics 117A, 118A (or 197, 198); and Math 131, 132. Math 233 is recommended if you are interested in biochemical research; Math 320 is valuable if your professional interests require training in statistics.

To complete the major, 18 units in biology at the 300 level or above are required. Of these, 4 must be earned in Biol 3050. No more than 3 units may be in history of science courses. Cross-listed courses originating outside the department may not be included in the 18 (except Biol 4202, Biol 4501 and Biol 4580), nor may Biol 303A, 307A, 343A, 345A, 346A, 365, 3651, 3652, 387, 390W, 4213, 4491, or 487. Majors are required to take at least one course from each of these three areas:

Area A: Biol 3041, 3191, 334, 3371, 337W, 349, 4501, 451

Area B: Biol 3151, 328, 3411, 4022, 4023, 4031, 4412, 441W, 4580

Area C: Biol 3501, 372, 381, 4181, 4182, 4183, 419, 4202

You also are required to take one of the following laboratory courses: Biol 3092, 3110, 3491, 3492, 404, 4191, 4193, 4342, 434W, 437, 4522.

You must take all courses required for a major in biology for a letter grade if a letter grade is offered. A grade of C– or better must be earned in all of these courses. In special circumstances, a departmental waivers committee will evaluate requests for exemptions from requirements for the major.

Research opportunities are available in your first or second year through Biol 200; such opportunities are available in the third and fourth years through Biol 500. Only 6

units of Biol 500 credit may be applied toward the 18 units of advanced credit required for the major.

In special cases students may earn credit for graduate courses offered by the Division of Biology and Biomedical Sciences.

The Minor: If you wish to minor in biology, you are required to complete Biol 2960, 2970, and 3050; Chem 111A, 112A, and Chem 251; and two advanced courses in biology selected from an approved list.

The Special Major in Biochemistry and Molecular Biology: Students wanting intensive study and research in biological chemistry may apply for admission to this special major after completing Biol 2970 and Chem 252. Grades of B+ or better should have been earned in these courses. This major also requires Chem 111A, 112A, 151, 152, 251, 252, 257, 401, and 402; Physics 117A, 118A; Math 131, 132, 233, and any other math courses required for physical chemistry; Biol 2960, 3050, 451 or 4501, two additional courses in advanced biochemistry, and at least two courses in a related field of biology or chemistry at or above the 300 level (an advanced laboratory course, such as Chem 358 or Biol 437 or 4024 is recommended). Also required are two semesters of independent study in biology or chemistry (Biol 500 or Chem 490). A thesis describing the result of this work must be approved by your academic adviser.

Senior Honors: Biology majors are encouraged to work for Senior Honors. You must have a 3.3 average in biology; a 3.3 average in mathematics, chemistry, and physics courses; and a 3.5 overall course average. To qualify for Honors, you must complete 6 units of Biol 500 and present a thesis from this work. You are advised to begin Biol 500 no later than spring of your junior year.

The biology department awards the Marian Smith Spector Prize to an undergraduate who has an excellent academic record and submits an outstanding Honors thesis. It also awards the Harrison D. Stalker Prize to a graduating senior whose college career is distinguished by scholarship, service, and breadth of interest.

See also related majors in Biomedical Engineering, Environmental Studies, Philosophy, Neuroscience, and Psychology (PNP), and related minors in Applied Statistics and Computation, Biomedical Physics, and History and Philosophy of Science.

For more information about majoring in biology, contact the Department of Biology.

Undergraduate Courses

Biol 110. Principles of Zoology

This course is open to students in the Freshman Summer Academic Program only. Credit 3 units.

Biol 112. Freshman Seminar: Introduction to Problem-based Learning in Biology

Small groups of students take responsibility for their own active learning in their team with guidance from an instructor. Each group in rotation considers four problems of biological importance such as rainforest destruction, coral reefs, laboratory diagnoses, sleep, high altitude, deafness, infertility, modern epidemics, clinical cases, genetic engineering, and cloned animals. Students find the background information by library searches and

integrate this knowledge in group discussions. Enrollment limited. Intended for but not limited to prospective biology majors. Prerequisite: High school biology, preferably an AP class. Credit 3 units.

A&S NS FA NSM

Biol 181. Freshman Seminar in Biology

A lecture course intended for first-year students that focuses on the practice and culture of biomedical research. Active researchers describe the biological context of their research, the specific questions formulated, the means by which they pursue the answers, and their data and conclusions. The focus is on process: how biologists pursue their profession in a research setting. Additional topics of clinical and contemporary interest are often included. Students are expected to attend all lectures. Must be taken Credit/No Credit. Credit 1 unit.

A&S NS FA NSM

Biol 200. Introduction to Research

An introduction to laboratory and field research in biology for first- and second-year students. Students work under the supervision of a sponsor in a setting of established, ongoing research. Prerequisites: permission of sponsor and the department. Credit/No Credit only. Credit variable, maximum 3 units.

A&S NS FA NSM

Biol 210A. Epic of Evolution: Life, Earth, and Cosmos

Same as EPSc 210A.

A&S NS FA NSM

Biol 280. DNA Science: A hands-on Workshop

An introduction to DNA, genetics, and the human genome, through lectures, lab activities, computer tools, and discussions. Your genetic identity, why mutations matter, and how we can use (and abuse) our newfound understanding to alter life forms will be considered. For non-science majors. Prerequisites: High school course in biology or chemistry; sophomore standing. Credit 4 units.

A&S NS

Biol 295. Introduction to Environmental Studies: Biology

Same as EnSt 295.

A&S NS

Biol 2960. Principles of Biology I

An introduction to biological molecules and biochemical strategies employed by the three domains of life. The flow of genetic information within cells is discussed in the context of cellular structure, organization, and function. Investigation and manipulation of genetic information by molecular genetic technologies, such as recombinant DNA, forms the final phase of the course. Weekly labs reinforce concepts from lecture and explore common laboratory techniques and computer-based resources. Prerequisite: Chem 111 and Chem 112 (concurrently). Three hours of lecture and two hours of lab per week. Credit 4 units.

A&S NS

Biol 2970. Principles of Biology II

A broad overview of genetics, including Mendelian assortment, linkage, chromosomal aberrations, variations in chromosome number, mutation, developmental genetics, quantitative genetics, population genetics, mechanisms of evolution, and phylogenetics. Three lectures and one laboratory period a week. Does not fulfill the laboratory requirement of the biology major. Prerequisite: Biol 2960, or permission of instructor. Credit 4 units.

A&S NS

Biol 303A. Human Biology

An overview of the basic biological processes in the human body. After a brief introduction to chemistry and cell biology, we examine healthy

function and disease of all the major systems of the human body. These include: the nervous, cardiovascular, renal, digestive, immune, and reproductive systems. This course is designed for students who do not plan to major in science and no science background is expected. Prerequisite: Sophomore standing. A student may not receive credit for both Biol 303A and Biol 2960, 2970, or UCollege B120, B1201, B121, B1211. Credit 3 units.

A&S NS FA NSM

Biol 3041. Plant Biology and Genetic Engineering

A lecture course that provides an introduction to plant development, genetics, physiology, and biochemistry with emphasis on processes that can be manipulated or better understood through genetic engineering. The second half of the course emphasizes gene structure, expression, and cloning as well as methods for introducing foreign DNA into plant cells and regenerating fertile plants in tissue culture. Examples of genetically engineered traits discussed include: engineered herbicide resistance; virus and insect resistance; delayed fruit ripening; the use of plants for production of industrial and pharmaceutical compounds. Prerequisite: Biol 3050. Credit 3 units.

A&S NS FA NSM

Biol 3050. Principles of Biology III:

Biochemistry and Physiology

Biochemical processes with emphasis on cell biology, genomics, and molecular diseases; systems physiology with emphasis on human physiology. There are 3 hours of lectures and 1 hour of discussion per week for the entire semester. For the first half of the course, there are 2 hours of computer lab per week. Prerequisites: Biol 2970 and Chem 251. Credit 4 units.

A&S NS

Biol 307A. Human Variation

Same as Anthro 307A.

A&S NS QA SD FA NSM

Biol 3092. Experiments with Plants, Cells, and Molecules

Introduction to the scope of modern plant biology. Exercises illustrate research themes and expertise of faculty of the Plant Biology Program, many of whom participate. Fulfills the upper-level laboratory requirement for the biology major. Prerequisite: Biol 3050. Chem 251 recommended. Two laboratory sessions and 1 hour of lecture and discussion a week. Credit 3 units.

A&S NS FA NSM

Biol 311. Vertebrate Structure

A functional and comparative approach to the anatomy of vertebrates and its development; all the major organ systems are examined. Fulfills the upper-level laboratory requirement for the biology major. Prerequisite: Biol 297A or Biol 3050. Two lectures and two laboratories a week. Credit 5 units.

A&S NS FA NSM

Biol 3151. Endocrinology

An overview of mammalian endocrine systems with an emphasis on human physiology and development. The interplay between systemic, local cell, and tissue interactions as well as the cell and molecular events associated with hormone action discussed. Examples of endocrine evolution and pathological conditions related to endocrine imbalances also included. Prerequisite: Biol 3050. Credit 3 units.

A&S NS FA NSM

Biol 317A. Conservation Biology

An introduction to the application of biological principles to conservation. Fundamental principles from genetics, evolution, and ecology discussed and then applied to issues such as species preser-

vation, habitat restoration, refuge design and management, human population growth, and global warming. Prerequisite: junior standing. Two lectures a week. Intended for nonmajors; does not count toward biology major. Credit 3 units.

A&S NS QA FA NSM

Biol 3182. History of the Life Sciences in the 20th Century

This course explores the vast changes that the life sciences underwent between 1890 and 2000, from a largely descriptive and qualitative, to a highly experimental and quantitative science. Topics include the rejection of Haeckelian morphology, the rise of experimental embryology, the rediscovery of Mendel and development of the Mendelian-chromosome theory, the new "ecology" of the Chicago school, the introduction of feedback and control systems in physiology, the synthesis of Mendelism and Darwinism, the rise of biochemistry and molecular biology, and the genomic revolution. In each topic, biological ideas are placed in their historical and social contexts. Prerequisites: At least a high school course in biology and/or permission of the instructor. Credit 3 units.

A&S NS

Biol 3191. Molecular Mechanisms in Development

One of the most exciting areas of modern biology is the study of embryonic development. The use of genetic engineering/recombinant DNA technology has revolutionized the way in which questions are asked and answered in this rapidly advancing field. Recent studies in model systems such as *Drosophila*, nematode, and *Xenopus* (among others) have provided new insights into the molecular mechanisms utilized to establish cellular identities and generate the pattern of differentiation critical to multicellular organisms. Information being gained and experimental tools being developed in these model systems are leading to important advances in our understanding of developmental mechanisms used in all organisms, including mammals. This course will provide an up-to-date and in-depth view of ongoing research in selected areas of developmental biology. Topics are introduced by lectures, but substantial class time is devoted to discussion. Reading assignments from the current scientific literature highlight the experimental approaches being used. How information from model systems is being applied to mammalian embryos will be discussed. Enrollment limited to encourage discussion. Prerequisite: Biol 3050. Credit 3 units.

A&S NS WI FA NSM

Biol 328. Principles in Human Physiology

This course is designed to provide students with an understanding of the function, regulation, and integration of the major organ systems of the body. Course content includes basic cellular function, control of neural and hormonal homeostatic mechanisms, and study of the circulatory, respiratory, digestive, urinary, musculoskeletal, nervous, endocrine, and reproductive organ systems. Prerequisite: Biol 3050. Credit 4 units.

A&S NS FA NSM

Biol 334. Cell Biology

Eukaryotic cell structure and function viewed from the perspective of modern cell biology. Lectures stress the control of the cell cycle; the role of membranes in such processes as secretion, transport, and hormone action; and the role of cytoskeleton in coordinating cellular responsiveness. Prerequisite: Biol 3050. Credit 3 units.

A&S NS FA NSM

Biol 3371. Eukaryotic Genomes

Same as History 5371.

An advanced exploration of the structure and function of DNA within the eukaryotic nucleus. Lectures cover topics of chromatin and chromo-

some structure, control of gene transcription, RNA processing, and DNA replication and repair. The relevance of these topics to the genetic basis of human disease is discussed. Throughout, the experimental data that shape our current understanding are emphasized. Course grades based on exams, problem sets, and short papers. Prerequisites: Biol 2970, Chem 251 (may be taken concurrently). Credit 4 units.

A&S NS

Biol 337W. Eukaryotic Genomes (Writing Intensive)

Course covers the same material as Biol 3371. No final exam is given. 50 percent of the grade is derived from two in-term exams: 50 percent of the grade is derived from two short papers (3 to 6 pages) and one long paper (10 to 12 pages) on topics related to the lecture material. Drafts of all three papers are required before the final paper submission. Credit 4 units.

A&S NS WI

Biol 3411. Principles of the Nervous System

Same as Psych 344, PNP 3411, Biol 4411.

The basic anatomical, physiological, and chemical organization of the nervous system; how nerve cells communicate with each other, the ionic basis of nerve signals, the function and properties of chemical agents in the nervous system, the development of neural circuitry, and how neurons interact to produce behavior. Prerequisite: Biol 3050; or Psych 340 and permission of instructor. Credit 3 units.

A&S NS FA NSM

Biol 343A. Plants, Environment, and Civilization

Human life, health, and civilization depend on plants. This course introduces basic plant biology, the role of plants in natural ecosystems, and the various uses of plants in both traditional cultures and in developed countries. Topics include the medicinal uses of plants, domestication of plants for agriculture, biotechnology, and plant conservation. Prerequisite: Junior standing or permission of instructor. Does not count toward upper-division credits required for the major. Credit 3 units.

A&S NS FA NSM

Biol 345A. Scientific Revolution

Same as History 345A.

Focus on the so-called "Scientific Revolution," 1500–1700, with emphasis on the work of Copernicus, Kepler, Galileo, and Newton in the astronomical revolution and the revolution in biology associated with William Harvey and Robert Hooke. Using Thomas Kuhn's thesis about scientific revolution and the critique of science and technology of Karl Marx and Friedrich Engels, the course examines the nature of scientific change and the relationship between scientific and social/economic change in the 16th and 17th centuries. Readings from both primary and secondary sources. A one-hour discussion section every other week. Does not count toward the biology major. Credit 3 units.

A&S NS FA NSM

Biol 346A. The Darwinian Revolution

Examines the scientific, economic, social and political background to the development of evolutionary theory in Europe and the United States from 1750 through the end of the 20th century. How were naturalistic theories of the origin of species crafted out of economic and social metaphors? Why has Darwin's work generated such controversy for 150 years? What is the consensus on Darwinian theory today? The first part of the course will focus on the historical and philosophical development of ideas about evolution, natural selection, and heredity, including the strong arguments mounted against Darwinian theory through the first two decades of the 20th cen-

tury. The second part of the course will deal with the development of evolutionary theory as it was integrated with Mendelian genetics (as population genetics), ecology, and eventually molecular biology in the period after 1930. The course concludes with an examination of several controversies that have greatly affected the course of evolutionary theory: the conflict between evolution and Christian fundamentalism, the concept of punctuated equilibrium, sociobiology, mass extinctions and the extinction of dinosaurs, and the origin of life. Emphasis is on understanding the process of science as practiced in evolutionary biology. No prerequisites. Credit 3 units.

A&S NS FA NSM

Biol 347. Darwin and Evolutionary Controversies

Same as History 347, AMCS 347.

Focus is on controversies in evolutionary biology from Darwin's day to the present. Most of the controversies concern scientific issues such as Kelvin's estimate of age of the earth, Jenkin's argument against blending inheritance, neutral variations, effects of isolation on the role of selection, mass extinction and "nemesism," but some address social issues such as evolutionary ethics and "scientific creationism." Emphasis in the readings is on primary sources, including Darwin's *Origin of Species*. Credit 3 units.

A&S NS WI FA NSM

Biol 349. Microbiology

This four-credit lecture course focuses on the molecular biology of bacteria, archaea, and viruses. Topics include: the bacterial cell cycle, gene regulation, stress response, cell-cell communication, viral and bacterial pathogenesis, microbial ecology, and metabolic diversity. Friday tutorials will stress analysis of primary literature with an emphasis on current research related to material covered in lecture. Prerequisites: Biol 2960, 2970, and 3050 or permission of instructor. Credit 4 units.

A&S NS FA NSM

Biol 3491. Microbiology Laboratory

After introducing students to the basics of bacterial growth and maintenance, this laboratory class will employ genomics and cell biology to explore various aspects of bacterial physiology. Prerequisite or corequisite: Biol 349. One hour lecture and five hours of laboratory per week. Fulfills the upper-level laboratory requirement for the biology major. Credit 3 units.

A&S NS FA NSM

Biol 3492. Laboratory Experiments with Eukaryotic Microbes

An introduction to diverse molecular and cell biology techniques used in model experimental organisms to explore fundamental biological questions. Experiments are performed using selected fungi and protozoans commonly used in major research efforts. Emphasis is placed on choosing the appropriate organism for the question posed using the most current technologies. Prerequisites: Biol 2960 and 2970 and permission of instructor. One hour of lecture and six hours of laboratory a week. Fulfills the upper-level laboratory requirement for the Biology major. Enrollment limited to 18. Credit 3 units.

A&S NS

Biol 3501. Evolution

Same as Biol 4501.

A general survey of organic evolution covering both micro and macroevolution. Topics include natural selection, adaptation, evolution of pathogens, formation of species, and phylogeny. Prerequisite: Biol 2970. Credit 4 units.

A&S NS FA NSM

Biol 365. Experience in the Life Sciences

Provides an opportunity to earn credit for non-classroom learning in the life sciences. A wide variety of activities qualify. For example, students might accompany a physician on rounds and prepare a paper on a specific organ system or disease, participate in a field or ecological study and report on the findings, help create a summer biology curriculum for children and report on its effectiveness, etc. Participants must arrange to work with a supervisor with whom they will meet on a regular basis, and commit themselves to at least 140 hours over two semesters. A work plan must be approved prior to registration. Progress report due at the end of one semester, and a final paper due after two semesters. Does not count toward upper-division credits required for the major. Credit: 1.5 units per semester, contingent on completion of two semesters. For more details see <http://www.nslc.wustl.edu/research.html> Credit/No Credit only. Credit variable, maximum 3 units.

A&S NS FA NSM

Biol 372. Behavioral Ecology

Same as EnSt 372.

This course examines animal behavior from an evolutionary perspective and explores the relationships between animal behavior, ecology, and evolution. Topics include foraging behavior, mating systems, sexual selection, predator-prey relationships, cooperation and altruism, competition and parental care. Prerequisite: Biol 2970 or permission of instructor. Credit 3 units.

A&S NS FA NSM

Biol 381. Introduction to Ecology

Same as EnSt 381.

This course explores basic ecological models and principles. Examples and original research from a wide array of taxa and ecosystems will be examined. Format will include lecture, discussion, and weekly small group quantitative exercises. Analytical examination of data and application of quantitative models will be a major component of this course. Prerequisites: Biol 295 or Biol 2970 or permission of instructor. Credit 3 units.

A&S NS

Biol 387. Undergraduate Teaching

Exceptional undergraduates serve as teaching assistants for laboratory and/or discussion sections in departmental courses. Normally 2 or 3 units are given a semester, subject to the approval of the instructor and the department. Credit may not be counted toward fulfilling the biology major; application form in Department of Biology Student Affairs office. Prerequisite: permission of instructor. Credit/No Credit only. Credit variable, maximum 3 units.

A&S NS FA NSM

Biol 3920. Global Impact of Biotechnology

Course will commence with a review of the means by which biotechnology can and may be used to alter biological organisms to impact nutrition, health, and population density of microorganisms, plants, animals, and humans, and the consequences of these alterations to the environment. The majority of the course deals with specific examples. Each lecture commences with statement of the problem, potential solution(s) to that problem by biotechnological intervention(s) and the economic, political, social, and ethical issues that would impact a decision as to whether to proceed and, if so, success or failure. Examples include both likely beneficial as well as decidedly adverse or unethical applications of biotechnology. Guest lectures provide broader ranges of expertise of the issues under discussion. There is one discussion session per week and the last eight to 10 are for student presentations. A diversity of reading material is provided on library reserve. Prerequisite: Senior status and one course in the biological sciences. Does not count toward upper-division cred-

its required for the major. Credit 3 units.

A&S NS

Biol 4021. Biochemistry of Plants

A lecture course for advanced undergraduate students interested in either biochemistry or plant biology. Emphasis is placed on processes unique to plants and photosynthetic microorganisms and interactions of these organisms with the environment. Topics covered include photosynthesis, nitrogen metabolism, mineral nutrition, actions of hormones, lipid metabolism, and secondary metabolism. In addition, lab demonstrations and computer exercises on the use of macromolecular databases and visualization of molecular interactions are offered. Prerequisite: Biol 3050 or permission of instructors. Credit 3 units.

A&S NS FA NSM

Biol 4022. Plant Developmental Genetics, Genomics and Model Systems

This course introduces students to fundamental research concerning plant developmental genetics, modern genome analyses, and model experimental organisms. The latter include higher plants, simple photosynthetic eukaryotes and photosynthetic prokaryotes. Reading of primary literature and computer-based genome database analyses are parts of the course. Prerequisite: Biol 3050. Credit 3 units.

A&S NS FA NSM

Biol 4023. How Plants Work: Physiology, Growth, and Metabolism

This course introduces students to the fundamentals of how plants grow, metabolize, and respond to their environment. Topics to be covered include the conversion of light energy into chemical energy through photosynthesis and carbon fixation, nitrogen assimilation, water and mineral uptake and transport, source-sink relationships and long-distance transport of carbon and nitrogen, cell growth and expansion, hormone physiology and physiological responses to a changing environment. Prerequisite: Principles of Biology III: Biochemistry and Physiology (Biol 3050), or permission of instructors. Credit 3 units.

A&S NS

Biol 4024. Plant Cells and Proteins Laboratory

This course focuses on methods for the biochemical analysis and imaging of plant proteins. Topics include measurement of protein concentrations, affinity purification of recombinant proteins, assessment of protein purity by SDS polyacrylamide gel electrophoresis, analysis of complex protein mixtures by two-dimensional gel electrophoresis, protein identification using mass spectroscopy, protein crystallization and an introduction to protein structural analysis. Students also transform plant cells in tissue culture in order to express recombinant fluorescent proteins that are visualized within living cells using fluorescence microscopy. The class meets at the Donald Danforth Plant Science Center. Transportation is provided. The course is designed for students contemplating a research career. Enrollment is limited to 8 students. Prerequisites: Biol 3050, Chem 252 and permission of Dr. Pikaard. Credit 3 units.

A&S NS

Biol 4031. Biological Clocks

Same as PNP 4031.

Biological clocks are the endogenous oscillators that coordinate physiological and behavioral rhythms in nearly all organisms. This course examines how these rhythms are generated and regulated. The material includes molecular, cellular and systems physiology and the relevance of biological timing to ecology and health in everything from protozoans to plants to people. Prerequisite: Biol 3050 and permission of instructor. Credit 3 units.

A&S NS WI FA NSM

Biol 404. Laboratory of Neurophysiology

Same as PNP 404.

Neurophysiology is the study of living neurons. Students record electrical activity of cells to learn principles of the nervous system including sensory transduction and coding, intercellular communication, and motor control. The course meets for 8 hours on Wednesdays. Students may leave the lab for up to 2 hours. Prerequisites: Biol 3411 or 3421 or Psych 4411 and permission of instructor. Biol 3411 may be taken concurrently. Credit 3 units.

A&S NS WI FA NSM

Biol 4170. Population Ecology

Same as EnSt 4170.

This course examines the ecological factors that cause fluctuation and regulation of natural populations and emphasizes the utility of mathematical models to assess the dynamics of populations. The course includes lecture, discussions, and computer labs using the programming language MATLAB. Emphasis is placed on principles as applied to conservation and management. Topics include assessing extinction risk of rare species, invasion dynamics of exotic species, demographic and environmental stochasticity, metapopulation dynamics, structured populations, the role of species interactions, and microevolutionary processes. Prerequisites: Calculus (Math 131 and 132), and at least one of the following: Biol 2970, EnSt 295. Credit 3 units.

A&S NS

Biol 4181. Population Genetics

An introduction to the basic principles of population and ecological genetics. Mechanisms of microevolutionary processes; integrated ecological and genetic approach to study the adaptive nature of the evolutionary process. Prerequisite: Biol 2970. Credit 3 units.

A&S NS FA NSM

Biol 4182. Macroevolution

An advanced introduction to the study of macroevolutionary patterns and processes with emphasis on the systematic methodology employed. Topics: theories of classification, phylogenetic reconstruction, testing of historical hypotheses, hierarchy theory, adaptation, extinction, speciation, developmental mechanisms of organismal evolution, biogeography. Prerequisite: permission of instructor. Credit 3 units.

A&S NS FA NSM

Biol 4183. Molecular Evolution

A rigorous introduction to the study of evolution at the molecular level. Topics include the origin, amount, distribution and significance of molecular genetic variation within species, and use of molecular data in systematics and in testing macroevolutionary hypotheses. Prerequisite: Biol 2970, or permission of instructor. Credit 3 units.

A&S NS FA NSM

Biol 419. Population and Community Ecology

Same as EnSt 419.

Basic principles of ecology at population, community, and ecosystem levels, including quantitative study of spatial and temporal patterns of biodiversity. Intended for students wanting a rigorous overview of ecological principles. Prerequisite: Biol 2970 or permission of instructor. Credit 3 units.

A&S NS FA NSM

Biol 4190. Ecological Methods and Quantitative Analysis

An introduction to the study of organisms in relation to their environment, this quantitative laboratory course focuses on the most commonly used techniques for the collection, analysis, and presentation of ecological data. Lectures and student activities focus on wildlife-habitat relations, hypothesis testing and experimental design, data description, analysis techniques, and ways of presenting

data. Topics covered include analysis of habitats, biotic sampling methods, analysis of populations, and analysis of communities. Basic statistics will also be covered. Concurrent enrollment in Biol 381 is highly recommended, though not required, as both courses supplement one another. Additionally, some background in math, such as algebra or calculus, is desired. Prerequisites: An introductory major-level course with some exposure to ecology and evolution. Credit 3 units.

Biol 4191. Biology Field Course in Ecology

An introduction to the study of organisms in relation to their environment, this field course focuses on the application of methods and techniques commonly used in ecological studies. Lectures focus on taxonomy, natural history, wildlife-habitat relations, hypothesis testing, experimental design, and research techniques. Field trips to local sites are made to conduct ecological studies at the level of organisms, populations, and communities. Lab time is used to process samples, collate, and analyze data. Prerequisites: concurrent enrollment in Biol 419 or a comparable course elsewhere with permission of the instructor. Credit 2 units.

A&S NS FA NSM

Biol 4193. Experimental Ecology Laboratory *Same as EnSt 4193.*

Design and interpretation of ecological experiments, with an emphasis on hypothesis testing, sampling methodology, and data analyses. Sessions address fundamental ecological questions and include field, greenhouse, and laboratory (microcosm) studies on a variety of taxa and ecosystems. Includes occasional Saturday field trips to local sites (e.g., forests, wetlands, prairies, streams) for in-depth study. Fulfills the upper-level laboratory requirement for the Biology major. One hour of lecture and 4 hours of laboratory per week. Prerequisites: Permission of instructor and at least one of the following: Introduction to Ecology (Biol 381), Behavioral Ecology (Biol 372), Conservation Biology (Biol 317A), Population and Community Ecology (Biol 419), or Evolution (Biol 3501). Credit will not be awarded for both 4191 and 4193. Enrollment is limited to 15 students. Credit 3 units.

A&S NS

Biol 4202. Evolutionary Genetics

Same as Anthro 4202.

A&S NS FA NSM

Biol 4213. Plants and American People: Past and Present

Same as Anthro 4213.

A&S SS FA SSP

Biol 427. Problem-Based Learning in Biomedical Sciences

Same as Biol 427.

Groups of five to eight students are presented with medical case studies that are then researched and discussed under faculty guidance. Students take major responsibility for their own learning within their teams. Limit: 30 students. Prerequisite: Biol 3050 and permission of instructor. Credit 3 units.

A&S NS WI FA NSM

Biol 4342. Research Explorations in Genomics

A collaborative laboratory investigation of a problem in genomics, involving wet-lab generation of a large data set (either genomic sequence or microarray analysis of gene expression) and computer analysis of the data. Prerequisites: Biol 2970, Chemistry 111/112, 151/152, Biol 3371 or Biol 437, and some familiarity with computers would be advantageous, but is not required. Permission of the instructor is required. Fulfills the upper-level laboratory requirement for the Biology major. Credit 4 units.

A&S NS

Biol 434W. Research Explorations in Genomics (Writing Intensive)

Students electing the writing option will be required to revise each of three papers (on finishing of their fosmid; gene finding in a human/chip comparison; and annotating their fosmid) at least once. Credit 4 units.

A&S NS WI

Biol 437. Laboratory on DNA Manipulation

Same as Biol 437.

An introduction to laboratory techniques for experimental manipulation of DNA (and RNA) molecules, including construction, isolation and analysis of plasmids, RNA, PCR products and sequencing. Molecular cloning experiments, RNA isolation, RT-PCR, Southern analysis and plant transformation are performed as class projects. Prerequisites: Biol 3050, Chem 152, and permission of instructor. One hour of lecture and eight hours of laboratory each week. This course fulfills the upper-level laboratory requirement for the Biology major. Enrollment is limited to 18. Credit 4 units.

A&S NS FA NSM

Biol 4412. Evolution of Animal Development

Understanding the molecular bases of animal development and how changes at the molecular and genomic levels have led to the evolution of novel developmental programs and morphologies. Prerequisite: Biol 3050 Credit 3 units.

A&S NS FA NSM

Biol 441W. Evolution of Animal Development (Writing Intensive)

Course covers the same material as Biol 4412 in a writing-intensive format. Prerequisite: Biol 3051. A student may not receive credit for both Biol 441W and 4412. Credit 3 units.

A&S NS WI

Biol 4491. Microbes and the Environment

Same as EPSc 449.

A&S NS

Biol 4501. Biochemistry

Same as Chem 456.

A&S NS

Biol 451. General Biochemistry

A study of structure-function relationships as applied to carbohydrates, proteins and lipids; intermediary metabolism of principal cellular components and general aspects of regulation. Prerequisites: Biol 3050, Chem 252 or equivalent, and permission of the department. Recommended for students who have achieved grades of B or better in Biol 3050 and Chem 252. Students may not receive credit for both Biol 451 and Chem 456. Credit 4 units.

A&S NS FA NSM

Biol 4522. Laboratory in Protein Analysis, Proteomics, and Protein Structure

In this laboratory course, students learn principles and methods of protein quantitation, protein purification, assessment of purity using SDS-polyacrylamide gel electrophoresis, separation of complex protein mixtures by two-dimensional gel electrophoresis, definition of units of enzymatic activity, and identification of proteins using antibodies and/or mass spectrometry. The final part of the course introduces students to concepts of structural biology including protein crystallization, x-ray crystallography and computer modeling of protein structures. Fulfills the upper-level laboratory requirement for the Biology major. Prerequisites: Chem 252 and either Biol 451 or Biol 4501/Chem 456. Permission of instructor required. Limit: 8 students. Eight hours of laboratory/lecture per week. Credit 4 units.

A&S NS FA NSM

Biol 4580. Principles of Human Anatomy and Development

Same as Anthro 4581.

A&S NS FA NSM

Biol 487. Undergraduate Teaching

Exceptional undergraduates serve as teaching assistants for laboratory and/or discussion sections in departmental courses. Normally 2 or 3 units are given a semester, subject to the approval of the instructor and the department. Credit may not be counted toward fulfilling the biology major; application form in Department of Biology Student Affairs office. Prerequisite: permission of instructor. Credit /No Credit only. Credit variable, maximum 3 units.

A&S NS FA NSM

Biol 493. Seminar in Advanced Biology

In special cases credit may be given for individual study. Topics and credit must be arranged with a faculty sponsor and approved by the department. Credit variable, maximum 4 units.

A&S NS FA NSM

Biol 4930. Seminar in Advanced Biology, Life Science Education

Preparation for, and analysis of results of a research study in life science education. An experimental plan must be developed and approved by faculty in Biology and by faculty in Education. Participants must make arrangements to carry out the research project working with an appropriate supervisor at a school, informal science institution, or other educational establishment. Research plan due at the end of one semester, and a final paper due at the end of the second semester. Prerequisite: Biol 3050; permission of the instructors. Intended for students in the BA/MAT program. 5-10 hour work per week under faculty/mentor supervision. 1.5 - 3.0 units per semester depending on time commitment. Credit variable, maximum 3 units.

A&S NS

Biol 500. Independent Work

Students work under the supervision of a mentor in a setting of established ongoing research. Prerequisites: junior or senior standing and permission of sponsor and the department. Credit/No Credit only. Credit to be determined in each case. Maximum of 6 units may be applied toward upper-level credits required for the major. Students expecting to do Honors begin Biol 500 no later than spring of the junior year. Credit variable, maximum 6 units.

Biol 500W. Biological Research Writing

Writing of scientific research papers. Independent research with a faculty mentor emphasizing preparation of research results for publication. Writing and revision of the major components of a research paper are conducted throughout the semester. Abstract (1 page), Introduction and literature review (3-7 pages), Materials and Methods (3-5 pages), Results (5-7 pages), Discussion (5-7 pages) plus referencing of literature and graphical presentation of results. 4 credits Credit 4 units.

A&S WI

Chemistry

Chair

Joseph J. H. Ackerman

William Greenleaf Eliot Professor
Ph.D., Colorado State University

Endowed Professors

Edward S. Macias

Barbara and David Thomas Distinguished
Professor in Arts & Sciences
Executive Vice Chancellor
Ph.D., Massachusetts Institute of Technology

Karen L. Wooley

James S. McDonnell Distinguished
University Professor in Arts & Sciences
Ph.D., Cornell University

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Charles Allen Thomas Professor
Ph.D., University of Minnesota

Professors

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Ph.D., University of California–Los Angeles

Peter P. Gaspar

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Michael L. Gross

Ph.D., University of Minnesota

J. Dewey Holten

Ph.D., University of Washington

Alfred G. Hortmann

Ph.D., Harvard University

T. Tom Lin

Ph.D., University of Pennsylvania

Ronald A. Lovett

Ph.D., University of Rochester

Kevin D. Moeller

Ph.D., University of California–Santa Barbara

Demetrios G. Sarantites

Ph.D., Massachusetts Institute of Technology

Lee G. Sobotka

Ph.D., University of California–Berkeley

John S. Taylor

Ph.D., Columbia University

Mark S. Wrighton, Chancellor

Ph.D., California Institute of Technology

Associate Professors

John R. Bleeker

Ph.D., Cornell University

Richard A. Loomis

Ph.D., University of Pennsylvania

Assistant Professors

Vladimir B. Birman

Ph.D., University of Chicago

Lev Gelb

Ph.D., University of Cambridge,
Cambridge, UK

Sophia E. Hayes

Ph.D., University of California–Santa Barbara

T. Joseph Kappock

Ph.D., Yale University

Richard Mabbs

Ph.D., University of Nottingham
Nottingham, UK

Joshua A. Maurer

Ph.D., California Institute of Technology

Thomas P. Vaid

Ph.D., Cornell University

Amy Walker

Ph.D., University of Cambridge,
Cambridge, UK

Joint Professors

George W. Gokel

(Molecular Biology and Pharmacology)
Ph.D., University of Southern California

Richard W. Gross

(Internal Medicine)

Ph.D., Washington University in St. Louis

Michael Welch

(Radiology)

Ph.D., University of London

If you are interested in discovering insights into nature and exploring new ways to meet the needs of our technological society and new methods for creating novel compounds and useful materials, chemistry is an excellent major to pursue.

Chemistry is a multifaceted science that extends into biology, medicine, physics, mathematics, business, and commerce. Studying chemistry provides the opportunity to explore the structure and constitution of the microworlds of atoms and molecules, the chemical and physical transformations that occur, and the principles that govern these changes.

Our program provides a strong foundation in the core areas of chemistry: organic, physical, inorganic, nuclear, theoretical. Special emphases in the department include such emerging interdisciplinary fields as organometallic, bioorganic, biophysical, macromolecular, polymer, environmental, and materials chemistry. The department has close research ties with the departments of Physics, Earth and Planetary Sciences, Biology, and Chemical and Mechanical and Aerospace Engineering, and with departments at the Washington University School of Medicine.

As an undergraduate major in chemistry, you study chemistry with renowned scientists, who are teacher-scholars dedicated to your learning experience. The department is small, and it has world-class instruments and facilities, which allow you to receive individualized instruction and to participate in cutting-edge science. You work closely with a faculty member to design and carry out an original research project. You also may participate in interdisciplinary research at the School of Medicine or the School of Engineering & Applied Science. Research internships at local companies also can be arranged.

A variety of creative and productive careers are available to you with a degree in chemistry. You may pursue a career in chemistry or such related professions as biochemistry, medicine, and chemical engineering. Most students continue in graduate or medical school, and some go on to business or

law school. Positions in government, industry, and education are available.

The Major: To prepare for a major in chemistry, you will take Chem 111A, 112A, 151, 152, 251, 252, and 257; Physics 117A and 118A or Physics 197 and 198; and Math 131, 132, and 233. Physics 217 and further mathematics courses are recommended. Chem 181, a seminar to introduce first-year students to research activities in the department, is optional. A working knowledge of computer programming and a foreign language, such as German or Russian, is encouraged but not required.

To major in chemistry, you must take a minimum of 18 units in advanced courses in chemistry or biochemistry, among which must be included Chem 401, 402, and 461, plus 9 units in chemistry at the 300 level or above (not all in the same chemistry subdiscipline and not including Chem 490 or 495). At least 3 of these 9 advanced units must be in a laboratory course, chosen from Chem 358, 435, 445, or 470.

You have the advantage of planning your course program with your adviser in accordance with your interests. Some graduate courses also are available to you as a senior. **Senior Honors:** To qualify for Honors, you must complete a minimum of 21 units in advanced courses in chemistry or biochemistry, among which must be included Chem 401, 402, 461, two additional advanced courses in chemistry, and two additional laboratories: one synthetic laboratory course (either Chem 358 or 470) and one physical chemistry laboratory course (Chem 435 or 445). Neither Chem 490 nor 495 can be used to satisfy the advanced laboratory requirements but Chem 495 can be used to satisfy an elective.

The Major with Concentration in Biochemistry: As a chemistry major with a concentration in biochemistry, you should add Biol 296A and 297A as prerequisites to the major and specify a minimum of 18 units in advanced courses in biology and chemistry, among which must be included Biol 334, 3371, or 349; Chem 456; Chem 401, 402, and 461; and at least 3 units of advanced-level biology or chemistry courses (suggested selections are Chem 358, 453, 464, 476, 520, and 577; Biol 3050, 531, and 548; and other advanced biochemistry courses as approved by the chemistry department).

Senior Honors: To qualify for Honors, you must complete a minimum of 21 units in advanced courses and have one laboratory course in advanced chemistry chosen from Chem 358, 435, 445, or 470.

Undergraduate Courses

Chem 111A. General Chemistry I

Systematic treatment of fundamental chemical principles and their applications. Particular reference to the concept of energy and its uses, gas laws, kinetic molecular theory, atomic and molecular structure, chemical bonding, and the periodic classification of the elements. Prerequisites: two years of high school algebra and one of high school chemistry, or permission of instructor. Credit 3 units.

A&S NS QA FA NSM

Chem 112A. General Chemistry II

Introduction to the principles of chemical equilibrium and to ionic solutions. Topics: ionic equilibria, galvanic cells, elementary chemical thermodynamics and kinetics, and molecular structure of coordination compounds. Three lecture hours and a problem-solving subsection hour. Sign-up for subsections will be conducted during the first two weeks of the semester. Prerequisite, Chem 111A or permission of instructor. Credit 3 units.

A&S NS QA FA NSM

Chem 151. General Chemistry Laboratory I

This course provides an introduction into basic laboratory techniques, the experimental method, and the presentation of scientific data, as well as direct experience with chemical principles and the properties and reactions of substances. The topics and experiments in this course complement the material covered in the Chem 111A lecture course. Students attend one four-hour laboratory session and one one-hour laboratory lecture every other week. Prerequisites: concurrent enrollment in Chem 111A or permission of the instructor. Credit 2 units.

A&S NS FA NSM

Chem 152. General Chemistry Laboratory II

This course provides an introduction to basic laboratory techniques, the experimental method, and the presentation of scientific data as well as direct experience with chemical principles and the properties and reactions of substances. The topics and experiments in this course complement the material covered in the Chem 112A lecture course. Students attend one four-hour laboratory session and one one-hour laboratory lecture every other week. Prerequisites: concurrent enrollment in Chem 112A or permission of the instructor. Credit 2 units.

A&S NS FA NSM

Chem 181. Freshman Seminar in Chemistry

A weekly lecture by a chemistry faculty member, or other scientist from academia or industry, on their current research activities. The goal is to provide students with a sampling of current research activities dealing with fundamental and applied problems in science and society that are being approached from a chemical point of view. Students will see how fundamental chemical principles can be obtained from experiment and theory and used to both better understand and make better the world we live in. Each week a different scientist presents a lecture or offers an additional activity. Intended primarily for freshmen who participate majoring in science, but interested upper-class students should also find the lectures interesting and stimulating. Students are expected to attend all lectures and associated activities during the semester. Enrollment is limited. Credit/No Credit only. Credit 1 unit.

A&S NS FA NSM

Chem 251. Organic Chemistry I

The first part of a two-semester survey of organic chemistry. An introduction to organic structures, reactions, and reaction mechanisms. Prerequisite: Chem 112A. Credit 3 units.

A&S NS FA NSM

Chem 252. Organic Chemistry II

Covers certain areas of organic chemistry in more detail than the prerequisite course, with special emphasis on the mechanisms and synthesis applications of organic reactions and on the organic chemistry of biological compounds. Prerequisite: Chem 251. Credit 3 units.

A&S NS FA NSM

Chem 257. Organic Chemistry Lab I

Introduction to laboratory methods in organic chemistry, with emphasis on methods of separation and purification of organic compounds as well as their syntheses. Prerequisites: Chem 112A,

152, and 251. One hour of lecture and five hours of laboratory a week. Credit 2 units.

A&S NS FA NSM

Chem 275. Chemical Analysis Methods in**Chemical Engineering**

Same as E63 CHE 375.

Chem 290. Freshman and Sophomore Research

Introduction to laboratory research for first- and second-year students. Students work under supervision of a faculty sponsor. Prerequisite: permission of the sponsor and the Department of Chemistry. Credit/No Credit only. Credit variable, maximum 3 units.

A&S NS FA NSM

Chem 358. Organic Chemistry Laboratory II

Introduction to the methods of qualitative organic analysis, including the use of chromatographic and spectroscopic techniques. One hour of lecture and six laboratory hours a week. An additional three to six hours a week usually are needed to complete laboratory work. Prerequisites: Chem 251, 252, and 257. Credit 4 units.

A&S NS WI FA NSM

Chem 400. Physical Science in 12 Problems

Exercises related to general chemistry, classical mechanics, quantum mechanics, statistical mechanics, thermodynamics, and kinetics, will be solved with numerical software. Each exercise will be accompanied by a lecture, a software template solving a problem, and a related take-home problem. The software will allow us to focus on, and treat in a transparent fashion, physical problems without the unwieldy idealizations and contrivances found in textbooks. Prerequisites: General Chem, concurrent with Chem 401 and prior or concurrent enrollment in General Physics. Credit 1 unit.

A&S NS

Chem 401. Physical Chemistry I

Introduction to quantum chemistry (with applications to elementary spectroscopy) and kinetics. Prerequisites: Chem 111A-112A, Math 233; prior completion of Physics 117A and 118A is strongly encouraged (but concurrent enrollment in Physics 117A will be accepted); or permission of instructor. Required course for all Chemistry majors. Credit 3 units.

A&S NS FA NSM

Chem 402. Physical Chemistry II

Introduction to chemical thermodynamics, statistical mechanics, and transport phenomena. Required course for all Chemistry majors. Prerequisites: Chem 111A-112A, Chem 401, Math 233, prior completion of Physics 117 and 118 is strongly encouraged (but prior completion of Physics 117 and concurrent enrollment in Physics 118 will be accepted); or permission of instructor. Credit 3 units.

A&S NS FA NSM

Chem 405. Spectroscopic Analysis

This course is an overview of instrumentation and techniques that are found in modern chemistry laboratories. We shall cover the design of experiments, including basic electronics, signal-to-noise considerations, and signal handling. We shall also discuss the applications of a wide variety of spectroscopies, including laser spectroscopies, vibrational spectroscopies, imaging techniques, surface analytical techniques, mass spectrometry, and NMR. Credit 3 units.

A&S NS

Chem 435. Nuclear and Radiochemistry Lab

Application of radiochemical techniques to problems in chemistry, physics, and nuclear medicine. Prerequisites: 3 units of physical chemistry and permission of instructor. One lecture hour and five hours of laboratory a week. Credit 3 units.

A&S NS FA NSM

Chem 436. Radioactivity and Its Applications

Introduction to the production and decay of radioactive nuclides, the structure and properties of nuclei, and the applications of nuclear and radiochemical techniques to current scientific problems. Prerequisites: one year each of chemistry, mathematics, and physics. Credit 3 units.

A&S NS FA NSM

Chem 445. Instrumental Methods: Physical Chemistry

A course providing experience with instrument components found in the modern laboratory: basic electronics, the computer as an instrument controller; instruments built with modular components; experiments in optical spectroscopy, cyclic voltammetry, and kinetics. Prerequisite: Chem 401 or 402. Credit 3 units.

A&S NS WI FA NSM

Chem 451. Organic Chemistry III

A lecture course that builds on the material in Chem 251, 252, covering in more detail certain topics in those courses while also introducing new topics. A transition to graduate-level study in organic chemistry; recommended for chemistry, biochemistry, and biology majors. Prerequisite: Chem 252. Credit 3 units.

A&S NS FA NSM

Chem 452. Synthetic Polymer Chemistry

A course that describes various methods for the synthesis and characterization of polymers. Copolymers, control of architecture, polymer reactivity, polymer properties, structure/property relationships, and applications of polymers will be discussed. Current topics of interest from the recent literature will also be covered. Prerequisite: Chem 252 or permission of the instructor. Credit 3 units.

A&S NS FA NSM

Chem 453. Bioorganic Chemistry

Concepts of organic chemistry are used to explore structure and reactivity of proteins, nucleic acids, oligosaccharides, biological membranes, and the molecular basis of drug action. Offered in alternate years. Prerequisite: Chem 252. Credit 3 units.

A&S NS FA NSM

Chem 456. Biochemistry

Same as Biol 4501.

A lecture course covering protein structure-function, information transfer, primary metabolism, compartmentation, energy transduction, biosynthesis, and drug action. Prerequisites: Biol 297 or permission of instructor and Chem 252. Recommended for students who have achieved grades of B or better in the prerequisites. Credit 3 units.

A&S NS

Chem 458. Chemical Reaction Mechanism**Journal Club**

This seminar meets for one hour each week. During the meetings, student participants are responsible for presenting topics from the current literature. The format of the presentation varies from informal talks to student-authored problem sets. Attendance at meetings is strongly recommended for all students who are currently taking the organic cumulative examinations. Prerequisite: Chem 252. Credit 1 unit.

A&S NS FA NSM

Chem 459. Organometallic Chemistry

Survey of organometallic compounds with discussion of their synthesis, structure, spectroscopy, and reactivity. Prerequisite: Chem 252. Credit 3 units.

A&S NS FA NSM

Chem 461. Inorganic Chemistry

Introduction to modern inorganic chemistry; emphasis on relation of structure and bonding to the chemical and physical properties of compounds. Prerequisite: Chem 401, or permission of instructor. Credit 3 units.

A&S NS FA NSM

Chem 464. Inorganic Biochemistry

A class in biological chemistry that emphasizes the role of metals in electron transfer and enzymatic catalysis. After a brief survey of essential concepts from biology, coordination chemistry, and spectroscopy, topics will include: electron transfer systems; oxygen transport and activation; metal ion acquisition, transport, and homeostasis; enzymes catalyzing atom transfer reactions and radical-mediated processes. Prerequisite: Chem 252; Chem 461 recommended but not required. Credit 3 units.

A&S NS FA NSM

Chem 465. Solid-State and Materials Chemistry

The course begins with basic crystallography and common inorganic structure types. With the aid of computer modeling, students learn to analyze, index, and refine X-ray powder-diffraction data. Students are then taught to use phase diagrams to assess the compositions and microstructures of materials produced by various synthetic or processing methods. Crystal nucleation and growth, defects, and ion-conduction mechanisms are also introduced. The course concludes with an analysis of the mechanical properties of materials from a chemistry perspective. What makes some materials strong, stiff, and resistant to fracture? Prerequisites: Chem 111A-112A. Credit 3 units.

A&S NS FA NSM

Chem 470. Inorganic Chemistry Laboratory

A laboratory course emphasizing both the synthesis of inorganic compounds and the study of their physical properties. Laboratory exercises will introduce novel synthetic techniques such as high-temperature synthesis and vacuum line manipulations. Compounds will be spectroscopically characterized by UV-visible, gas-phase infrared, and multinuclear and dynamic NMR spectroscopy. Measurements of electrochemical behavior, magnetic susceptibility, and electrical conductivity will be performed. Prerequisite: Chem 461 or consent of the instructor. Credit 3 units.

A&S NS WI

Chem 475. Chemical Biology

This course is a survey of modern chemical biology focusing on the application of organic chemistry to biological problems. A variety of topics from the synthetic construction of DNA, proteins, and post-translation modifications to computational biology will be discussed. Course assignments will consist of two homework assignments and an original research proposal. A mandatory discussion section will accompany the course. The discussion section will be used to review current and classic literature in the field. Credit 3 units.

A&S NS

Chem 490. Introduction to Research

Advanced laboratory work on a selected topic in chemistry. Prerequisite: permission of the department. Credit/No Credit only. If this course is to be submitted for Honors, the student must file the Honors form available at the chemistry department office before the end of junior year. Arrangements for registration should be completed during the preregistration period. Credit variable, maximum 6 units.

A&S NS FA NSM

Chem 495. Advanced Undergraduate Research in Chemistry

The student conducts research supervised by a chemistry department faculty member. At the end of the semester, the chemistry supervisor chairs a faculty committee to evaluate an oral public presentation and/or a concise written report, and a letter grade is assigned. The committee members and completion requirements must be approved by the supervisor prior to registration. This course may provide a capstone experience (see Chem 499) but

does not fulfill the writing intensive requirement. The units earned may be applied as elective advanced credits toward a Chemistry major with Latin honors eligibility. Course may be taken only once for credit. Prerequisite: Chem 490 and/or other advanced electives or research experience specified by the supervisor. Credit 3 units.

A&S NS

Chem 500. Independent Work

A detailed literature search on a specific topic of current interest. Prerequisites: senior standing and permission of the chair of the department. Credit variable, maximum 6 units.

Chem 515. Biological Chemistry Seminar

This course is required for all graduate students following the biological chemistry track. The course will consist of tutorials for first-year graduate students and research presentations by second-year students. Prerequisites: enrollment in the biological chemistry track or permission of the instructor. Credit 1 unit.

Chem 520. Nucleic Acid Chemistry

Structure, synthesis, properties, and interactions of nucleic acids, and the design and synthesis of nucleic acid-based and/or targeted drugs, probes and tools. Topics: primary, secondary, and tertiary structure; topological and thermodynamic properties; biological and chemical synthesis; DNA chips; PCR; site-directed natural and unnatural mutagenesis; chemical evolution (SELEX); ribozymes; phage display; carcinogen, drug, and protein interactions; affinity cleaving; ultraviolet light and ionizing radiation damage, DNA repair of mutagenesis; design and synthesis of anti-sense and anti-gene probes and drugs. Extensive use is also made of molecular modeling and the protein databank of nucleic acid structures. Prerequisite, Chem 251 and Chem 252 or equivalent). Credit 3 units.

Chem 540. Inorganic/Organometallic Chemistry Seminar

Students present informal seminars on topics of current interest from the chemical literature or from their own dissertation research. Credit 1 unit.

Chem 541. Advanced Inorganic Chemistry

Study of physical inorganic concepts with an emphasis on modern experimental methods applied to inorganic and bioinorganic systems. The spectral and magnetic properties of inorganic and bioinorganic compounds will be discussed. Topics in group theory will be covered, including symmetry of molecules and ions, the application of group theory in molecular structure determination, chemical bond theory and spectroscopy for inorganic materials as molecular species and in crystal lattices. Prerequisite: Chem 461, or consent of instructor. Credit 3 units.

Chem 542. Advanced Inorganic Chemistry

Bio-inorganic Chemistry. The chemistry of metalloenzymes, metal-nucleic acid interactions, metallo-regulatory processes, metal cofactors, and related subjects. Open to undergraduates with permission of the instructor. Chemistry 461 recommended. Credit 3 units.

Chem 550. Mass Spectrometry

This course covers the fundamentals of instrumentation, ionization, and gas-phase ion chemistry. Magnet sector, quadrupole, time-of-flight, ion trap, and Fourier transform instruments are considered. Ionization methods include the venerable electron ionization, chemical ionization, and fast atom bombardment, plus the newer electrospray and matrix-assisted laser desorption methods. Mechanisms of gas-phase ion decomposition reactions, rates and thermodynamics of gas-phase ion processes, and ion-molecule reactions are discussed particularly in terms of their intrinsic inter-

est and for interpreting spectra. Combined or hyphenated methods such as GC/MS, LC/MS, and tandem mass spectrometry are also discussed. A second major focus includes applications in a variety of areas: structure determination of synthetic, natural-product, and biomolecules, exact mass measurements high resolution MS, peptide and protein sequencing, trace analysis, sensitive detection, and mixture analysis. Prerequisite: Chem 252 or permission of instructor. Credit 3 units.

Chem 551. Mechanistic Organic Chemistry

The first half of a sequence of two semesters, followed by Chem 556 in the spring, encompassing three important topics in physical organic chemistry. The first nine-week segment is devoted to the fundamental concepts of mechanistic organic chemistry including qualitative descriptions of bonding and pericyclic reactions. The major classes of reaction mechanisms are surveyed. The last four weeks of Chem 551 are devoted to computational chemistry and molecular modeling, with an emphasis on the background, practice, and applications of electronic structure theory. This segment is continued in the first four weeks of Chemistry 556 and is followed by a segment on chemical kinetics as a tool in mechanistic investigations. Prerequisite: Chem. 252 or permission of the instructor. Credit 3 units.

Chem 554. Molecular Orbital Theory

Lectures will cover the background, practice, and applications of computational chemistry to the modeling of the structures and chemical reactions of organic molecules. Different levels of calculation will be presented, from molecular mechanics calculations and Hockel molecular orbital theory, through semi-empirical and ab initio self-consistent field calculations with correlation energy corrections, and density functional theory. Hands-on experience performing calculations is an important element in this course. Credit 3 units.

Chem 555. Special Topics in Organic Chemistry

Credit 3 units.

Chem 556. Kinetics and Mechanism

A course in the application of chemical kinetics to the elucidation of mechanisms of chemical reactions. Prerequisite, Chemistry 5511, or permission of instructor. Credit 3 units.

Chem 557. Advanced Organic Synthesis

A course focusing on newer synthetic strategies used in the construction of complex organic molecules, particularly in the natural products area. Included are in-depth analyses of advances in several areas of synthetic methodology bearing on the development of strategies for control of chemo-, regio-, enantio-, and diastereo-selectivity. Prerequisite: Chem 451, or permission of the instructor. Credit 3 units.

Chem 558. Spectral Methods in Organic Chemistry

A detailed treatment of the structure and stereochemistry of organic compounds with particular emphasis on ultraviolet, visible, infrared, nuclear magnetic resonance, and mass spectroscopic techniques for structure determination. Credit 3 units.

Chem 559. Organic Chemistry Seminar

The organic chemistry graduate students enrolled will each present one seminar on a topic of current interest in the literature. Credit 1 unit.

Chem 562. Statistical Thermodynamics

Statistical mechanical methods will be used to characterize equilibrium and non-equilibrium thermodynamic systems. Computer programming assignments are given. An initial familiarity with ideal equilibrium systems will be assumed. Prerequisite Chem 401 or its equivalent or permission of the instructor. Credit 3 units.

Chem 571. Quantum Chemistry and Spectra
Elementary quantum theory of chemical binding and molecular structure. Some emphasis will be placed on spectroscopic methods. Prerequisite: Chem 402. Credit 3 units.

Chem 576. Magnetic Resonance
Same as Physics 534.

Chem 5762. Electron Spin Resonance
Principles of magnetic resonance of paramagnetic species, structure and dynamics of organic free radicals and transition metal ions in the condensed phase. Detection of transient paramagnetic species generated in photochemical reactions and photo physical processes. Prerequisite: Chem 401. Credit 3 units.

Chem 577. Physical Chemistry of Macromolecules

Application of physical chemistry to the study of proteins, nucleic acids, and other natural and synthetic polymers. The thermodynamics and statistical mechanics of dilute macromolecular solutions, osmotic pressure, light scattering, viscosity, ultracentrifugation, diffusion, circular dichroism, and analysis of conformational transitions. Prerequisite: two semesters of physical chemistry or permission of the instructor. Credit 3 units.

Chem 578. Nuclear Magnetic Resonance Spectroscopy

A course dealing with the quantum and classical description of the nuclear magnetic resonance of an isolated system of two spin-1/2 nuclei. The design of pulsed NMR spectrometers and the Fourier analysis of time-dependent observable magnetization in 1 and 2 dimensions are treated in detail. NMR relaxation in liquids and solids is included phenomenologically. Prerequisite: Physical Chemistry or permission of the instructor. Credit 3 units.

Chem 580. Special Topics in Physical Chemistry

An overview of the fundamentals of atomic and molecular interactions, rovibrational and electronic spectroscopy, and unimolecular and bimolecular reaction dynamics followed by a review of novel experimental reaction techniques and developments that have recently been reported in the literature. Credit 3 units.

Chem 581. Advanced Quantum Chemistry

A study of the theory and methods of quantum mechanics, with applications to problems of chemical interest. Prerequisite: Chem 571 or permission of the instructor. Credit 3 units.

Chem 582. Group Theory

The course will develop applications of group theory to MO theory for inorganic compounds, ligand-field theory, spectral transition probabilities, molecular vibrations, and vibronic coupling. Credit 3 units.

Chem 584. Molecular Spectroscopy

Principles of molecular spectroscopy, molecular rotations, vibrations and electronic transitions. Structural and dynamic aspects of molecules in the condensed phase. Recent topics in experimental spectroscopy. Prerequisite: Chemistry 571. Credit 3 units.

Classics

Chair

Robert D. Lamberton, Professor
Ph.D., Yale University

Endowed Professors

Susan Rotroff

Jarvis Thurston and Mona Van Duyn Professor in the Humanities
Ph.D., Princeton University

Professors

Judith Evans-Grubbs

Ph.D., Stanford University

George M. Pepe

Ph.D., Princeton University

Associate Professor

Ryan K. Balot

Ph.D., Princeton University

Assistant Professor

Catherine Keane

Ph.D., University of Pennsylvania

Lecturer

Meredith Prince

Ph.D., Duke University

Professors Emeriti

Carl W. Conrad

Ph.D., Harvard University

Kevin Herbert

Ph.D., Harvard University

Merritt Sale

Ph.D., Cornell University

“Classics” means Greece and Rome, but the study of Greek and Roman culture extends beyond language and literature and even beyond antiquity to a deeper understanding of later Western culture. In pursuit of this goal, graduate and undergraduate students at Washington University are able to use the Classics Study Center and its specialized collections. Computer-readable databases make possible rapid searches of Greek and Latin texts and provide access to a wealth of information on all aspects of ancient Greek and Roman societies. The center also has a small reference library. Housed elsewhere are the Wulffing Coin Collection and collections of Greek papyri and art.

The Major: The major in Classics requires a minimum of 18 units in advanced courses. You must complete at least 6 units at the 400 level in Greek or Latin. Competence in both ancient languages, though essential for those anticipating graduate study, is not required.

The department also offers a major in Ancient Studies for students who want to explore the whole spectrum of the classical world with little or no work in the ancient languages. The student and adviser create a program of study that comprises at least 24 units drawn from courses in the Department

of Classics and those in related departments, of which 18 units must be at the advanced level. Greek and Latin courses at the 200 level or above may be used in partial fulfillment of this requirement. In this major you are encouraged to develop a certain depth in one special field of interest (e.g., literature, art, history, or philosophy). Therefore, at least 9 of the 24 advanced units of the major should be taken in one such specific area. For further information, consult the department chair by the middle of the sophomore year.

Certain courses in related departments may be used in partial fulfillment of the requirements for a major in classics or ancient studies, including:

Art-Arch 331. Greek Art and Archaeology

Art-Arch 334. Roman Art and Archaeology

Art-Arch 437. Greek Sculpture

Phil 451. Plato

Phil 452. Aristotle

The Minor: In addition to major programs, the department offers minor concentrations in both programs: the minor in Classics, emphasizing the reading of Greek or Latin literature in the original language; and the minor in Ancient Studies, emphasizing ancient history and culture, but requiring no study of the ancient languages. For information, consult the chair of the department.

Study Abroad: Study abroad for a semester in Rome or Athens is an option many classics majors select. Interested students should consult the coordinator of Overseas Study.

Senior Honors: If you are planning to pursue graduate work, you should enter the Honors program. To apply, you must have junior standing, an average of B+ or better in courses numbered 300 or above in Greek and/or Latin, and permission of the chair. A thesis of substantial nature and length is prepared and written under the direction of a member of the department, beginning in the fall semester of your senior year. A final draft is submitted to the director no later than February 1, a final copy to the chair no later than March 1. Credit of 3 units is awarded upon presentation of an acceptable thesis.

Undergraduate Courses

Classics 200C. World Archaeology

Same as ARC 200C.

A&S CD TH **FA** SSP

Classics 225D. Latin and Greek in Current English

Same as Ling 225D.

An intensive survey of Greek and Latin words and roots found in English, both technical and non-technical. The course strengthens the student's English vocabulary and complements advanced courses in English composition. Does not count toward a major or minor in Classics. Credit 3 units.

A&S LA

Classics 228. Theater Culture Studies I: Antiquity to Medieval

Same as Drama 228C.

A&S TH **FA** AH

Classics 235C. The Greek Imagination

An introduction to Greek culture with emphasis on Archaic and Classical ideas about man, the gods, and the cosmos. Considerable attention also given to the Athenian democracy, its institutions, festivals, and arts. The course is designed to offer a broad and interdisciplinary view of the most memorable Greek achievements in literature, the visual arts, and social thought and practice. Credit 3 units.

A&S CD TH FA SSP

Classics 236C. The Roman World

An introduction to the society and culture of the ancient Roman Republic and Empire, including national identity, moral and political thought, family, religion, and entertainment. Emphasis on primary texts. Credit 3 units.

A&S CD TH FA AH Lit

Classics 240. Not Members of This Club: Women and Slaves in the Greco-Roman World
Same as WGS 240.

Both the Athenian Democracy and the Roman Senatorial Oligarchy were societies in which political power was the exclusive property of free, citizen males. With very few exceptions, the astounding accomplishments of those societies were also the creations of free, citizen males. This course examines the lives of two disparate but comparable groups of outsiders within Greek and Roman society. The status, rights, and accomplishments of Athenian and Roman women are explored and placed in the context of other pre-modern societies. Likewise, the institution of slavery in Greece and Rome is explored and compared with other slave-holding societies, ancient and modern. Credit 3 units.

A&S CD SD SS FA SSP

Classics 3001. Writing Intensive in Ancient Studies

Same as Art-Arch 3001.

A&S TH WI

Classics 301C. Greek Mythology

A survey and study of the great mythic stories of the ancient world, with an emphasis on such topics as creation, divinity, friendship, sex, love, death, heroic journeys, and the relation of myth to culture. Credit 3 units.

A&S TH FA SSP

Classics 3301. Homeric Archaeology

Same as Art-Arch 3301.

A&S CD TH FA AH

Classics 334. Roman Art and Archaeology

Same as Art-Arch 334.

A&S TH FA AH

Classics 3361. Ancient Sanctuaries: The Archaeology of Sacred Space in the Ancient Mediterranean

Same as Art-Arch 336.

A&S CD TH FA AH

Classics 3369. Underwater Archaeology

Same as ARC 3369.

A&S TH FA SSP

Classics 341C. Ancient History: The Roman Republic

Same as History 341C.

From the legendary origins of the city through the establishment and collapse of its republican government. Emphasis on constitutional and political history, imperialism and the Roman army, Greek culture, and the Roman aristocracy. Credit 3 units.

A&S TH FA SSP

Classics 342C. Ancient History: The Roman Empire

Same as History 342C.

From the establishment of the Augustan principate to the military and political collapse of the western

empire. Emphasis on social and cultural history, the conflict between Christianity and paganism, the rise of the barbarian kingdoms, and the general question of cultural "decline." Credit 3 units.

A&S TH FA SSP

Classics 345C. Greek History: Archaic and Classical

Same as History 345C.

A survey of the central themes of Greek social, political, and military history from the period of the Homeric epics until the death of Socrates. Credit 3 units.

A&S TH FA SSP

Classics 346C. Greek History: The Age of Alexander

Same as History 346.

Survey of the political, cultural, and social ramifications of Alexander the Great's conquests. Emphasis will be placed on cultural conflict, emerging cosmopolitanism, kingship, and royal technologies of power in the period of Alexander's successors. Credit 3 units.

A&S CD TH FA SSP

Classics 347C. Ancient Philosophy

Same as Phil 347C.

A&S TH FA SSP

Classics 350. Greek Art and Archaeology

Same as Art-Arch 331.

A&S TH FA AH

Classics 3582. Ancient Rome in Film and Fiction

Examines a group of novels starting with *The Last Days of Pompeii* (1834) and a group of films beginning with *The Sign of the Cross* (1936) to see how writers and filmmakers have conjured up an image of Roman excess and exoticism in line with their own artistic and cultural viewpoints. We read both popular successes like *Ben-Hur* and "high art" like *Marius the Epicurean* and see such commercial successes as *The Robe* and art house films like Fellini's *Satyricon*. Credit 3 units.

A&S TH FA AH Lit

Classics 367. Ancient Political Thought

Same as Pol Sci 367.

The course examines the most significant ancient attempts to construct an ethically and practically viable politics. Topics include imperialism, citizenship, the cultivation of virtue, utopianism, and dissent. Although the focus is on understanding key texts as interventions in particular contexts, attention is also paid to contemporary reinventions of ancient thought. Readings are drawn from historians (Herodotus, Thucydides), philosophers (Plato, Aristotle), and orators (Demosthenes, Cicero). Credit 3 units.

A&S SS FA SSP

Classics 3675. Tragedy, Rhetoric, and Democracy: Public Discourse in Classical Athens

The course examines Athenian democratic discourse in classical tragedy and oratory. The working assumption is that Athens' democratic institutions were informed by a vibrant democratic culture—a culture that valued free speech, uninhibited interrogation of authority, individual reflection, and the cultivation of political virtue.

Tragedy and oratory, in their different ways, enriched and strengthened this culture. Setting tragedy in its civic and ritual contexts, its capacity to educate citizens in distinctively democratic constructions of courage, self-control, and political knowledge is explored. The ideological principles implicit in tragedy were made explicit in oratory, as public speakers worked through the conventions of democratic ideology to articulate stances and persuade audiences on a variety of key political topics. The goal in the course is to understand the tensions and ambiguities of democratic ideal-

ogy as much as its shared rhetorical and philosophical underpinnings. Students come to understand these texts as rich but neglected resources for thinking through the nature and value of democracy as a political system. Credit 3 units.

A&S TH FA SSP

Classics 371. The Ancient Family

Examination of the definitions and roles of the family in ancient Greece and Rome through readings and discussions of primary sources (literature, legal texts, inscriptions, art) and recent scholarship. Topics include: demography; relationship between family and state; economic, social, and religious roles of the family; roles of women, men, children, and slaves; death and inheritance; marriage; children; family relationships; household space; representations of the family in ancient art; comparisons with the modern family. Credit 3 units.

A&S TH WI

Classics 375. Topics in Classics

Study of one or more themes recurring in the traditions of Greek, Roman, and European literature. Credit 3 units.

A&S TH FA SSP

Classics 386. Old Jokes: Laughter in the Greco-Roman World

Same as Drama 332.

An exploration of the theory and practice of comedy in the Greco-Roman world. Readings include examples of iambic (mocking) poetry, comic theatre, satiric verse and prose fiction, as well as philosophical discussions of the relationship of humor and laughter to human behavior and values. As comedy in all contexts engages and shapes cultural values just as much as "serious" literature does, its history and reception raise major social and aesthetic issues. Critical topics include: how ancient thinkers imagined comedy's historical birth, how public comic performances may have encouraged either social cohesion or disruption, how communities defined "beneficial" and "offensive" humor, and how ancient elite writers and readers felt about the often lowbrow and obscene content of "classic" comic literature. Combination of lectures and discussions. Credit 3 units.

A&S TH FA SSP

Classics 389C. The Ancient Novel

Same as Comp Lit 391C.

Many modern readers are familiar with the mythological and dramatic literature of Greco-Roman antiquity, but fewer are aware that the same cultures developed a tradition of prose fiction concerned with romance, human psychology and sexuality, exotic travel and adventure, and religious experience. The European tradition of extended fictional narrative begins with the Greeks, and their novels, along with Apuleius' *Golden Ass* and Petronius' *Satyricon*, had a formative influence on later narrative traditions. Students read and analyze all the surviving examples of the Greco-Roman novel, including some fragmentary works, with the goal of throwing light on the history and conventions of the genre, its appeal, and its influence. Credit 3 units.

A&S TH FA Lit

Classics 392E. Greek and Roman Drama

Survey of the tragic and comic dramas produced in Ancient Greece and Rome. Study of the plays' religious and civic performance contexts, responses of the ancient audiences, and literary interpretations. Credit 3 units.

A&S TH FA Lit

Classics 393. The Tragic Muse

Same as Drama 393, Comp Lit 3935.

Intensive study of the major tragic playwrights of Ancient Greece (Aeschylus, Sophocles, and Euripides) and some of their imitators and critics in the western tradition. We consider tragedy's ori-

gins, its literary elements and theory, its performance and religious contexts, and its social functions. Lectures with discussions. Credit 3 units.
A&S TH

Classics 426. Ancient Athens

Same as Art-Arch 426, ARC 426.

Athens was one of the great cities of antiquity. From lavishly decorated marble temples on the Acropolis, to public office buildings and inscriptions in the Agora (civic center), to the houses of the living and the monuments for the dead, the city has left a rich record of her material culture. These buildings and objects, together with an exceptionally large number of literary and historical texts, make it possible to paint a vivid picture of the ancient city. The course concentrates on the physical setting and monuments of Athens, as revealed by both archaeology and texts, and how they functioned within the context of Athenian civic and religious life. Credit 3 units.

A&S CD TH FA AH

Classics 427. Athenian Vase Painting

Same as Art-Arch 427.

A&S TH FA AH

Classics 4321. Ancient Coins

Same as Art-Arch 4321.

A&S TH FA AH

Classics 433. Greek Vase Painting

Same as Art-Arch 433.

A&S TH FA AH

Classics 435. The Parthenon

Same as Art-Arch 435.

A&S TH FA AH

Classics 4350. Hellenistic Philosophy

Same as Phil 4530.

A&S TH FA SSP

Classics 437. Greek Sculpture

Same as Art-Arch 437.

A&S TH FA AH

Classics 4371. Greek and Roman Pottery

Same as Art-Arch 4371.

A&S TH FA AH

Classics 4381. Ancient Painting

Same as Art-Arch 438.

A&S TH FA AH

Classics 442. The Later Roman Empire: From Constantine to Justinian

Same as History 4322.

Covers the period from circa 300 through the reign of Justinian. Focus on legal developments and codification of law, social changes, rise of Christianity, and fall of the Roman Empire in the west. Prerequisite: Classics 342c or permission of instructor. Credit 3 units.

A&S TH

Classics 450. Topics in Classics

Study of one or more themes recurring in the traditions of Greek and Roman literature. Credit 3 units.

Classics 450W. Topics in Classics

This course number is used for topics courses in Classics offered at the 400 level when the format of the course qualifies for a writing-intensive designation. Credit 3 units.

WI

Classics 451. Plato

Same as Phil 451.

A&S TH FA SSP

Classics 452. Aristotle

Same as Phil 452.

A&S TH FA SSP

Classics 493. Senior Project

Recommended for all majors in Classics or Ancient Studies who have not completed their college capstone experience in another major, or who are not satisfying this requirement by means of a Senior Honors Thesis in Classics, Greek, or Latin. A structured research assignment or independent project under the supervision of one of the department's faculty is required. Prerequisites: Senior standing and permission of the chair of the department. Credit 3 units.

Classics 497. Study for Honors

Prerequisites: junior standing, grades averaging A- in courses numbered 300 or above in Classics, and permission of the department chair. Credit 3 units.

Classics 498. Study for Honors

Prerequisites: junior standing, grades averaging A- in courses numbered 300 or above in Classics, and permission of the department chair. Credit 3 units.

Classics 500. Independent Work

Intended for students from other departments who wish to do informal work on advanced problems in classical literature in translation. Prerequisite: senior standing, or permission of the chair of the department. Credit variable, maximum 6 units.

Greek

Greek 101D. Beginning Greek

Intensive introduction to the morphology and syntax of classical (ancient) Greek, including extensive readings in literary texts. Credit 4 units.

A&S LA

Greek 102D. Beginning Greek II

Continuation and completion of the program begun in Greek 101D. Prerequisite: Greek 101D, or permission of the instructor. Credit 4 units.

A&S LA

Greek 190D. Intensive Beginning Greek I

An intensive study of Attic Greek. Credit 5 units.

A&S LA

Greek 210. Intensive Beginning Greek II

Completion of work begun in Greek 190D followed by readings in original Greek poetry and prose. Successful completion of Greek 210 with a grade of B+ or better will allow the student to proceed directly to Greek 318C. Credit 5 units.

A&S LA

Greek 215D. Intermediate Greek I

Reading of Greek prose texts accompanied by review of morphology and syntax and exercises in vocabulary building. Prerequisite: Greek 102D or permission of the instructor. Credit 3 units.

A&S LA

Greek 301. Intermediate Greek: The New Testament in Context

Same as Re St 3011.

A reading of texts from the New Testament as well as others of relevance to the religions of the Roman Empire. Prerequisite: Greek 317C or permission of the instructor. Credit 3 units.

A&S LA

Greek 316C. Intermediate Greek II

Readings in various forms of Greek poetry and prose as foundation for advanced study of Greek literature. Prerequisite: Greek 215D or permission of the instructor. Credit 3 units.

A&S LA FA Lit

Greek 317C. Introduction to Greek Literature

Appreciation of literary forms developed through study of texts from Homeric epic or classical Attic prose and poetry. Prerequisite: Greek 102D with a grade of B+ or higher, or permission of the instructor. Credit 3 units.

A&S TH FA Lit

Greek 318C. Introduction to Greek Literature

Appreciation of literary forms developed through study of texts from Homeric epic or classical Attic prose and poetry. Prerequisite: Greek 210, Greek 316C, or Greek 317C. Credit 3 units.

A&S TH FA Lit

The following 400-level courses have as prerequisite Greek 318C and are not normally open to first-year students.

Greek 411. Homer: *The Odyssey*

Credit 3 units.

A&S TH FA Lit

Greek 413. Homer: *The Iliad*

Credit 3 units.

A&S TH FA Lit

Greek 416. Hesiod

Credit 3 units.

A&S TH FA SSP

Greek 418. The Epic Tradition

Intensive readings in Greek epic, including Homer, Hesiod, Apollonius Rhodius, and a sampling of later hexameters (The Orphic Argonautica, Nonnus). The emphasis is on the continuities and the discontinuities in the evolution of the genre. Credit 3 units.

A&S TH

Greek 421. Sophocles

Credit 3 units.

A&S TH FA Lit

Greek 422. Euripides

Credit 3 units.

A&S TH FA Lit

Greek 423. Aeschylus

Credit 3 units.

A&S TH FA Lit

Greek 424. Aristophanes

Credit 3 units.

A&S TH FA Lit

Greek 430. Herodotus

Credit 3 units.

A&S TH FA SSP

Greek 431. Thucydides

Credit 3 units.

A&S TH FA SSP

Greek 432. The Attic Orators

Credit 3 units.

A&S LA FA SSP

Greek 435. Classical Historical Prose

Credit 3 units.

A&S TH

Greek 436. Attic Prose of the 4th Century B.C.

Selected texts of Attic orators, Xenophon, Plato, or Aristotle; specific readings for each semester in *Course Listings*. May be repeated for credit for study of a different author or text. Credit 3 units.

A&S TH FA Lit

Greek 437. Topics in Greek Poetry

Selected poetic texts from elegy, iambic, melic, pastoral, epic (other than Iliad and Odyssey), and other genres; specific readings for each semester in *Course Listings*. May be repeated for credit for study of different texts. Credit 3 units.

A&S TH FA Lit

Greek 438. Topics in Greek Literature

Study of selected problems, eras, or generic sequences; specific topic for each semester in *Course Listings*. May be repeated for credit for study of different topics. Credit 3 units.

A&S TH WI FA Lit

Greek 499. Study for Honors

Prerequisites: junior standing, grades of B+ or better in courses in Greek numbered 400, and permission of the department chair. Either Greek 499 or Latin 497 must be taken by all Honors candidates. Credit 3 units.

A&S TH

Greek 500. Independent Work

Prerequisite: senior standing and permission of the department chair. Credit variable, maximum 6 units.

Latin**Latin 101D. Beginning Latin I**

Introduction to morphology and syntax of classical Latin. Credit 4 units.

A&S LA

Latin 102D. Beginning Latin II

Continuation of program begun in Latin 101D. Credit 4 units.

A&S LA

Latin 105. Medieval Latin: An Introduction

An accelerated study of Latin grammar. For students with previous knowledge of Latin, graduate students outside of Classics, and for students willing to work at an accelerated pace. The emphasis in this course is on Medieval Latin. Credit 5 units.

A&S LA

Latin 190D. Intensive Elementary Latin I

An accelerated study of Latin grammar. For students with previous knowledge of Latin, graduate students outside of Classics, and for students willing to work at an accelerated pace. Credit 5 units.

A&S LA

Latin 210. Intensive Elementary Latin II

Completion of work begun in Latin 190D followed by readings in original Latin poetry and prose. Successful completion of Latin 210 with a grade of B+ or better will allow the student to proceed directly to Latin 318C. Credit 5 units.

A&S LA

Latin 215D. Intermediate Latin

An introductory reading course in Latin prose writers, such as Petronius and Apuleius, combined with fundamentals of Latin prose composition. Prerequisite: Latin 102D, placement by examination, or permission of the instructor. Credit 3 units.

A&S LA

Latin 316C. Introduction to Latin Literature: Elementary Prose and Poetry

Appreciation of literary forms through study of selected elementary literary texts in Latin prose and poetry. Prerequisite: Latin 215D, placement by examination, or permission of the instructor. Credit 3 units.

A&S TH **FA** Lit

Latin 317C. Survey of Latin Literature: The Republic

A broad overview of the major literary achievements of the last two centuries of the Roman Republic with emphasis on figures like Catullus, Lucretius, Caesar, and Cicero. Prerequisite: Latin 102D with a grade of B+ or better, or Latin 215D or Latin 316C, or placement by examination, or permission of the instructor. Credit 3 units.

A&S TH **FA** Lit

Latin 318C. Survey of Latin Literature: The Empire

A broad overview of the major literary achievements of the first century of the Roman Empire with emphasis on figures like Virgil and Livy. Prerequisite: Latin 102D with a grade of B+ or better, or Latin 316C, or placement by examination, or permission of the instructor. Credit 3 units.

A&S TH **FA** Lit

Latin 370. Topics in Latin Literature:

Study in selected problems, eras, or generic sequences; specific topic for each semester in *Course Listings*. May be repeated for credit for study of different topics. Prerequisites: Latin 318C or permission of instructor. Credit 3 units.

A&S TH

The following 400-level courses have as prerequisite Latin 318C, and are not normally open to first-year students.

Latin 401. Medieval Latin

Same as Med-Ren 401.

Credit 3 units.

A&S TH **FA** Lit

Latin 413. Latin Philosophical Writers

Readings among various writers of philosophy in Latin, ranging from Cicero to Seneca to Augustine. Texts vary. Therefore, course may be taken more than once. Credit 3 units.

A&S TH **FA** SSP

Latin 415. Cicero

Credit 3 units.

A&S TH **FA** SSP

Latin 416. Seneca

Credit 3 units.

A&S TH

Latin 4215. Plautus

Credit 3 units.

A&S TH **FA** SSP

Latin 422. Lucretius

Credit 3 units.

A&S TH **FA** SSP

Latin 431. Vergil: *The Aeneid*

Credit 3 units.

A&S TH **FA** Lit

Latin 432. Horace on Poetry

Credit 3 units.

A&S TH

Latin 433. Ovid

Credit 3 units.

A&S TH

Latin 444. Latin Prose Composition

Readings in Cicero coupled with exercises in composition of Latin prose, with attention to grammatical and idiomatic accuracy as well as elegance of style. Credit 3 units.

A&S TH **FA** SSP

Latin 451. The Roman Historians

Credit 3 units.

A&S TH **FA** SSP

Latin 471. Elegiac Poetry

Credit 3 units.

A&S TH **FA** Lit

Latin 493. Readings in Latin Prose

A survey of the major genres of Latin prose, history, oratory, and philosophy. Authors may include Caesar, Cicero, Seneca, Tacitus. Aim is to develop reading facility and understanding. Credit 3 units.

A&S TH **FA** Lit

Latin 494. Topics in Latin Literature

Study of selected problems, eras, or generic sequences; specific topic for each semester in *Course Listings*. May be repeated for credit for study of different topics. Credit 3 units.

A&S TH WI **FA** Lit

Latin 495. Topics in Republican Latin

May be repeated for credit for study of different topics. Credit 3 units.

A&S TH **FA** SSP

Latin 496. Tacitus

Credit 3 units.

A&S TH **FA** SSP

Latin 4961. Topics in Empire Latin

May be repeated for credit for study of different topics. Credit 3 units.

A&S TH **FA** SSP

Latin 497. Honors Course I

Prerequisites: junior standing, a grade of B+ or better in courses in Latin numbered 300 or above, and permission of the department chair. Either Latin 497 or Greek 499 must be taken by all Honors candidates. Credit 3 units.

Latin 498. Honors Course II

Prerequisites: junior standing, a grade of B+ or better in courses in Latin numbered 300 or above, and permission of the department chair. Either Latin 497 or Greek 499 must be taken by all Honors candidates. Credit 3 units.

Latin 500. Independent Work

Prerequisite: senior standing and permission of the department chair. Credit variable, maximum 6 units.

A&S Requirements for College of Arts & Sciences students (for more information, see page 27).

CD = Cultural Diversity

LA = Languages and the Arts

NS = Natural Sciences and Mathematics

QA = Quantitative Analysis

SD = Social Differentiation

SS = Social Sciences

TH = Textual and Historical Studies

WI = Writing-Intensive Course

FA Requirements for College of Art students (for more information, see page 305).

AH = Art History

Comp = English Composition

Lit = Literature

NSM = Natural Sciences or Mathematics

SSP = Social Sciences or Philosophy

Comparative Literature

Chair

Robert K. Henke

Ph.D., University of California–Berkeley

Endowed Professors

Robert E. Hegel

Liselotte Dieckmann Professor of Comparative Literature in Arts & Sciences and Professor of Chinese (Chinese)

Ph.D., Columbia University

Paul Michael Lützel

Rosa May Distinguished University Professor in the Humanities (German)

Ph.D., Indiana University

Gerhild Scholz Williams

Barbara Schaps Thomas and David M. Thomas Professor in the Humanities (German)

Ph.D., University of Washington

Professors

John F. Garganigo

(Spanish)

Ph.D., University of Illinois

Lutz Koepnick

(German)

Ph.D., Stanford University

Robert D. Lamberton

(Classics)

Ph.D., Yale University

Joseph Loewenstein

(English)

Ph.D., Yale University

Stamos Metzidakis

(Romance Languages)

Ph.D., Columbia University

Dolores Pesce

(Music)

Ph.D., University of Maryland

Richard Ruland

(English)

Ph.D., University of Michigan

Stephan Schindler

(German)

Ph.D., University of California–Irvine

Henry I. Schvey

(Performing Arts)

Ph.D., Indiana University

Harriet A. Stone

(French)

Ph.D., Brown University

Adjunct Professor

Pedro C. Cavalcanti

(Anthropology)

Ph.D., University of Warsaw

Associate Professors

Miriam Bailin

(English)

Ph.D., University of California–Berkeley

Guinn Batten

(English)

Ph.D., Duke University

Nancy E. Berg

(Modern Hebrew)

Ph.D., University of Pennsylvania

Fatemeh Keshavarz Karamustafa

(Persian)

Ph.D., University of London

Marvin H. Marcus

(Japanese)

Ph.D., University of Michigan

Angela Miller

(Art History)

Ph.D., Yale University

Robert Snarrenberg

(Music)

Ph.D., University of Michigan

Assistant Professors

Lingchei Letty Chen

(Chinese)

Ph.D., Columbia University

Nargis Virani

(Arabic)

Ph.D., Harvard University

Senior Lecturer

Emma Kafalenos

Ph.D., Washington University

Professors Emeriti

Milica Banjanin

(Russian)

Ph.D., Washington University

William H. Gass

David May Distinguished University Professor Emeritus in the Humanities

Ph.D., Cornell University

Naomi Lebowitz

Hortense and Tobias Lewin Distinguished

Professor Emerita in the Humanities

Ph.D., Washington University

Robert E. Morrell

(Japanese)

Ph.D., Stanford University

James F. Poag

(German)

Ph.D., University of Illinois

Michel Rybalka

(French)

Ph.D., University of California–Los Angeles

Merritt Sale

(Classics)

Ph.D., Cornell University

Comparative Literature studies literature across national, cultural, and linguistic boundaries. The broad perspective of Comparative Literature generates sustained criti-

cal thinking about what literature is and does: how literature relates to other fields and kinds of writing; how literary texts produce their complex webs of meaning; and the ethical valence of literature in a globalized world. Advanced knowledge of a foreign language is essential for understanding and appreciating a given literature and culture. Therefore, all majors study a foreign language and literature at an advanced level. Moreover, the study of works in translation, especially those originally written in non-European languages, provokes cross-cultural comparisons and helps prepare students for a multilingual, pluralistic, and global world. Comparison of literature to other kinds of arts, media, and writing further develops one's understanding of literature and culture.

Comparative Literature offers students a high degree of flexibility in their course selection and in their chosen program. A rich array of courses spanning national, temporal, or medial boundaries are organized by genre (e.g., post-modern narrative, comedy, the novel, lyric poetry); cultural issues (e.g., exile, diaspora, cross-cultural encounters); thematic topic (e.g., memory, love in the novel, mysticism in poetry); period (Romanticism, the Renaissance); and transnational region (e.g., Middle Eastern literature, African literature). The program also offers several courses, taught each year, that instruct the student in the central practices, approaches, and theories of the discipline: an entry-level course titled "World Literature," a required introductory course on comparative methods, a required course on literary theory, and a course on translation.

Comparative Literature prepares its majors well for life in a global, multicultural, and pluralistic world. The critical thinking developed in all of our courses will help students succeed in law and other professional schools. Many of our graduates have gone on to careers in secondary or higher education. With the help of our major and the semester or year abroad that we encourage, some graduates have gone into the Peace Corps and careers in international affairs.

The Major in Comparative Literature:

You are required to complete 30 units of comparative literature study, of which at least 24 must be at the 300 level or above, distributed between Comparative Literature and the study of a language other than English. Two specific courses are required: an introduction to the discipline of Comparative Literature (Comp Lit 204) and Literary Theory (Comp Lit 393). Four other Comp Lit courses are required, only one of which can be at the 200 level. One of these courses must devote substantial attention to non-Western literature. (Overall, four Comp Lit courses at or above the 300 level are required.) Given the immense importance that translation between languages plays in our increasingly global world and given the rich linguistic and cultural questions posed by the practice of translation, interested students

are strongly encouraged to take a course on translation, offered annually (Comp Lit 406).

For your foreign language/literature, you are required to complete 12 advanced units of study in the original language if your language is French, Spanish, Italian, or German; or 9 advanced study units in the original language plus 3 units of the literature in translation if you are studying any other language. Students intending to pursue graduate work in Comparative Literature or national literature departments are especially encouraged to study a second foreign language.

The Major in Comparative Arts: You are required to take 27 units in advanced courses (numbered 300 or higher), distributed in three areas of study—Comparative Literature, the arts, and a language other than English—in addition to introductory courses in all three areas. You will take Comp Lit 204 and three advanced courses in Comparative Literature, including one course in comparative arts. The foreign language requirement for the Comparative Arts major is the same as that of Comparative Literature (12 advanced units for French, Spanish, Italian, or German; 9 advanced units plus 3 in translation for other languages). In consultation with your adviser, you will choose two advanced courses in aesthetics or art history, or in theoretical or historical approaches to drama, dance, film, or music (Music 221 and 222 will also fulfill this requirement). In addition, you will take four courses (4 to 12 units) in an applied art: fine arts, drama, music, video, or creative writing. These additional courses need not be numbered 300 or above.

The Minor: If you minor in Comparative Literature or Comparative Arts, you are required to take 18 units. Both minors require 6 of the advanced units to be in a language other than English at the 300 level or above. The Comparative Literature minor then requires 12 units in literature; the Comparative Arts minor requires 6 advanced units in literature and 6 advanced units in theoretical or historical approaches to an art form (music, art, history, film, drama, dance) or in the aesthetics. Both Comparative Literature and Comparative Arts minors are strongly advised to take Comp Lit 204.

Senior Honors: To be considered for Honors, you must have a 3.5 GPA by the end of your sixth semester and you must be approved by either the chair of Comparative Literature or the Director of Undergraduate Studies to write a Senior Honors thesis.

Comparative Literature and the Arts & Sciences Curriculum

Comparative Literature annually offers freshman seminars, writing-intensive courses, several clusters, and various capstone experiences, including a senior seminar, a course on translation, and independent study projects regarding directed research and creative projects.

Comp Lit 110C. Freshman Seminar

Small interactive seminars based on the research and interests of the professor that introduce students to comparative ways of reading, thinking about, and writing about literature. Previous topics

include autobiography, memory in eastern and Western literature, comedy, and oral-formulaic poetry. Credit 3 units.

A&S TH FA Lit

Comp Lit 200. Topics in Asian and Near Eastern Languages

Same as ANELL 200.

A&S CD TH

Comp Lit 204. Crossing Borders: An Introduction to Comparative Literature

An introduction to some of the ideas and practices of literary studies at the beginning of the 21st century. This course is designed for majors and prospective majors in comparative literature and comparative arts—and other students interested in reading literature from many parts of the world and exploring issues in literary studies including questions of epistemology and representation, the cultural biases of readers, semiotics, translation theory, and Orientalism. Plays, novels, and poems by writers including Euripides, Vergil, Racine, Rilke, Henry James, Borges, Mellah, and Murakami, and closely related short excerpts by theorists from Aristotle to Bhabha. Credit 3 units.

A&S TH FA Lit

Comp Lit 2081. Freshman Seminar: The Chinese-American Experience

Same as ANELL 208.

A&S SD TH

Comp Lit 211. World Literature

Same as E Lit 209.

This course teaches ways of reading literature across eastern and Western cultures, introducing students to works of great imaginative power from many different regions of the world. The course focuses on a given historical period, such as the modern period or antiquity (the latter including Near Eastern as well as European texts). Organizing themes may include cultural translation, cross-cultural encounter (e.g., orientalism), hybridity, and displacement. Credit 3 units.

A&S TH FA Lit

Comp Lit 213E. From Romanticism to Modernism: Literature and the Arts in 19th-Century Europe

The idea of genius finds expression, in the 19th century, in painting and music as well as in stories, poems, and plays. We follow the evolution of “genius” and other concepts of Romanticism into the modern period. Beginning with Goethe’s *Werther* (1774), we move through the 19th century focusing on movements including Symbolism and Impressionism, and conclude with the Futurist Manifesto of 1909. Texts, slides, tapes. Credit 3 units.

A&S TH FA Lit

Comp Lit 215C. Introduction to Comparative Practice I

Close examination of a particular theme or question studied comparatively. Recent topics include literature of addiction, the representation of history in film, the influence of Kafka, and cross-cultural adaptations and revisions of literary classics. Credit 3 units.

A&S TH FA Lit

Comp Lit 226C. Theater Culture Studies I

Same as Drama 228C.

A&S TH FA AH

Comp Lit 227C. Theater Culture Studies II

Same as Drama 229C.

A&S TH FA AH

Comp Lit 300. Undergraduate Independent Study

Students pursue personalized projects not normally covered in standard courses at this level. Prerequisites: acceptance by an appropriate in-

structor of a proposed project and permission of the chair of the committee. Credit 3 units.

FA Lit

Comp Lit 301C. Greek Mythology

Comp Lit 3055. Text and Music

Same as Music 3051.

A&S TH

Comp Lit 306. Modern Jewish Writers

Same as MHRB 306, JNE 3061, IAS 306.

What is Jewish literature? While we begin with—and return to—the traditional question of definition/s, we take an unorthodox approach to the course. Reading beyond Bellow, Ozick, and Wiesel, we look for enlightenment in unexpected places: Egypt, Latin America, Australia. Recent works by Philip Roth, Andre Aciman, Simone Zelitch, and Terri-ann White are supplemented by guest lectures, film, short stories, and significant essays. We focus on issues of language, memory, and place. Background knowledge is not required, though it is warmly welcomed. Credit 3 units.

A&S TH FA Lit

Comp Lit 3101. Cultural Studies in Sexuality and Gender

Same as Hum 310.

A&S SD TH

Comp Lit 313E. Introduction to Comparative Arts

Same as IAS 3132.

High Modernism, the avant-garde, and the Post-modern—the three major aesthetic movements in Europe and the Americas during the 20th century—addressed from the perspective of (primarily) literary theory, with attention to the evolution of new strategies for creating and perceiving narrative, poetry, and drama, and to parallel shifts in the fine arts, architecture, dance, and music. Texts (Pirandello, Gide, Rilke, Robbe-Grillet, Barth, others), slides, concerts. Prerequisite: Comp Lit 213 or sophomore standing. Experience making or perceiving or thinking about one or more art forms is useful. Credit 3 units.

A&S TH FA Lit

Comp Lit 3270. The Medieval Stage

Medieval drama, which was performed in churches, monasteries, inns and marketplaces, was the pop culture of the Middle Ages. With a focus on major plays from medieval France, Germany, the Netherlands, and England, this course uses an interdisciplinary approach to reconstruct how these plays were staged in their original settings. Additional topics include the architecture of theater spaces and stage types, the use of music in drama, the nature of acting, mimesis and performativity in the Middle Ages, and the importance of the “theater” of medieval art. Students end the class with a historically accurate performance of a medieval play. Credit 3 units.

A&S TH

Comp Lit 3301. Topics in Chinese Literature and Culture

Same as Chinese 330.

A&S CD TH

Comp Lit 331C. Tragedy

Same as Drama 331C.

What is the relationship between freedom and luck? How do men and women respond to large forces beyond their control? Is character a struggle against outside events, or is it a submission to destiny? What happens when two ethical principles, taken absolutely, collide together? What is the nature of evil, and how does good respond to it? In ancient Greece, Renaissance England, 17th-century Europe, modern Europe, and post-colonial Africa, the form of tragedy has grappled with these questions, generating both a rich body of imaginative literature and equally compelling

philosophical reflections about tragedy. This course explores great works of tragic literature by authors such as Homer, Aeschylus, Sophocles, Shakespeare, Racine, Ibsen, Dostoevsky, Miller, and Soyinka, and examines philosophers such as Plato, Aristotle, Hegel, Kierkegaard, Nietzsche, Weil, and Arendt in order to explore the questions raised by tragedy. Credit 3 units.

A&S TH FA Lit

Comp Lit 332. Literature and Art

Same as Art-Arch 3320.

Credit 3 units.

A&S TH

Comp Lit 332C. Comedy

This comparative course examines and enjoys the substances and forms of humor and comedy in different times and places. Some attention to jokes, gags, and comics precede a wide-ranging examination of literary comedy. A study of various plays and comic texts illuminate different forms of comedy, such as farce, satire, romantic comedy, comedy of manners, absurdist comedy, and contemporary political comedy. Authors include Aristophanes, Plautus, Rabelais, Shakespeare, Molière, Fielding, Gogol, Wilde, Stoppard, and Dario Fo. Credit 3 units.

A&S TH FA Lit

Comp Lit 334. Love in the Novel/Love of the Novel

Our focus is our own pleasure in reading. How do we assure that this pleasure survives into the next century now that the visual, the sound bite, the video clip permeate our lives? We attempt to answer this question by rediscovering one of the great love stories of all time, Leo Tolstoy's *Anna Karenina*. Daniel Pennac's *Reads Like A Novel*, a recent work about the pleasures of reading for pleasure, guides us as we isolate elements of Tolstoy's story that compel us, that teach us about our own needs and desires as readers. The class considers novels whose love stories are molded by the characters' own reading: Austin's *Northanger Abbey*; Flaubert's *Madame Bovary*, (1856); Proust's *Swann in Love*; Skarmeta's *Burning Patience*; Bernhard Schlink's *The Reader*. Far from being immune to or eclipsed by history and politics, the pleasure of reading is shown to reflect the reader's appreciation of the larger fabric of society, where passion is set against war, prostitution, mental illness, adultery, and prejudice. Credit 3 units.

A&S TH FA Lit

Comp Lit 338C. Genres: Texttravel

Genre as a comparative laboratory. A close examination of the nature, function, and pleasures of given literary genres, such as epic or post-modern narrative. Credit 3 units.

A&S TH FA Lit

Comp Lit 3405. History of World Cinema

Same as Film 340.

A&S CD TH FA AH

Comp Lit 3492. Yiddishkayt: Yiddish Literature in English Translation

Same as JNE 349.

A&S TH FA Lit

Comp Lit 349C. Literature and Psychoanalysis: Russia and the West

Same as Russ 351C.

A&S TH FA Lit

Comp Lit 3508. Introduction to South Asian Literature I

Same as Hindi 350.

A&S CD TH

Comp Lit 355C. The Flowering of Islamic Literature 500–1200

Same as Arab 355C, JNE 355C, Med-Ren 340C, Arab 355C, JNE 555.

Exploration of the multilingual (Arabic, Persian, Turkish) literary cultures of a civilization that stretched from Spain to India. Themes and genres include early court patronage, bedouin odes, wine poetry, social satire, mystical poetry, national epic, and the literature of love and romance. Comparisons to contemporaneous Hebrew and ancient and medieval Western literatures. Readings in English. Credit 3 units.

A&S CD TH FA Lit

Comp Lit 358C. Modern Near Eastern Literatures

Same as IAS 3580, ANELL 358, JNE 558C, JNE 358C.

Literary expressions of the struggle for love, self-realization, and liberation. Romanticism, realism, and the surreal. A comparative, team-taught approach to selected genres, authors, or themes in two or more Near Eastern literatures (Arabic, Hebrew, Persian, Turkish) in English translation. Credit 3 units.

A&S TH FA Lit

Comp Lit 360C. Theatre Culture Studies III

Same as Drama 365C.

A&S TH FA Lit SSP

Comp Lit 364. Literature and Ethics

Imaginative literature may not prescribe any universal system of inviolable ethical rules, but it does represent the nuances and mysteries of lived experience, and the complex deliberations and dilemmas of the individual in particular circumstances. This course explores ethical issues such as autonomy, justice, and responsibility represented in literature from different periods. It examines how the identification and exposure of a conflict is critical to its resolution; what values are implicit in the choice of specific actions; whether the needs of the individual conflict or mesh with the needs of society; and how some moral choices bind all human beings, whatever their nationality or religion. Credit 3 units.

A&S TH

Comp Lit 365F. The Bible as Literature

Same as E Lit 365F.

A&S TH FA Lit

Comp Lit 3778. Comparative Studies in the Novel

Same as E Lit 3778.

This course introduces students to novels from a given period or from a geographical area, with attention to how novels are read and how they communicate. Credit 3 units.

A&S TH FA Lit

Comp Lit 386. The Literary 1960s: Years of Hope/Days of Rage

Taking its subtitle from the one used by Todd Gitlin for his monumental sociological study of the 1960s, this course focuses on the diverse and exciting literature of this often chaotic, always fascinating period. Readings include popular and influential books by Peter Weiss, Robbe-Grillet, Ken Kesey, Tom Wolfe, Germaine Greer, Eldridge Cleaver, and Joan Didion. Attention is paid not only to important new artistic, political, and social movements, as seen by these writers, but also to films and music of the time. Credit 3 units.

A&S TH FA Lit

Comp Lit 389. Topics:

Comparative study of a given question, theme, or problem, such as eros or exile or cruelty. Credit 3 units.

A&S TH FA Lit

Comp Lit 390. Lyrics of Mystical Love, East and West

Same as Re St 390, Pers 390, JNE 3901, Med-Ren 390.

How can mystical experience be put into words? How did the mystic poets, from various world traditions, attempt to express this inexpressible? How should we read and interpret these poetic images? This course deals with these and similar questions while examining key mystical/poetic concepts such as silence, union with the divine, or human versus mystical love. The lyrics of the world-renowned mystic Rumi is used as the main text with frequent comparisons to the writings of other prominent figures such as St. John of the Cross, Yunus Emre, John Donne, Kabir, and Meister Eckhart. All poems are read in English. Credit 3 units.

A&S CD TH WI FA Lit

Comp Lit 391C. The Ancient Novel

Same as Classics 389C.

A&S TH FA Lit

Comp Lit 392. Literary Movements

This course compares authors of different national literatures by closely examining certain movements and periods, such as Renaissance humanism, romanticism, and naturalism. Credit 3 units.

A&S TH

Comp Lit 393. Literary Theory

Same as E Lit 393, German 329.

Credit 3 units.

A&S TH

Comp Lit 396. Lyric Poetry

A study of the sounds, forms, devices, voices, and pleasures of lyric poetry from international and comparative points of view. Attention to theories of lyric, formal devices, and problems of translation. The study of various lyric forms such as the ode, the elegy, and the sonnet, generate comparisons across time and space. Credit 3 units.

A&S TH WI FA Lit

Comp Lit 4001. Religion and Literature

Comp Lit 4002. Asian and Near Eastern Languages Senior Seminar: Literature of Reminiscence

Same as ANELL 400.

A&S CD TH

Comp Lit 402. Introduction to Comparative Literature

An introduction to the discipline and practice of Comparative Literature, exploring the concepts most frequently discussed and the methods most successfully practiced. What is revealed of texts when they are examined cross-culturally? What differences between texts emerge when themes and genres are followed across more than one national literature? The course includes a short history of the discipline and recent debates about the nature and scope of the field. Topics to be discussed include periodization, genres and forms, influence and intertextuality, translation, world literature, exile, and cross-cultural encounters. Credit 3 units.

A&S TH FA Lit

Comp Lit 406. Translation

Same as JNE 4061.

This course looks at the practice and theory of literary translation. While the main focus is on the literary and linguistic processes involved in translating a text from one language to another, we spend much time exploring the cultural significance of translation in an increasingly interconnected world. Translation is one of the best ways to make the world accessible to us. Successful translation requires in-depth knowledge of the so-

cial and cultural conditions in which the original text is produced. It is equally important to be aware of the expectations of the readers who will read the translated version. To balance these theoretical discussions with practical matters, we invite translators to the class to speak about their published works. The requirements include translation projects to add experience to the analysis carried out in class. Prerequisite: Fluency in a language other than/in addition to English. Credit 3 units.

A&S TH

Comp Lit 409. Correlation Between East and West

Extensive comparative study of a period, topic, theme, or genre in Chinese or Japanese literature with a body of texts from one or more European languages that serve to illuminate the literary similarities and cultural differences between the two. Texts vary, depending upon the interests of the instructor(s). All texts available in English translations as well as in the original languages. Credit 3 units.

A&S TH FA Lit

Comp Lit 419. Feminist Literary Theory

Same as WGS 419.

A&S TH

Comp Lit 4204. Film Theory

Same as Film 420.

A&S TH WI FA Lit

Comp Lit 424. Senior Seminar

Intensive study of a comparative topic in a seminar situation. Credit 3 units.

A&S TH

Comp Lit 425. Seminar in Theatre History

Same as E Lit 4255, Drama 447, Med-Ren 4255. Study of particular topics of theater history, organized historically, such as a comparative course on Italian, English, and France early-modern theater. Credit 3 units.

A&S TH FA Lit

Comp Lit 436. Seminar in Dramatic Theory

Same as Drama 436.

The course begins with Plato's critique of mimesis and Aristotle's defense, as we read *The Poetics* as a response to Plato. We take some of Aristotle's basic concepts, such as mimesis, plot, character, and thought, and attempt to apply them to drama up to the present day. We also consider fundamental elements of both the dramatic text and the dramatic production, such as space, time, dialogue, narrative devices, and perspective. Brecht's theory of "epic drama" forms the other conceptual pole in the course, opposing Aristotle. Besides these two theorists, other figures include Ben Jonson, Corneille, Dryden, Diderot, Schiller, Hegel, Zola, Artaud, and Grotowski. The course, then, has both chronological and thematic axes. Three papers and one oral presentation. Credit 3 units. Credit 3 units.

A&S TH FA Lit

Comp Lit 442. Literature of Catastrophe

Same as E Lit 441.

A&S TH

Comp Lit 4422. History, Memory, and Collective Identities

Same as History 4422.

A&S TH FA SSP

Comp Lit 449. Topics

Credit 3 units.

A&S TH

Comp Lit 4610. Literature and Psychoanalysis

Same as E Lit 461.

A&S TH FA Lit

Comp Lit 4715. Topics in Modern Arabic Literature in Translation

Same as Arab 471.

A&S TH FA Lit

Comp Lit 477. The Chinese Theater

Same as Chinese 467.

A&S CD SD TH FA AH

Comp Lit 4891. Topics in Chinese Literature and Culture

Same as Chinese 4891.

A&S SS

Comp Lit 497. Independent Work for Senior Honors

One or more long papers on a topic chosen in conjunction with the adviser and an examination. A committee determines whether the student will receive credit only or Honors. Prerequisites: senior standing and permission of chair of the committee. Credit 3 units.

FA Lit

Comp Lit 498. Independent Work for Senior Honors

Advanced work as indicated in C Lit 497. Prerequisites: senior standing and permission of chair of the committee. Credit 3 units.

FA Lit

Comp Lit 500. Independent Work

Prerequisites: senior standing and permission of chair of the committee. Credit variable, maximum 3 units.

Earth and Planetary Sciences

Chair

Raymond E. Arvidson

James S. McDonnell Distinguished University Professor
Ph.D., Brown University

Professors

Robert E. Criss

Ph.D., California Institute of Technology

Robert F. Dymek

Ph.D., California Institute of Technology

M. Bruce Fegley

Ph.D., Massachusetts Institute of Technology

William B. McKinnon

Ph.D., California Institute of Technology

Jill D. Pasteris

Ph.D., Yale University

Roger J. Phillips

Ph.D., University of California–Berkeley

Frank A. Podosek

Ph.D., University of California–Berkeley

William Hayden Smith

Ph.D., Princeton University

Douglas A. Wiens

Ph.D., Northwestern University

Associate Professors

Jan P. Amend

Ph.D., University of California–Berkeley

Viatcheslav S. Solomatov

Ph.D., Moscow Institute of Physics and Technology

Robert D. Tucker

Ph.D., Yale University

Michael E. Wysession

Ph.D., Northwestern University

Assistant Professors

Carrine Blank

Ph.D., University of California–Berkeley

Jennifer R. Smith

Ph.D., University of Pennsylvania

Joshua B. Smith

Ph.D., University of Pennsylvania

Professor Emeritus

Harold L. Levin

Ph.D., Washington University

Professor Emerita

Ghislaine Crozaz

Ph.D., Université Libre de Bruxelles

If you are interested in exploring an exciting and multidisciplinary study of the structure, composition, and evolution of the Earth and other planets at one of the top Earth science departments in the country, Earth and Planetary Sciences is an excellent choice for you.

The areas of study available to you range from the Earth's solid iron inner core to the crust, oceans, atmosphere, and even inter-

stellar space. General offerings are suitable for you as a nonmajor; a program of fundamental, modern, quantitative studies will prepare you if you are seeking a full range of opportunities in geoscience.

Depending on your interests, you may focus your studies on geology, geophysics, geochemistry, geobiology, or environmental geology. This variety gives you flexibility in designing a program of study that best meets your needs.

Our faculty is internationally renowned for its research. Areas covered range from the center of the Earth to the structure of the solar system. The department includes the Geosciences Node for NASA's Planetary Data System and is currently taking an active role in the mapping and exploration of Venus, Mars, the moon, and satellites of the outer planets. Other research examines the composition of meteorites and cosmic dust, uses seismic waves and gravity variations to determine the structure and history of the Earth, and dates Earth's oldest rocks to discover the history of how continents evolve.

As an undergraduate major, you can work with faculty in the laboratory to conduct many of your own studies, using analytical facilities and computer modeling, and you also may gather data in the field. Many students participate actively in cutting-edge research in geology, geochemistry, geobiology, and geophysics, using advanced laboratory equipment and some of the world's most powerful computing systems; some students have co-authored published scientific papers. You also learn hands-on geology through visits to unusual geological structures in the local Midwest area and through participation in a six-week summer geology field camp. Summer internships at such places as the Smithsonian Institution also are available. Current field studies involve expeditions to Tonga and Fiji, to Madagascar, to Italy, and to Africa.

With a degree in Earth and Planetary Sciences, you have a choice of several career paths. Many recent graduates of the department have continued their research in graduate school. Others have accepted positions in government and industry. You also may choose to work in environmental business or in one of a variety of related fields.

The Major: A well-defined three-course core, consisting of EPSc 201, 352, and 353, gives an overview of the major subfields in the Earth sciences while preparing you for more in-depth study in one of three tracks in the department: (1) geology: EPSc 318, 335, 362, 406, 409, 422, 430, 431, 473, 484 and 505; (2) geochemistry: EPSc 323, 401, 441, 444, 446, 449, and 474; and (3) geophysics and remote sensing: EPSc 407, 408, 410, 428, 452, 453, 454, and 559. You must select at least five courses from those listed above, with at least one from each track. The following prerequisites are required for the above courses: Chem 111A, 112A; Math 131, 132, 233; and Physics 117A, 118A.

You are also required to take EPSc 498, Undergraduate Research Seminar, and an approved summer field camp of at least 6 units of credit. The field camp must be attended

after either the junior or senior year. You may propose to the faculty an alternative program of study as a substitute for field camp.

If you are attracted to the environmental professions, you might choose among EPSc 323, 407, 409, 428, 430, 444, 446, 449, and 454.

If you are interested in planetary sciences, you will need a strong background in Earth sciences to understand planets. Electives specifically focusing on planetary science and its methods include EPSc 401, 407, 408, 410, 453, 473, and 474.

You also may be able to take graduate Earth and Planetary Sciences courses with the permission of your adviser and the specific course instructor.

More information about the department and its faculty and staff can be found on its homepage at www.epsc.wustl.edu.

The Minor: To minor in Earth and Planetary Sciences, you must complete at least 16 units, including the introductory course EPSc 201, followed by EPSc 352 and 353. At least 9 units must be at the 300 level or above. Your minor program must be approved by the faculty adviser who is assigned to you when you declare the minor.

Senior Honors: If you are interested in the Honors program, you should consult with the chair or director of undergraduate studies concerning eligibility and requirements.

Undergraduate Courses

EPSc 100A. Environmental Geology

Origin and occurrence of earth resources and interactions between geological processes and human activity. Exploration and use of fossil and radioactive fuels, problems of waste disposal and pollution, geology of surface and underground water, abundance of resources, and hazards that geological phenomena pose to life and property. Two class hours and one two-hour discussion period a week. Credit 3 units.

A&S NS FA NSM

EPSc 103A. Oceanography

Emphasis on geological, chemical, and physical oceanography. Topics: topography and origin of ocean basins; origin and composition of sea water; effect of compositional variations on biological productivity; dynamics of water movements, including coastal processes. Credit 3 units.

A&S NS FA NSM

EPSc 105A. Earth's Atmosphere

The past, present, and future of the atmosphere. Present composition and structure. Comparison with atmospheres of other planets. History and origin of the present atmosphere, and chemical and other interactions with the solid earth, oceans, and biosphere. Extraterrestrial effects. Effects of human activities. Credit 3 units.

A&S NS FA NSM

EPSc 107. Environmental Geology and Energy

Ways to minimize hazards to the environment from the use of different forms of energy. Geological hazards of human activity. Earthquake and volcanic hazards; global warming due to greenhouse effect. Feasibility of nuclear waste disposal. Geothermal energy. Air and water pollution. Intended for non-science majors. Credit 3 units.

A&S NS FA NSM

EPSc 108A. Oceans and the Atmosphere

Basic concepts of the structure of the Earth as related to the formation and evolution of the oceans

and the atmosphere. Discussion of the evolutionary and variable states of the oceans and atmosphere, and of the role of biological processes in defining the present state of oceans and atmosphere. Predicted and interactive changes in the oceans and atmosphere in response to, and as a part of, potential global climate changes. Credit 3 units.

A&S NS FA NSM

EPSc 109A. Quantitative Reasoning in Environmental Science

Same as EnSt 109A.

Introduction to practical mathematical methods for understanding environmental aspects of our planet, particularly how the environment changes with time through human interactions. Emphasis on intuitive approaches in devising simple relationships for understanding quantitative outcomes of natural processes. Introduction to basic statistical methods, including hypothesis testing, and how statistics can be applied to environmental problems. Credit 3 units.

A&S NS QA FA NSM

EPSc 118A. Geology of National Parks

Same as AMCS 118A.

Geology processes at the Earth's surface and its interior as revealed by the geology of national parks. Examination of volcanic and mountain-building processes; the work of streams, glaciers, and wind; shoreline processes; stratigraphy and sedimentation; and Earth history. Credit 3 units.

A&S NS FA NSM

EPSc 125. The Dinosaurs: "Facts" and Fictions

Same as EPSc 135, EnSt 125.

Overview and introduction to the group of related animals commonly referred to as the *Dinosauria*. Anatomy, evolutionary relationships, place in the world. Dinosaurs dominated every known terrestrial ecosystem for almost 150 million years—one of the most impressive success stories in the entire history of life on Earth, including the modern Age of Mammals. Beyond the scales, feathers, teeth, and claws, there is much to learn about the world in general and perhaps the place of humans in it by studying the Age of Reptiles. Examination of the dinosaurs themselves, the time in which they lived, their history, and the ways in which we study them. Credit 3 units.

A&S NS FA NSM

EPSc 171A. The Solar System

Survey of the planets and satellites of our solar system. Includes results from Apollo manned missions to the Moon and spacecraft missions to the planets and their major satellites. Credit 3 units.

A&S NS FA NSM

EPSc 201. Earth and the Environment

Same as EnSt 201.

Introduction to the study of the Earth as a dynamic, evolving planet. Emphasis on how internal and surface processes combine to shape the environment. Themes: Earth's interior as revealed by seismic waves; Earth history and global tectonics shown by changes to ocean floors, mountain-building, formation of continents, earthquakes, and volcanism; climate history and global biogeochemical cycles, influenced by circulation of atmosphere and oceans, ice ages, and human activity. Composition and structure of rocks and minerals. Three class hours and one two-hour lab a week. Credit 4 units.

A&S NS

EPSc 210A. Epic of Evolution: Life, Earth, and the Cosmos

Same as Physics 210A, Biol 210A.

Evolution of the universe, the Earth, and life, woven together in narrative. Themes of complexity, scale, entropy, and information applied to the Big Bang, origins of matter, formation and history of the Earth, origins of life and diversification of

species. Discussion sections explore the implications of the scientific epic for religion, philosophy, the arts, and ethics. Three class hours and one one-hour discussion section per week. Credit 3 units.

A&S NS FA NSM

EPSc 216A. Resources of the Earth

Introduction to major resources of the Earth; rocks, minerals, water, soil, and air. Basics of geology covered as background for origin, supply, and uses of these resources. Environmental awareness stressed. Field trip required. Prerequisite: EPSc 201 (may be taken concurrently). Credit 3 units.

A&S NS FA NSM

EPSc 220. Environmental Science

Same as EnSt 220.

Introduction to Environmental Science as a discipline. Interlinked geological, atmospheric, hydrological, and biological processes that constitute the environment. Emphasis on natural processes that control climate, composition of air and water, support and distribution of ecosystems. Scientific framework for examining the effects of human activities on the environment. Three class hours and one two-hour lab period a week. Credit 4 units.

A&S NS FA NSM

EPSc 221A. Human Use of the Earth

Same as EnSt 221A.

Examination of the impacts of a growing population on the Earth, including habitat destruction, resource depletion, and air and water pollution. Population growth, landscape change, and the distribution and uses of the water, mineral, and energy-producing resources of the Earth. One all-day field trip required. Credit 3 units.

A&S NS FA NSM

EPSc 230. Introduction to Astrobiology

Same as EPSc 230.

Astrobiology is the study of life—its origin, distribution, and impact on the Earth, and the destiny of life elsewhere in the universe. Course includes the investigation of the influence of pseudoscience and the media on public understanding of scientific issues, the origin of the solar system and the Earth, origin of life, the early Earth environment, the evolutionary history of life on Earth, life in extreme environments, and methods for detecting life on other worlds such as Mars and Jupiter's satellite Europa. Discussions include philosophical issues such as the nature of life and the significance of finding life elsewhere. Three class hours and one one-hour discussion period a week. Credit 3 units.

A&S NS

EPSc 318. Development of the North American Landscape

Same as AMCS 318, EnSt 318.

Introduction to the nature and evolution of physiographic provinces that underlie the North American continent. Examples drawn from features seen in National Parks and Monuments, selected to illustrate how the present landscape reveals the effects of geologic processes such as mountain building, sedimentation, glaciation, volcanic activity, coastal erosion, action of rivers and ground water, and wind erosion. Examine how human activity affects and modifies landforms and surface features. Two class hours and one two-hour lab a week. Prerequisite: EPSc 201. Credit 3 units.

A&S NS FA NSM

EPSc 323. Biogeochemistry

Same as EnSt 323.

Survey of biogeochemical interactions among Earth's crust, oceans, and atmosphere, including perturbations due to human activities. Carbon, nitrogen, phosphorus, and sulfur biogeochemical cycles. Greenhouse warming of atmosphere from

carbon dioxide and chlorofluorocarbons; effects of inorganic and organic wastes in groundwater systems. Introductory course for students of environmental science and nonscience majors. Prerequisite: high school calculus or permission of instructor. Credit 3 units.

A&S NS FA NSM

EPSc 335. Introduction to Petrology

Classification, origin, mineralogy, and geological occurrence of major igneous and metamorphic rocks. Laboratory emphasis on identification of rocks and minerals in hand specimens and in thin sections. Prerequisite: EPSc 352. Three class hours and one two-hour lab a week. Credit 4 units.

A&S NS FA NSM

EPSc 352. Earth Materials

Fundamental principles of crystal chemistry, symmetry and structure of crystals (minerals), X-ray analysis of crystalline materials, information on the important mineral groups (definition of the groups; composition, structure, physical properties, occurrence, and usage of major mineral species); optical mineralogy. Geological and environmental aspects of earth materials. Prerequisites: EPSc 201 and Chem 112A; or permission of instructor. Three class hours, one two-hour lab, and one two-hour discussion period a week. Credit 5 units.

A&S NS FA NSM

EPSc 353. Earth Forces

Basic concepts regarding the forces that act upon the Earth, how geological materials react to these forces, and the time scale over which they respond. Emphasis on physical concepts needed to understand the geodynamical behavior of the Earth over a broad range of length and time scales. Application and interpretation of geophysical methods to probe the interior of the Earth. Prerequisites: EPSc 201, Phys 117A, and Math 131; or permission of instructor. Three class hours and one two-hour lab a week. Credit 4 units.

A&S NS FA NSM

EPSc 362. Field and Structural Geology

Introduction to concepts and principles of structural geology with emphasis on field and lab methods for mapping and describing geologic structures. Topics include stress and strain, fracturing and brittle behavior, jointing and faulting, plate tectonics, geologic history of North America. Lab and field work include introduction to topographic maps, orthographic projections, Mohr circle of stress, stereonet analysis, structure contouring, pace-and-compass mapping, determination of stratigraphic thickness, construction of geologic maps and cross-sections. One and a half hours lecture, one three-hour lab a week. Up to six additional outdoor exercises on weekends. Prerequisites: EPSc 352, and EPSc 353 or permission of instructor. Credit 4 units.

A&S NS

EPSc 390. Independent Study

Independent study for undergraduates, to be supervised by a faculty member. Prerequisite: permission of instructor. Credit to be determined. Credit variable, maximum 3 units.

FA NSM

EPSc 400. Topics in the Geosciences

The content of this course varies each time it is offered, as announced by the department. With permission of the adviser, this course may be repeated for credit. Prerequisite: permission of instructor. Credit variable, maximum 3 units.

A&S NS FA NSM

EPSc 401. Earth Systems Science

Quantitative introduction to physical and chemical interactions among the atmosphere, oceans, and solid earth. Use of the geologic record to infer how such interactions varied over geologic time.

Prerequisite: EPSc 352, 441, or permission of instructor or the graduate adviser. Credit 3 units.

A&S NS FA NSM

EPSc 407. Remote Sensing

Use of different parts of the electromagnetic spectrum (visible, ultraviolet, infrared, and radio wavelengths) for interpretation of physical and chemical characteristics of the surfaces of Earth and other planets. Digital image systems and data processing. Prerequisite: EPSc 352, Math 233 or permission of instructor. Credit 3 units.

A&S NS FA NSM

EPSc 408. Earth's Atmosphere and Global Climate

Same as EnSt 408.

Structure and dynamics of Earth's atmosphere. Basic factors controlling global climate of Earth. Quantitative aspects of remote sensing of atmosphere. Remote sensing instrumentation. Prerequisites: Math 233 and Phys 117A, or permission of instructor. Credit 3 units.

A&S NS FA NSM

EPSc 409. Surface Processes

How do landscapes evolve? Examination of chemical and physical processes that modify earth's surface. Introduction to soil formation. Focus on modern systems, particularly fluvial, karst, and desert terrains. Brief discussion of coastal and glacial systems. Human agency in geomorphic change. Lab covers survey techniques for acquisition of topographic data and use of geographic information systems for geomorphic and hydrologic analysis. Field trips required. Prerequisites: EPSc 352 and 353. Three class hours and one three-hour lab a week. Credit 4 units.

A&S NS FA NSM

EPSc 410. Earth Remote Sensing Methods and Instrumentation

Detection of electromagnetic radiation reflected, scattered, or emitted by components of the Earth system. Spectroscopy of remote sensing. Interpretation of received radiation via radiative transfer within a context of real measurements. Theory of instruments and detectors. Comparison of realized equipment to theoretical models. Prerequisite: Phys 118A, Chem 112A, Math 233 or equivalent; or permission of instructor. Credit 3 units.

A&S NS FA NSM

EPSc 418. Paleobiology

Detailed survey of the history of life on Earth and the major geological events (e.g., mountain building, change in sea level, continental fragmentation) that affect the evolution and distribution of life. Focus on the past 540 million years, the age of the "more complex" forms of life. Appearance, evolution, and extinctions of the major groups of organisms of this time. Includes major reef-building communities, major plant groups, and important animal groups on land and in the oceans. Environmental change through time and extinctions, both past and current. Prerequisite: EPSc 201 or permission of instructor. EPSc 422 recommended. Three class hours and one two-hour lab a week. Credit 4 units.

A&S NS

EPSc 422. Sedimentary Geology

Survey introduction to sedimentary processes and materials, including description, formation, and interpretation. Sedimentary materials account for most of the Earth's crust, and much of our understanding of Earth history comes from their examination. Many of our economic resources, such as coal, oil, and natural gas, and many environmental problems, are related to or derive from sediments. Goals: understanding and identifying sediments and processes and using them to interpret stratigraphic, paleoenvironmental, and tectonic information; obtaining the understanding of sedimentology that is relevant to environmental issues; in-

creasing scientific literacy and critical thinking. Prerequisite: EPSc 201. EPSc 335 and EPSc 352 recommended. Three class hours and one two-hour lab a week. Mandatory field trips. Credit 4 units.

A&S NS

EPSc 428. Hydrology

Same as EnSt 428.

Survey of principles that govern the flow of water in river and groundwater systems and in deep geologic environments. Basic equations of fluid flow, dynamics, and the characteristics of drainage basins, rivers, and important aquifers. Behavior of floods. Exploitation of ground water systems. Laboratory emphasizes modeling of aquifer and surface water flow. Prerequisites: EPSc 353, Phys 117A, Phys 118A, and Math 233, or permission of instructor. Three class hours and one two-hour lab a week. Credit 4 units.

A&S NS FA NSM

EPSc 430. Environmental Mineralogy

Same as EnSt 432.

Topics connected with environmental mineralogy, some selected by students. Topics may include: mineral dust such as asbestos, containment materials for nuclear waste disposal, environmental ramifications of the processing and use of phosphate fertilizers, lead in the environment, acid mine drainage, microbial mediation of sulfide oxidation, minerals in the human body, weathering of building materials, materials engineering, and engineering of materials for more effective recycling. Participation in discussions, term paper, two field trips required. Most readings from primary sources. Prerequisite: EPSc 352 or permission of instructor. Credit 3 units.

A&S NS FA NSM

EPSc 431. Petrography

Origin of selected igneous and metamorphic rock suites investigated by integrating field, lab, and theoretical approaches to petrogenesis. Petrographic, electron microprobe, and X-ray fluorescence methods taught and utilized as tools in class exercises. Field trips to nearby localities. Prerequisites: EPSc 352 and permission of instructor. Credit 3 units.

A&S NS FA NSM

EPSc 441. Introduction to Geochemistry

Origin, internal composition, and geochemical evolution of the Earth. Reactions and cycles presently operating in the Earth's atmosphere, hydrosphere, and lithosphere. Meteorites, cosmochemistry, use of isotopes in geology. Principles of geochemical analysis. Prerequisites: EPSc 201, and Chem 112A, or permission of instructor. Credit 3 units.

A&S NS FA NSM

EPSc 444. Environmental Geochemistry

Same as EnSt 444.

Interaction of water with minerals and organic compounds at the low temperatures of many environmental settings. Emphasis on understanding groundwater compositions and capacity for transporting metals and organic solutes in the subsurface. Speciation, mass transport, surface reactions, contaminant sources, and remediation methods. Prerequisites: EPSc 352 or permission of instructor. Credit 3 units.

A&S NS FA NSM

EPSc 446. Stable Isotope Geochemistry

Applications of equilibrium and kinetic isotope fractionation and material balance principles to the distribution of oxygen and hydrogen isotopes in natural systems. Geothermometry and paleotemperatures, mass spectrometry, isotope hydrology and ice cores, fluid-rock interaction, igneous rocks and meteorites. Prerequisite: EPSc 441 and Math 233, or permission of instructor. Credit 3 units.

A&S NS FA NSM

EPSc 447. Analytical Methods in Environmental Geochemistry

Same as EnSt 447.

Combined lab-lecture course covering several analytical methods appropriate to environmental geochemistry. Analysis of water, soils, sediments, rocks, and anthropogenic materials that enter the environment. Techniques used directly by students include: Ion Chromatography, Inductively Coupled Plasma-Mass Spectrometry, X-ray Diffraction, and Electron Microprobe analysis. Fundamentals of other techniques, methods of data reduction, statistical evaluation, and geochemical modeling. Prerequisite: EPSc 352 or permission of instructor. One class hour and two two-hour labs a week. Credit 3 units.

A&S NS FA NSM

EPSc 449. Microbes in the Environment

Same as EnSt 4491, Biol 4491.

Microorganisms are ubiquitous and have a large impact on the chemistry of the natural environment. This course covers the basic physiology of the microbial cell as it pertains to how microorganisms interact with the surrounding environment. Topics include cell structure, protein synthesis, gene regulation (how microbes respond to environmental changes), behavior and development, biofilm formation, and energy generation (how they use energy and impact changes in the geochemistry of the environment). Also the evolutionary relationships among microbes, the major groups of free-living microbes and the environments they inhabit, and how microbes have co-evolved with the changing chemistry of the Earth through time. Prerequisite: science majors with junior or senior standing, or permission of instructor. Credit 3 units.

A&S NS

EPSc 452. Introduction to Seismology

Introduction to earthquake and exploration seismology. Seismic wave propagation, data analysis and processing, earthquake mechanisms, seismic constraints on the structure of the Earth, relationship of seismicity to plate tectonics. Prerequisites: EPSc 353 and Math 217, or permission of instructor. Credit 3 units.

A&S NS FA NSM

EPSc 453. Interior of the Earth

Composition and temperature of Earth's mantle and core, determined by geophysical methods. Inferences about mantle and core dynamics, especially interactions. Current understanding and history of interior in fields of seismology, geomagnetism, mineral physics, geodynamics. Prerequisite: EPSc 353, or permission of instructor. Credit 3 units.

A&S NS FA NSM

EPSc 454. Exploration and Environmental Geophysics

Basic geophysical techniques used in exploration and environmental geophysics, emphasizing seismic and electromagnetic methods. Basic theory, field procedures, and interpretation of data. Use of geophysical instruments on field trips, followed by reduction and analysis of acquired data. Prerequisites: EPSc 353, Phys 118A, and Math 233; or permission of instructor. Two class hours and one two-hour lab a week, and approximately four one-day field trips during the semester. Credit 4 units.

A&S NS FA NSM

EPSc 456. Geochemistry of Hot Spring Ecosystems

Credit 6 units.

A&S NS FA NSM

EPSc 460. Introduction to Structural Geology

Stress and strain, elementary rock mechanics and fracture theory, faulting, plastic deformation, mechanics of folding, strain analysis, application to

thrust belts, multiple folded terrains, and sedimentary basins. Laboratories in map interpretation, fault problems, stereo nets, and subsurface geology. Prerequisites: Math 131 and 132, or Math 141. Three hours of lecture and one two-hour lab a week. Credit 4 units.

A&S NS FA NSM

EPSc 473. Planetary Geology

Discussion of the evolution of the terrestrial planets and the outer-planet satellites as evidenced by the geologic records left on the surfaces of these bodies. Focus on major processes affecting planetary surfaces: impact cratering, volcanism, tectonism, and erosion and sedimentation by wind and water. Prerequisite: EPSc 352 and EPSc 353, or permission of instructor. Credit 3 units.

A&S NS FA NSM

EPSc 474. Planetary Geochemistry

A survey of the geochemistry of the planets and their satellites using data from Earth-based, Earth-orbital, and spacecraft observations. Prerequisite: EPSc 352 and permission of instructor. Credit 3 units.

A&S NS FA NSM

EPSc 480. Special Topics in Microbiology-Chemistry-Earth Science

Same as EnSt 480.

Investigation of scientific questions at the interface of microbiology, biochemistry, ecology, geochemistry, and environmental studies. Content varies each time this course is offered. With permission of the chair, course may be repeated for credit. Prerequisite: permission of instructor. Credit 3 units.

A&S NS

EPSc 484. Paleoenvironmental Reconstruction

Same as ARC 484.

How do we know about environments of the geologic past? Survey of paleoenvironmental proxies (stable isotopes, macroflora, macro- and microfauna, pollen/palynomorphs, paleosols, lacustrine sediments, etc.); applications and limitations of each proxy; analytical techniques. Focus on terrestrial, as opposed to marine, environments. Prerequisites: EPSc 201 or permission of instructor. EPSc 422 recommended. Credit 3 units.

A&S NS

EPSc 490. Independent Study

Independent study for advanced undergraduates or for graduate students, to be supervised by a faculty member. Prerequisite: permission of instructor. Credit to be arranged. Credit variable, maximum 12 units.

EPSc 498. Undergraduate Research Seminar

Same as EnSt 4980.

Provides an opportunity for advanced undergraduates to synthesize many of the diverse subdisciplines of Earth and Planetary Sciences while focusing on a research topic. Subject changes each offering. Each subject is unique and timely but broad enough to encompass wide-ranging interests among students. Students conduct original research, make written reports of the results, and make oral presentations of their projects in class. Prerequisite: senior standing or permission of instructor. Credit 3 units.

A&S NS WI FA NSM

EPSc 499. Honors Research

Independent work for undergraduate Honors, to be supervised by a faculty member. Prerequisites: senior standing, eligibility for Honors, and permission of instructor. Credit 3 units.

A&S NS FA NSM

East Asian Studies

Director

Rebecca L. Copeland
(Asian and Near Eastern Languages)
Ph.D., Columbia University

Endowed Professors

John Owen Haley
Wiley B. Rutledge, Jr., Professor of Law
(Law)
LL.M., University of Washington

Robert E. Hegel
Lieselotte Dieckmann Professor
of Comparative Literature
(Asian and Near Eastern Languages)
Ph.D., Columbia University

Charles R. McManis
Thomas and Karole Green
Professor of Law
(Law)
J.D., Duke University

Professors

Frances H. Foster
(Law)
J.S.D., Stanford University

Beata Grant
(Asian and Near Eastern Languages)
Ph.D., Stanford University

Associate Professors

Mary-Jean Cowell
(Performing Arts)
Ph.D., Columbia University

Marvin H. Marcus
(Asian and Near Eastern Languages)
Ph.D., University of Michigan

Assistant Professors

Gwen Bennett
(Art History and Archaeology)
Ph.D., University of California–Los Angeles

Lingchei Letty Chen
(Asian and Near Eastern Languages)
Ph.D., Columbia University

Pauline Chen Lee
(Asian and Near Eastern Languages)
Ph.D., Stanford University

Andrew Mertha
(Political Science and International and
Area Studies)
Ph.D., University of Michigan

Stephen B. Miles
(History)
Ph.D., University of Washington

Elizabeth A. Oyler
(Asian and Near Eastern Languages)
Ph.D., Stanford University

Lori Watt
(History)
Ph.D., Columbia University

Adjunct Associate Professor

Michele Shoresman
(Law and East Asian Studies)
Ph.D., University of Illinois

Senior Lecturers

Xia Liang
(Asian and Near Eastern Languages)
M.A., Beijing Normal University

Virginia S. Marcus
(Asian and Near Eastern Languages)
M.A., University of Michigan
M.A., New York University

Judy Zhijun Mu
(Asian and Near Eastern Languages)
Ph.D., University of Illinois at
Urbana–Champaign

Fengtao Wu
(Asian and Near Eastern Languages)
M.A., Indiana University–Bloomington

Lecturers

Hiroo Aridome
(Asian and Near Eastern Languages)
M.A., University of Minnesota

Mijeong Mimi Kim
(Asian and Near Eastern Languages)
Ed.D., University of San Francisco

Kayo Niimi
(Asian and Near Eastern Languages)
M.A., Ohio State University

Wei Wang
(Asian and Near Eastern Languages)
M.A., University of Minnesota
M.A., Beijing Language and
Culture University

Adjunct Lecturer

Steven Owyong
Curator of Asian Art
(Saint Louis Art Museum)

East Asian Librarians

Tony Chang
M.L.S., University of California–Berkeley

Asako Shiba
M.L.S., University of Hawaii, Manoa

Wai-man Suen
B.A., Hong Kong Baptist College

Professors Emeriti

George C. Hatch, Jr.
(History)
Ph.D., University of Washington

Robert E. Morrell
(Asian and Near Eastern Languages)
Ph.D., Stanford University

Laurence A. Schneider
(History)
Ph.D., University of California–Berkeley

James C. Shih
(Asian and Near Eastern Languages)
Ph.D., University of California–Berkeley

John E. Walsh, Jr.
(Business)
D.B.A., Harvard University

East Asian Studies Concentration: If you have particular interest in the cultures and societies of East Asia and would like to study them from a comparative, interdisciplinary perspective, you may major in Interna-

tional and Area Studies (IAS) with a concentration in East Asia. (For more information, refer to International and Area Studies.) From the ancient foundations of East Asia to its most recent transformations, this program offers a wide range of courses. Washington University is one of the oldest centers for the study of China and Japan in the United States, and it also includes selected course work on Korea. In modern Chinese and Japanese language, we offer courses through the advanced level, in addition to classical language study. You may pursue Korean language study through the intermediate level.

For the requirements for a major in International and Area Studies with an East Asian Studies Concentration, please refer to International and Area Studies.

Undergraduate Courses

East Asia 110. Basic Principles and Practice of Chinese/Japanese Calligraphy
Same as Chinese 110.
A&S LA

East Asia 111E. Introduction to Asian Art
Same as Art-Arch 111E.
A&S CD LA

East Asia 200. Topics in Asian and Near Eastern Languages and Literatures
Same as ANELL 200.
A&S CD TH

East Asia 2081. Freshman Seminar: The Chinese American Experience
Same as ANELL 208.
A&S SD TH

East Asia 223C. Korean Civilization
Same as ACC 223.
A&S CD TH

East Asia 224C. East Asian Philosophies
Same as ACC 224C.
A&S TH

East Asia 226C. Japanese Civilization
Same as ACC 226.
A&S CD SD TH FA SSP

East Asia 227C. Chinese Civilization
Same as ACC 227.
A&S CD SD TH

East Asia 228. Performing Medieval Japanese Musical Narrative

East Asia 233F. Religions of Asia
Same as Re St 233C.
A&S TH

East Asia 235. Warrior Culture of Japan
Same as ACC 235.
A&S TH

East Asia 236F. Introduction to East Asian Religions
Same as Re St 236F.
A&S CD TH FA SSP

East Asia 245. Introduction to Buddhism
Same as Re St 245.
A&S CD TH FA SSP

East Asia 246. Introduction to Taoism
Same as Re St 246.
A&S CD TH FA SSP

East Asia 293C. Freshman Seminar: Images of East Asia: Geisha
Same as ACC 293C.

East Asia 294. Images of East Asia
Same as ACC 294.

East Asia 305. History of Premodern China*Same as History 305.*

A&S TH FA SSP

East Asia 3051. Anthropology of Tibet and the Himalayas*Same as Anthro 3051.*

A&S SS FA SSP

East Asia 308. Topics in Asian-American Literature: Identity and Self-Image*Same as E Lit 308.*

A&S SD TH FA Lit

East Asia 309. Chinese Thought*Same as Re St 309.*

A&S CD TH WI

East Asia 311C. History of Japan to the Eve of Modernization*Same as History 319C.*

A&S TH FA SSP

East Asia 312C. Modern Japan*Same as History 320C.*

A&S CD TH FA SSP

East Asia 3162. Early Modern China: 1350–1890*Same as History 3162.*

A&S TH

East Asia 316C. Modern China: 1800–Present*Same as History 316C.*

A&S TH FA SSP

East Asia 317C. Contemporary China: People's Republic and Taiwan

Credit 3 units.

A&S TH FA SSP

East Asia 327. Topics in History of Developing Areas I*Same as History 327.*

A&S TH FA SSP

East Asia 3301. Topics in Chinese Literature and Culture:*Same as Chinese 330.*

A&S CD TH

East Asia 332C. The Classical Voice in Japanese Literature*Same as Japan 332C.*

A&S CD, TH FA Lit

East Asia 3333. The Art and Archaeology of Japan and Korea*Same as Art-Arch 3333.*

A&S TH

East Asia 333C. The Modern Voice in Japanese Literature*Same as Japan 333C.*

A&S CD TH FA Lit

East Asia 3363. China Under Revolution and Reform*Same as IAS 336.*

A&S CD, SS

East Asia 3364. Topics in Politics: Korean Politics and Society*Same as Pol Sci 336.*

A&S SS FA SSP

East Asia 3411. Literature of Early and Imperial China*Same as Chinese 341.*

A&S CD SD TH FA Lit

East Asia 3421. Literature of Modern and Contemporary China*Same as Chinese 342.*

A&S CD SD TH FA Lit

East Asia 3423. From Ancient Worlds to Contemporary Practice*Same as Art-Arch 3423.*

A&S TH

East Asia 351. Warrior Culture of Japan*Same as ACC 351.*

A&S TH

East Asia 3561. Topics in Politics: The Politics of Security in East Asia*Same as Pol Sci 3561.*

A&S SS

East Asia 3580. Chinese Art and Culture*Same as Art-Arch 3580.*

A&S TH

East Asia 369. Politics of International Trade*Same as Pol Sci 369.*

A&S SS WI FA SSP

East Asia 382. Writing Women of Imperial China*Same as Chinese 382.*

A&S TH

East Asia 3891. East Asia Since 1945: From Empire to Cold War*Same as History 3891.*

A&S CD TH

East Asia 398. Rivers: A Comparative Approach to Chinese and World History*Same as History 398.*

A&S TH WI

East Asia 4001. Asian and Near Eastern Languages and Literatures Seminar*Same as ANELL 400.*

A&S CD TH

East Asia 4031. East Asian Educational Policy*Same as IAS 4031.*

A&S CD TH FA SSP

East Asia 4032. Gender and Labor Politics in East Asia*Same as Anthro 4031.*

A&S SS FA SSP

East Asia 4064. Current Issues in Contemporary Chinese Politics

Credit 3 units.

East Asia 4141. Readings in Classical Chinese Philosophy*Same as Chinese 414.*

A&S CD TH

East Asia 426. Reading Seminar: China: Thought and Society in Late Imperial China, 1600–1911*Same as History 4261.*

This seminar will deal with various topics in Chinese sociocultural history of the given period. Among the topics to be discussed: the foundations of Chinese society; social ideology and stratification; the fluidity of the status system; urban social organization; the rise of the evidential scholarship; from culturalism to modern nationalism; and the role of the Confucian scholarships in the 1898 constitutional movement and the 1911 revolution. Credit 3 units.

A&S TH FA SSP

East Asia 4321. Topics in Comparative Politics: Development and Democracy in East Asia*Same as Pol Sci 432.*

A&S SS FA SSP

East Asia 434. Seminar: History, Economy, and Society of Taiwan

The first half of the seminar reviews the history of Taiwan from the 17th century. The second half focuses on selected topics in the study of Taiwanese society. Credit 3 units.

A&S TH FA SSP

East Asia 445. Japanese Fiction*Same as Japan 445.*

A&S CD TH WI FA Lit

East Asia 446. Japanese Theater*Same as Japan 446.*

A&S CD SD TH FA Lit

East Asia 4471. Japanese Film*Same as Japan 447.*

A&S TH FA Lit

East Asia 4483. Japanese Poetry*Same as Japan 448.*

A&S TH FA Lit

East Asia 4492. Modern Japanese Women Writers: Madame Butterfly's Delinquent Daughters*Same as Japan 449.*

A&S CD SD TH WI

East Asia 4493. The Production of East Asian Art: When Materials Become Media: Bronze, Silk and Porcelain*Same as Art-Arch 4493.*

A&S TH

East Asia 4641. Japanese Textual Analysis*Same as Japan 464.*

A&S LA

East Asia 467. The Chinese Theater*Same as Chinese 467.*

A&S CD SD TH FA AH

East Asia 4681. Cities in Asia*Same as IAS 468.*

A&S TH

East Asia 469. East Asian Feminisms*Same as History 4693, WGS 4691, IAS 469.*

This course will study the beginnings and the transformations in feminist thought as found in East Asia. It will explore feminism as found in China, Taiwan, Japan, and Korea focusing on the period from the late 1800s to the present. Emphasis will be on the diversity of feminisms both between and within these cultures. Credit 3 units.

A&S SD TH

East Asia 470. Readings in Chinese Literature*Same as Chinese 470.*

A&S TH FA Lit

East Asia 471. Topics in Japanese Culture*Same as IAS 4711, Japan 471.*

Credit 3 units.

A&S TH FA SSP

East Asia 4711. Topics in Religious Studies*Same as Re St 4711.*

A&S TH FA SSP

East Asia 476. Reading Seminar in Chinese Traditional Fiction*Same as Chinese 476.*

A&S TH FA Lit

East Asia 4761. Topics in Religious Studies: Chinese Popular Religion*Same as Re St 476.*

A&S TH FA AH Lit

East Asia 479. Reading Seminar in Modern Chinese Literature*Same as Chinese 479.*

A&S CD TH FA Lit

East Asia 4791. Seminar in Religious Studies: Engendering Religious Studies*Same as Re St 479.*

A&S SD TH

East Asia 480. Topics in Buddhist Tradition*Same as Japan 480, Re St 480, IAS 4800.*

Emphasis on Japanese development of the Buddhist tradition during the Heian and Kamakura periods, including antecedents in India and China; the major shifts in Buddhist, especially Mahayanist, theory and practice. Credit 3 units.

A&S TH FA SSP

East Asia 4801. Reading Seminar in Chinese Popular Literature and Culture*Same as Chinese 480.***A&S** TH **FA** Lit**East Asia 4811. Reading Seminar in Religion and Chinese Literature***Same as Chinese 481.***A&S** TH **FA** Lit**East Asia 482. Reading Seminar in Gender and Chinese Literature***Same as Chinese 482.***A&S** TH **FA** Lit**East Asia 484. Core Seminar in East Asian Studies: East Asia in Scholarly Literature***Same as IAS 484, History 4841.*

Introduction to problems and approaches in East Asian Studies. Credit 3 units.

A&S CD TH WI **FA** SSP**East Asia 4842. The Japanese Empire in Asia, 1874–1945***Same as History 4842.***A&S** CD TH**East Asia 486. Independent Work for Senior Honors**

By the beginning of the senior year, the student is expected to have met with a primary adviser and agree on a topic. Next, the student and the adviser choose two other faculty members to be on the committee and a one-page prospectus is sent to everyone on the committee for their approval. The primary adviser is responsible for reading the preliminary drafts and deciding any technical or format questions. In the first week of March the student submits a copy of the thesis, which is defended the week after spring break. After a successful defense, the student revises the paper according to the committee's suggestions and submits it to the department before the notification date established by Arts & Sciences that year. Prerequisite: Senior standing. Credit 3 units.

East Asia 488. Directed Study (in China)

Credit variable, maximum 3 units.

East Asia 489. Directed Study (in Japan)

Credit variable, maximum 3 units.

East Asia 4891. Topics in Modern Chinese Literature*Same as Chinese 489.***A&S** TH **FA** Lit**East Asia 4892. Topics in Chinese Literature and Culture: The Chinese City in the Global Context***Same as Chinese 4891.***A&S** SS**East Asia 490. Topics in Chinese Literature and History***Same as Chinese 490.***A&S** TH **FA** Lit SSP**East Asia 4903. Advanced Seminar in History: Modern Japanese History***Same as History 4921.***A&S** TH **FA** SSP**East Asia 4911. The Nativist Dimension in Modern Japanese Culture***Same as IAS 4912, Japan 4911.*

A discourse of “uniqueness” has been a prominent feature of Japanese culture in the 20th century, both before and after the Pacific War. This course will explore the domain of nativist expression in modern Japan. While focusing on literary texts by writers such as Kawabata and Tanizaki, we will also consider a range of artistic, cinematic, and cultural production. Considerable attention will be paid to “Nihonjinron,” an important—and best-

selling—genre of “Japanese uniqueness” writing. Our goal will be to make sense of the complex intersection of traditionalism and modernism in 20th century Japan and to consider the larger question of modern nationhood and the construction of national identity. Credit 3 units.

A&S TH**East Asia 4914. Advanced Seminar in History: Japan in World War II: History and Memory****East Asia 4921. History of Japanese Political Economy****East Asia 4923. Advanced Seminar: Communist China***Same as History 4923.***A&S** TH **FA** SSP**East Asia 4924. Reading Seminar: Women in Chinese History***Same as IAS 4927.*

This course is designed to familiarize students with the scholarship on the history of women in Late Imperial and Modern China. Topics to be covered include marriage and the lives of Chinese women, women's culture, women's property rights; women's writing and education, work, and the early 20th century and feminist movement, women in the early Communist movement, women in the PRC. We will discuss past scholarly interpretations and evaluate the nature and possibilities of the discipline today. Credit 3 units.

A&S TH **FA** SSP**East Asia 4932. Advanced Seminar: Japanese Foreign Relations***Same as History 4932.***A&S** TH WI **FA** SSP**East Asia 4959. Advanced Seminar: Modern Japan***Same as History 4959.***A&S** TH**East Asia 496. Readings in Asian Studies***Same as IAS 4961.*

Prerequisite: permission of the chair of the department. Credit variable, maximum 3 units.

A&S TH**East Asia 4967. Advanced Seminar: East Asian History***Same as History 4967.***A&S** TH**East Asia 4971. Guided Readings in Korean***Same as L51 Korean 497.***A&S** LA**East Asia 4972. Advanced Seminar: The Japanese Empire in Asia, 1874–1945**

Credit 4 units.

A&S TH **FA** SSP**East Asia 498. Guided Readings in Chinese***Same as Chinese 498.***A&S** LA**East Asia 4982. Advanced Seminar: Women and Confucian Culture in Early Modern East Asia***Same as History 4982.***A&S** TH**East Asia 499. Guided Readings in Japanese***Same as Japan 499.***A&S** LA**East Asia 4997. Advanced Seminar: Individual and Society in Revolutionary China***Same as History 4997.***East Asia 4999. Introduction to Comparative Civilizational Analysis: U.S., China, and Japan***Same as History 4999.***A&S** TH**East Asia 500. Independent Study**

Prerequisites: senior standing, permission of instructor and the director of East Asian Studies. May be repeated. Credit variable, maximum 3 units.

East Asia 502. Directed Research in Asian Studies

Directed research in Asian Studies. Permission of the director of East Asian Studies required. Credit variable, maximum 3 units.

Economics

Chair

Steven Fazzari, Professor
Ph.D., Stanford University

Endowed Professors

Douglass C. North
Spencer T. Olin Professor in Arts & Sciences
Ph.D., University of California–Berkeley

Robert A. Pollak
Hernreich Distinguished Professor of
Economics
Ph.D., Massachusetts Institute of Technology

Norman J. Schofield
William Taussig Professor of
Political Economy
Litt.D., Liverpool University

Murray L. Weidenbaum
Edward Mallinckrodt Distinguished
University Professor
Ph.D., Princeton University

Professors

Lee K. Benham
Ph.D., Stanford University

Marcus Berliant
Ph.D., University of California–Berkeley

Edward Greenberg
Ph.D., University of Wisconsin

John H. Nachbar
Ph.D., Harvard University

Wilhelm Neufeind
Ph.D., Universität Bonn

Robert P. Parks
Ph.D., Purdue University

Bruce Petersen
Ph.D., Harvard University

Associate Professors

Gaetano Antinolfi
Ph.D., Cornell University

Sukko Kim
Ph.D., University of California–Los Angeles

John V. Nye
Ph.D., Northwestern University

Fredric Q. Raines
Ph.D., University of Wisconsin

Paul Rothstein
Ph.D., University of California–Berkeley

Assistant Professors

Donald Nichols
Ph.D., Stanford University

Stephanie Lau
Ph.D., Yale University

James Morley
Ph.D., University of Washington

Charles Moul
Ph.D., Northwestern University

Adjunct Professors

Dorothy Petersen
Ph.D., Northwestern University

Mark Vaughan
Ph.D., Washington University

Professors Emeriti

David Felix
Ph.D., University of California–Berkeley

Charles L. Leven
Ph.D., Northwestern University

The economics program explores the problems of a modern economy and introduces the analytical tools economists use. It emphasizes the development of analytical models and their application to important economic, social, and political issues such as inflation, unemployment, taxation, poverty, pollution, and government decision making and regulation. Our faculty, which is made up of leading teacher-scholars, includes specialists in economic history, game theory and microeconomics, industrial organization, macroeconomics and monetary economics, political economy, and public finance.

The study of economics contributes to a broad liberal arts education and helps you develop good problem-solving skills. It is an excellent course of study to pursue, whether you plan to enter the workforce after graduation or you are considering graduate work in law, engineering, or the social sciences. You may take advantage of special internships and participate in faculty research projects. Economics also provides excellent preparation for careers in business, either immediately following graduation or after graduate work in an M.B.A. program. In addition to the introductory and intermediate economic theory courses, courses that have particular relevance for business include: Econ 330, 335, 376, 413, 450, 451, 452, 453, 456, and 487. Economics students with business interests should also strongly consider completing an internship (Econ 299) in their junior or senior year to obtain practical business experience and should discuss with their advisers the possibility of taking some courses in the Olin School of Business.

The Major: Requirements include Econ 103B and 104B, Math 131 (or a more advanced calculus course), Math 320 or SSM 326 (or an alternative statistics course, which must be approved by the department), and a minimum of 18 advanced units in economics. Advanced units must include Econ 401 and 402, usually taken in the sophomore or junior year, and at least two additional advanced courses with a 401 or 402 prerequisite.

The Minor: To minor in economics, you must complete at least 15 units in economics, with at least 9 of those in advanced courses. The general minor must include both Econ 401 and 402. The applied micro minor must include Econ 401 and one course with a 401 prerequisite. The applied macro minor must include Econ 402 and one course with a 402 prerequisite.

Senior Honors: Students are invited by the department to participate in Senior Honors if they meet certain academic requirements. To graduate with Honors, you must have 9 units of courses with Econ 401 or 402 prerequisites and 3 advanced units beyond the 18 required for the major, which are earned by writing an Honors thesis.

More information on the major, the minor, course offerings, and Senior Honors are in the *Undergraduate Programs in Economics* brochure available from the department.

Undergraduate Courses

Econ 103B. Introduction to Political Economy: Microeconomics

Same as STA 103B, Lw St 103B, AMCS 103B. Determination of prices; distribution of national income; theory of production. For a thorough introduction to economics, Econ 104B should also be taken. Credit 3 units.

A&S QA SS **FA** SSP

Econ 104B. Introduction to Political Economy: Macroeconomics

Same as Lw St 104B, STA 104B. Business fluctuations: inflation, recession; monetary and fiscal policy; economic development. For a thorough introduction to economics, Econ 103B should also be taken. Credit 3 units.

A&S QA SS **FA** SSP

Econ 110. Introduction to Computing

Introduction to the fundamental tools for network computing including telnet, ftp, e-mail, news, and the World Wide Web (including the construction of Web pages), and collaborative tools. Brief coverage of text editors, word processors, spreadsheets, databases, etc. Introduction is tailored to the needs of Arts & Sciences students. Prerequisite: None. Credit 3 units.

A&S SS **FA** SSP

Econ 123. Introductory Research Seminar in Microeconomics

Exploration of principles of microeconomics in a seminar setting. Reading from primary sources by authors including Adam Smith, Thomas Schelling, and Kenneth Arrow. Internet exchanges of critiques and questions take place prior to each class. Class follow a question-and-answer format based on internet exchanges. Each student produces and presents a short research paper using economic concepts (including substitution, opportunity cost, market equilibrium). Paper topics address specific current economic questions such as: Are costs higher in poorer areas? Do injuries go up or down for university students with more restrictive alcohol policies? This course substitutes for Econ 103 for all major and minor requirements. Enrollment limited to 20 students. Credit 3 units.

A&S SS **FA** SSP

Econ 124. Principles of Macroeconomics Seminar with Computing Applications

Introduction to macroeconomic principles including business fluctuations, monetary and fiscal policy, inflation, and international exchange rates. Students use modern computing resources to complete various assignments such as retrieving price indices and constructing a Web page. This course substitutes for Econ 104 for all major and minor requirements. Enrollment limited to 25 students. Credit 3 units.

A&S SS **FA** SSP

Econ 2610. Principles of Financial Accounting

Same as Acct 2610.

Econ 2620. Principles of Managerial Accounting

Same as Acct 2620.

Econ 290. Sophomore Research Seminar

Seminar for sophomores to develop research skills in economics. Work consist of an original research paper to be completed by the student by the end of the semester under supervision of the instructor. The paper may describe an economic problem and survey the relevant research literature, although original research is encouraged. Some group meetings may be scheduled but most of the con-

tact is in individual meetings by appointment with the instructor. Prerequisites: Econ 103 and 104, sophomore standing, GPA of 3.0 or higher. Credit 3 units.

A&S SS

Econ 298. Independent Study in France

Credit 3 units.

Econ 299. Internship

Students may receive up to 3 units of credit for an approved, faculty-sponsored internship. The internship must be approved by The Career Center and supervised by a faculty member. Prerequisites: Econ 103B and 104B. Credit variable, maximum 3 units.

FA SSP

Econ 303. Intermediate Microeconomics

Behavior of business firms in pure and imperfect competition, determination of relative prices and wages, processes by which human and material resources are allocated. Credit 3 units.

A&S SS

Econ 313. Economics in Transition and Development

Same as Econ 313.

Econ 317. Economics of Sports

Same as Econ 317.

A&S SS

Econ 317I. Economics of Sports

Same as Econ 317, AMCS 3170.

The economics of sports focuses on the business aspects of professional and intercollegiate sports in the United States. Questions posed and addressed in this course include: do the benefits of publicly subsidized stadiums justify their costs; how do the four major sports differ in terms of the structure of their labor markets; how far away are Division I schools from Title IX compliance; are sports betting markets consistent with the theory of efficient markets; does the success of a school's intercollegiate sports program enhance alumni donations or the number of applications to that school; how can salary models be used to assist the determination of player value; how can attendance models be used to assist the marketing strategies of that team or school. Additionally, the students are able to meet some key members of the St. Louis sports scene and have an opportunity to assist with creating an economic impact analysis on a local sporting event. Prerequisite: Econ 103B. Credit 3 units.

A&S SS

Econ 326. American Economic History

Same as History 326I, ISA 326, STA 366, Lw St 326, AMCS 326.

Basic theoretical concepts applied to analyze the changing structure and performance of the American economy from colonial times to the present. Prerequisites: Econ 103B and 104B. Credit 3 units.

A&S SS FA SSP

Econ 326I. Learning by Playing Games in Economics

Same as Pol Sci 362I.

A&S SS FA SSP

Econ 333. Economics of the European Union

Same as Econ 333I, IAS 3330, EuSt 333, Pol Sci 333I.

Introduction to economic integration and policy in the European Union. Overview of the European economy and analysis of monetary union, tax policy, labor markets, and international trade. Consideration of debates about extension of the union to new countries and comparison with the U.S. economy. Prerequisite: Econ 104B. Credit: 3 units.

A&S SS

Econ 335. Money and Banking

Money and the monetary system; money creation by the banking system; central bank functions; monetary theory and economic policy. Prerequisites: Econ 103B and Econ 104B. Credit 3 units.

A&S SS FA SSP

Econ 337. Financial Intermediaries in the Market Economy

Same as Econ 337.

Econ 347W. Federalism and the Economics of Public Policy

The economic rationale for multiple tiers of government in the development, implementation, and financing of public policies. Begins with an historical overview of the political and legal dimensions of American federalism, then considers federalism and economic efficiency and the principles of fiscal federalism. The second half of the class examines particular policy areas in which there is significant involvement of federal government with state or local government. Possible topics include homeland security, health care, mass transportation, energy policy, education reform, welfare reform, and urban development. Students required to submit several short essays for discussion and revision. Enrollment limited to 15 students. Prerequisite: Econ 103B and Econ 104B. Credit 3 units.

A&S SS WI

Econ 350. Politics, Economics and Welfare

Same as Pol Sci 3502, STA 315, Lw St 350, IAS 350I, AMCS 353, Econ 350I.

Covers both theoretical and applied aspects of political economy: the justification of the state; problems of cooperation over public goods; intervention by government in the economy; questions of equality and efficiency; cooperation between states over common resources; trade, economic integration, international monetary stability, and the operation of the global economy. Prerequisite: Econ 103B. Credit 3 units.

A&S SS FA SSP

Econ 350I. Political Economy

Same as AMCS 350I.

Covers both theoretical and applied aspects of political economy: the justification of the state; problems of cooperation over public goods; intervention by government in the economy; questions of equality and efficiency; cooperation between states over common resources; trade, economic integration, international monetary stability, and the operation of the global economy. Prerequisite: Econ 103B. Credit 3 units.

A&S SS

Econ 352. Health Economics

Analysis of consumer demand for health care, medical technology, and the role of health insurance. Emphasis placed on behavior of the physician (whether he acts as an agent for the consumer or on his own behalf); on the use of paramedics, preventive care, outpatient care, and the general market organization of the health industry. The major concern is the rising cost of health care and appropriate public policy responses. Prerequisite: Econ 103B. Credit 3 units.

A&S SS FA SSP

Econ 353. The Economics of the Law

Same as Lw St 353, STA 337I, ISA 353, Pol Econ 353.

Course examines the principal findings of the scholarly literature on the application of economics to law, including such topics as public regulation of the market, concepts of property rights in law and economics, the effect of property rights assignment on income distribution, negligence, no-fault insurance, deterrence and the economic theory of remedies, evidence on the deterrent effect of punishment, and the economics of organized crime. Emphasis is primarily on the application of theory to specific legal issues. Prerequisite: Econ 103B or permission of instructor. Credit 3 units.

A&S SS FA SSP

Econ 353I. Law and Economics

Same as Econ 353I.

Econ 371W. Hierarchy and Organization in Economic Life

Same as Econ 371.

Introduction to new institutional perspectives on problems of economic growth and transition. Basic issues in economic development discussed from a microeconomic perspective with attention paid to the role of political economy, credible commitment, institutional constraints, and the problem of high transactions costs. Material from the literature on industrial organization and management also used to show similarities between hierarchical issues both in political economy and within large firms. Discussion of transition economies of Central and Eastern Europe and transformation in the wealthiest economies, like the United States and Japan, as well as traditional questions of underdevelopment. Students required to submit several short and one or two longer essays for discussion and revision. Enrollment limited to 15 students. Prerequisite: Econ 103B. Credit 3 units.

A&S SS WI FA SSP

Econ 374. International Finance

This course presents ideas and concepts pertaining to international macroeconomics and the global economy. Topics to be covered include: the balance of payments; exchange rate determination; international macroeconomics; and international macroeconomic policy and policy coordination. Particular attention is paid to the role of the United States in the global macroeconomic arena. The material is presented through a combination of lectures and case discussions. Prerequisite: Econ 104B. Credit 3 units.

A&S SS FA SSP

Econ 377. International Political Economy

Same as EuSt 377, IAS 3772.

The focus is on the political and economic relationships between nation states, considering both cooperation and conflict. We first consider the evolution of the international order since 1945, covering trade, monetary arrangements, and commodity agreements. We also consider questions of hegemonic stability (based on the United States and Britain in the 19th and 20th centuries). We conclude with a historical discussion of political economic relationships between Britain, France,

A&S Requirements for College of Arts & Sciences students (for more information, see page 27).

CD = Cultural Diversity

LA = Languages and the Arts

NS = Natural Sciences and Mathematics

QA = Quantitative Analysis

SD = Social Differentiation

SS = Social Sciences

TH = Textual and Historical Studies

WI = Writing-Intensive Course

FA Requirements for College of Art students (for more information, see page 305).

AH = Art History

Comp = English Composition

Lit = Literature

NSM = Natural Sciences or Mathematics

SSP = Social Sciences or Philosophy

Spain, and the United States in the 18th and early 19th centuries. Prerequisites: Econ 103B and Econ 104B. Credit 3 units.

A&S SS FA SSP

Econ 390. Junior Research Seminar

Seminar for juniors to develop research skills. Work consists of an original research paper to be completed by the student by the end of the semester under supervision of the instructor. The research topic should apply economic theory and data analysis skills. Students are encouraged to collect original data where feasible. Some group meetings may be scheduled but most of the contact is in individual meetings by appointment with the instructor. Registration in this course is encouraged for students considering senior honors work in economics. Note that this course does not satisfy economics major requirements. Prerequisites: Econ 401 and 402 (concurrent registration is acceptable), junior standing, GPA of 3.3 or higher. Credit 3 units.

A&S SS

Econ 401. Price Theory

Same as Pol Econ 401.

Analytic theory of consumer and producer behavior under perfect competition; determination of prices, wages, and allocation of resources. Extension to imperfect competition: monopoly, oligopoly, public goods. Required course for Economics majors. Thorough training in intermediate theory would require both Econ 401 and Econ 402. Prerequisites: Econ 103B and Math 131. Credit 3 units.

A&S SS FA SSP

Econ 402. Income and Employment Theory

Same as Pol Econ 402.

Analysis of forces that determine the general level of prices, output and employment; relationship between economic growth and business fluctuations; policies for achieving full employment and price stability. Required course for Economics majors. Thorough training in intermediate theory would require both Econ 401 and Econ 402. Prerequisites: Econ 104B and Math 131. Credit 3 units.

A&S SS FA SSP

Econ 408W. Household Finance, Bankruptcy, and Credit

Economic aspects of household financial decisions and survey of data on U.S. consumer financial conditions. Topics include inter-temporal decision making; the mathematics of amortizing debt; bankruptcy decisions and the legal process of bankruptcy; and the effect of asymmetric information on access to consumer credit. This is a writing-intensive class, with multiple writing assignments, a term paper developed in three or four steps, with required revisions, and a class presentation based on the final paper. Prerequisite: Econ 401. Credit 3 units.

A&S SS WI

Econ 4111. Optimization and Economic Theory

An introduction to mathematical optimization and its applications within economics. The course is designed for, and should be taken by, all undergraduates considering graduate study in economics, but all interested students are welcome. Prerequisites: Econ 401, Math 233, and Math 309 or permission of the instructor. Credit 3 units.

A&S SS

Econ 413. Introduction to Econometrics

Same as Pol Econ 413, ASTAT 350C, ASTAT 515C.

Course provides a basic working knowledge of econometrics. Topics include: translation of economic theory into statistical models, statistical foundations of econometrics, pre-regression analysis bivariate and multiple regression techniques, hypothesis testing, multicollinearity, specification error, auto correlation, errors in variables, identifi-

cation, and simultaneous estimation. Prerequisites: Econ 103B, Econ 104B and Math 320 or equivalent. Credit 3 units.

A&S SS FA SSP

Econ 418. Mathematical Economics

Principal mathematical formulations used in economic analysis. Acquaints student with those aspects of economic theory typically formulated in mathematical terms. Prerequisites: Econ 401 and Math 132. Credit 3 units.

A&S SS FA SSP

Econ 423. Western Economic History

Same as History 4231, STA 467, IAS 4231, IDEV 423.

A detailed discussion of the circumstances surrounding the industrialization of the Western world in the 18th and 19th century, with special attention given to Britain, France, and Germany. Various hypothesis regarding economic growth and development are examined in the light of the latest evidence and with the use of basic economic reasoning. Prerequisites: Econ 401, or Econ 103B and written permission of instructor. Credit 3 units.

A&S SS FA SSP

Econ 426. Economic Systems in Theory and Practice

Same as IAS 4261, Lw St 426, ISA 426.

Theory and practice of mercantilism, capitalism, and socialism. Historical and contemporary examples considered, with contemporary focus on Latin America, Eastern Europe, and Hong Kong. Primary emphasis on choices open to individuals; pecuniary and non-pecuniary prices paid to exercise those choices. Statistical evidence and case studies are used. Course requirements include weekly written critique. Prerequisite: Econ 401. Credit 3 units.

A&S SS FA SSP

Econ 428. Capital Market Imperfections and Entrepreneurial Finance

Analysis of problems in capital markets for firm financing and institutional structures that address these problems. Investigation of asymmetric information between firms and potential investors and associated moral hazard and adverse selection problems that raise the cost of funds and constrain firm growth. Empirical tests for the presence of financing constraints on firms. A substantial portion of the course explores the role of venture capital, especially in the high-tech sector of the United States economy where venture capital is important for commercializing cutting-edge science. Prerequisite: Econ 401. Credit 3 units.

A&S SS FA SSP

Econ 435. Open Economy Macroeconomics

Same as IAS 4352, Pol Econ 435.

This course begins with a review of international trade theory, of the balance of payment accounts and their relationship to international borrowing and lending. We then study the asset approach to exchange rates determination, exchange rate behavior in the short and in the long run, and the relationship of exchange rates with prices and output. The course also explores monetary and fiscal policy under both fixed and floating exchange rates, macroeconomic policy coordination and optimum currency areas, international debt problems of developing countries and their relation to stabilization program. Prerequisite: Econ 402. Credit 3 units.

A&S SS FA SSP

Econ 440. Economics of Social Policy

Same as STA 450, Econ 440, Econ 4401.

Economic analysis of employment and income problems of the poor; public policy responses. Topics: the distribution of income in the United States, economic and social causes of poverty, education and technical change. Prerequisites: Econ

103B and 104B, or permission of instructor.

Credit 3 units.

A&S SS FA SSP

Econ 445. Public Finance

The study of fundamental forms of market failure that provide the economic rationale for government action. The first third of the class examines market failure when an economy contains externalities and public goods and the general nature of public policies that address these issues. The second third addresses particular public policies, with a focus on their intended and unintended consequences and their costs. The final third addresses taxation. Topics include the measurement and evaluation of tax burdens, the federal personal income tax, tax evasion, and proposals for fundamental tax reform. We use a small amount of microeconomic theory and elementary calculus (all of which we review) to reveal the common core of ideas behind these discussions, but the focus of the course is on applications. Prerequisite: Econ 401. Credit 3 units.

A&S SS FA SSP

Econ 448W. Current Macroeconomic Issues

Same as AMCS 448W.

Review and extension of macroeconomic models from Econ 402 from a comparative perspective and use of these models to analyze current macroeconomic and policy issues. Topics include recession and recovery, long-term growth, saving and social security, investment, and monetary policy. Multiple writing assignments that emphasize critical analysis of theoretical perspectives and readings applied to current macroeconomic topics. Writing is revised to improve logical structure, clarity, and style. Enrollment limited to 15 students with priority given to senior economics majors. Prerequisite: Econ 402. Credit 3 units.

A&S SS WI FA SSP

Econ 451. Environmental Policy

Same as Econ 4511, AMCS 454, EnSt 451, Pol Econ 451, MEC 494.

Course examines the relationship between environmental economics and environmental policy. The course focuses on air pollution, water pollution, and hazardous wastes, with some attention given to biodiversity and global climate change. The course examines critically two prescriptions that economics usually endorses: (1) "balancing" of benefits against costs (e.g., benefit-cost analysis) and the use of risk analysis in evaluating policy alternatives; (2) use of market incentives (e.g., prices, taxes, or charges) or "property rights" instead of traditional command-and-control regulations to implement environmental policy. Prerequisite: Econ 103B. Credit 3 units.

A&S SS FA SSP

Econ 452. Industrial Organization

Same as ISA 452.

Theoretical and empirical analysis of the presence and value of competitive forces in the United States economy. Theories of industrial organization and development of criteria for performance of noncompetitive industries. Prerequisite: Econ 401. Credit 3 units.

A&S SS FA SSP

Econ 4541. Institutions of Production and Exchange

The characteristics of contracts, firms, and markets examined both theoretically and empirically. Examination of the role of explicit and implicit contracts in exchange. Prerequisites: Econ 401; Econ 413 recommended. Credit 3 units.

A&S SS FA SSP

Econ 4551. Seminar in Political Economy

Same as Pol Sci 4551.

A&S SS

Econ 456. Business, Government, and the Public

Same as MGT 4581, MGT 515, Pol Sci 458, Lw St 456, IAS 456, AMCS 4563.

The increasingly complex interrelationships among business, government, and the public, focused on a set of major problems currently involving these relationships. Prerequisites: Econ 103B, 104B, and junior standing. Credit 3 units.

A&S QA SS FA SSP

Econ 458. The Theory of Property Rights

Same as Lw St 458, ISA 458, Pol Econ 458.

Develops a theory of property rights and explores the implication of various property rights structures for resource allocation and economic development. Theory developed by Ronald Coase, Harold Demsetz, Armen Alchian, Steven Cheung and others are examined and various types of property rights discussed such as share-cropping, slavery, serfdom, as well as property rights in modern market and socialist economies. Prerequisite: Econ 401 or consent of instructor. Please Note: Requests for online registration will be wait listed. Students must sign up for this course in the Economics Office, Eliot 205. Credit 3 units.

A&S SS FA SSP

Econ 460. Urban Economics

Same as AMCS 460.

Economic function of the city and the role of the city in a national economy. Local decision making; financing of local government expenditures. An analysis of selected urban problems, such as causes and effects of housing market segregation; decay and abandonment, landlord-tenant relations, crime, and urban transport systems. Prerequisite: Econ 401. Credit 3 units.

A&S SS FA SSP

Econ 467. Game Theory

Same as IA 4670, Lw St 467, Pol Econ 467.

Introduction to the mathematical theory of games as applied to the study of economics. Topics include games of complete and incomplete information, non-cooperative games with and without time dependency, and cooperative games with and without transferable utilities. Emphasis placed on game theoretic models of industrial organization and political economy. Prerequisites: Econ 401, Math 132 and Math 320. Credit 3 units.

A&S SS FA SSP

Econ 471. Development Economics

Same as ISA 471.

Investigation of issues related to the development of the economies of third-world countries. Topics include economic growth, poverty, and the distribution of income with an emphasis on labor markets and education. Consideration of the effectiveness of various institutional policies designed to encourage development including decentralization and privatization. Empirical examples drawn from international experience, especially Latin America. Prerequisite: Econ 401. Credit 3 units.

A&S SS

Econ 475. International Trade

Same as IAS 4753.

Analysis of international trade from different perspectives: Ricardian, Heckscher-Ohlin, and new trade theories. Topics include patterns of trade, gains from trade, protectionism, international factor movements, political economy of trade policy, balance of payments, exchange-rate determination, and international investment. Rigorous application of price theory to trade issues and in-depth discussion of current international policy questions. Prerequisite: Econ 401. Credit 3 units.

A&S SS FA SSP

Econ 480. Labor Economics

Economic analysis of labor markets. Theory and evidence on supply of and demand for labor, explanation of wage and income differentials; impact of education on human skills and productivity.

Prerequisite: Econ 401. Credit 3 units.

A&S SS FA SSP

Econ 485. Labor-Management Relations in Modern Economies

Same as Lw St 485.

Analysis of some major and puzzling problems of modern industrial economies, in particular the United States economy, such as the growing earnings inequality, increased use of contingent workers and outsourcing, and the altered role of training. Further, presentation and critique of an alternative paradigm to conventional theories of firm behavior: the theory of the stakeholder corporation, which purports to explain labor-management relations and provide a normative basis for them; evidence from several countries and labor market structures are drawn upon. Prerequisites: Econ 104B and 401. Credit 3 units.

A&S SS FA SSP

Econ 4861. Seminar in Macro and Monetary Economics

Topics chosen by instructor from modern empirical and theoretical research papers in macroeconomics. Student participation in class discussions of research papers is essential. Topics vary, but may include the link between capital markets, consumption and investment, imperfect competition and macroeconomic fluctuations, real business cycles models, and post-Keynesian macroeconomics. Prerequisites: Econ 401, 402, 413, and permission of instructor. Credit 3 units.

A&S SS

Econ 487. Applied Financial Modeling

Topics in financial economics, including portfolio theory, the capital asset pricing model, the efficient markets hypothesis, and models of time-varying market volatility, with an emphasis on empirical applications of theoretical concepts using Microsoft Excel. Cultivation of practical programming skills is designed to complement application of economic theory to financial markets. Prerequisite: Econ 401. Credit 3 units.

A&S SS FA SSP

Econ 4871. Applied Financial Modeling

Topics in financial economics, including portfolio theory, the capital asset pricing model, the efficient markets hypothesis, and models of time-varying market volatility. Emphasis on empirical applications of theoretical concepts. Prerequisite: Econ 401. Credit 3 units.

A&S SS

Econ 4875. Financial Markets, Institutions, and the Regulatory Challenge

In-depth analysis of the operation of U.S. financial markets and the challenges faced by governments that regulate these markets. Emphasis on the role transaction costs, information problems, and rent-seeking behavior play in shaping the structure and evolution of financial markets and institutions. Specific applications to current policy debates, including U.S. vulnerability to financial crisis, deposit insurance reform, government-sponsored enterprises and systemic risk, racial discrimination in credit markets, and the potential role of market discipline in bank regulation. Prerequisite: Econ 402 or permission of instructor. Credit 3 units.

Econ 488. Seminar in Political Economy

Credit 3 units.

A&S SS FA SSP

Econ 490. Independent Work

Prerequisites: senior standing and permission of the chair of the department. Credit variable, maximum 6 units.

FA SSP

Econ 4901. Research Experience in Institutional Analysis

After completing two courses in the minor in Institutional Social Analysis, students may apply to participate in a research program with the participation of the faculty supervisor. Students are chosen on the basis of their academic record and the appropriateness of the research project. Up to 10 students are selected each year. Students are expected to devote at least 10 hours per week on research, and participate in a Research Experiences for Undergraduates conference to be held each semester. Prerequisites: approval of faculty adviser and coordinator of program. Credit 3 units.

Econ 496. Teaching Practicum in Economics

Opportunity for undergraduates to assist in course instruction, tutoring, and preparation of problems, readings, and exam materials under supervision of faculty. Credit variable; maximum 3 units. Note: This course does not count toward the major in economics. Credit variable, maximum 3 units.

A&S SS FA SSP

Econ 497. Research in Economics

Opportunity to work as part of a research project under faculty supervision. This course does not count toward the major in economics. Credit variable; maximum 3 units. May be repeated for credit.

A&S SS FA SSP

Econ 498. Honors Seminar

Advanced application of economic theory to policy problems. Prerequisite: invitation into departmental Honors Program. Credit 5 units.

A&S SS FA SSP

Econ 499. Study for Honors

Independent reading and research under faculty direction leading to a senior honors thesis. Prerequisites: invitation into the departmental Honors Program and permission of the director of Undergraduate Studies. Credit 5 units.

A&S SS FA SSP

Education

Chair

William F. Tate

Edward Mallinckrodt Distinguished
University Professor in Arts & Sciences
Ph.D., University of Maryland, College Park

Endowed Professor

James V. Wertsch

Marshall S. Snow Professor
in Arts & Sciences
Ph.D., University of Chicago

Professors

Jere Confrey

Ph.D., Cornell University

Carol Camp Yeakey

Ph.D., Northwestern University

Associate Professors

Thomas W. Allen

Ed.D., Harvard University

Garrett A. Duncan

Ph.D., The Claremont Graduate School

Mary Ann Dzuback

Ph.D., Columbia University

Margaret J. Finders

Ph.D., University of Iowa

R. Keith Sawyer

Ph.D., University of Chicago

Assistant Professors

Rowhea Elmesky

Ph.D., Florida State University

Rebecca Rogers

Ph.D., State University of New York–Albany

Senior Lecturers

Phyllis Balcerzak

Ph.D., Kent State University

Judy Lamb

M.A. Ed., Washington University

Madonna Riesenmy

Ph.D., Washington University

Affiliate Faculty

William W. Clark

Ph.D., University of Michigan

Karen Jeanne DeAngelis

Ph.D., Stanford University

Sarah C.R. Elgin

Ph.D., California Institute of Technology

Patrick C. Gibbons

Ph.D., Harvard

Robert H. Koff

Ph.D., University of Chicago

Mark A. McDaniel

Ph.D., University of Colorado

Rebecca Treiman

Ph.D., University of Pennsylvania

The Department of Education offers you a choice between two basic types of majors: the teacher education major, which allows you to prepare for a career as a teacher, and the educational studies major, which allows

you to study educational institutions and their sociocultural contexts and processes.

Our teacher education programs prepare you to teach in your choice of elementary, middle, or senior high school settings. While this major prepares you for a teaching career, you also will be prepared to seek a position in a cultural institution or educational agency.

Our teacher education majors provide you with course work in the psychological bases of learning and teaching; the social and historical background of school systems; and teaching methodology, which includes student teaching. Student teaching is done during your senior year as part of an integrated professional semester of interrelated courses and teaching experiences in a local school. You also will have other opportunities to participate in field experiences because school visits and observations are included in many additional teacher education courses.

Our major in educational studies examines the historical, social, cultural, psychological, and public policy aspects of education. As an educational studies major, you may choose to observe in schools, to engage in internships, or to work with faculty members on their research. Many educational studies majors pursue graduate or professional study; however, this major also prepares you to work in educational, nonprofit, or government agencies.

Senior Honors: If you wish to pursue Honors study, you need to contact the departmental Honors Coordinator about eligibility. Qualifications for eligibility include a minimum 3.5 grade point average and completion of some education course work. Honors involves both demonstration of acquired knowledge and a thesis based on an original research project. You may contact a faculty Honors adviser as early as the sophomore year, but ideally this is done during the junior year.

Title II: Section 207 of Title II of the Higher Education Act mandates that Washington University's teacher education programs (or DOE) make public specific teacher education performance data. That information can be found on the Department of Education Web site at www.artsci.wustl.edu/~educ/titleII.html.

You should seek admission to a teacher preparation program early in your sophomore year. To be eligible you must pass an entrance examination mandated by Missouri and have at least a 2.8 grade point average. In addition, you should consult with an education department adviser as early as possible to ensure that you fulfill College of Arts & Sciences, departmental, and professional requirements for certification. Upon completion of your program, a satisfactory records check, and the recommendation of the Washington University Department of Education, the Missouri Department of Elementary and Secondary Education issues you a teaching certificate if you have passed the relevant parts of the PRAXIS teaching exit test and have an overall grade point average of at least 2.5 and no grade lower than C in re-

quired field or education course work. Additional grade point average requirements exist for secondary majors and the middle school teacher education option. The following teacher education majors are available:

Elementary Teacher Education Major:

This major prepares you to teach grades 1 through 6 and may be completed within a four-year undergraduate degree. You are required to complete a second major other than education and complete 49 units of credit as follows: 3 credits in educational foundations; Math 266, and Educ 313B, 4052, 408, 4271, 4681, 470, 4731, 4741, 4751, 4771, 4831, 4841, 4911, and 525. During the spring of the junior year, you must enroll in the methods block, which includes 4271, 4731, 4741, 4751, 4771, 4841, and 525. Elementary student teaching (Educ 4911) occurs during the fall of your senior year, during which you concurrently enroll in Educ 470 and 4831.

Secondary Teacher Education Major:

This major prepares you to teach in a senior high school, grades 9 through 12. You are required to complete a major in a teaching field, such as English, mathematics, sciences, or social studies and to maintain a 3.0 grade point average in that content major.

K–12 Teacher Education Major: This major prepares you to teach K–12 in the areas of art, foreign languages, and Latin. In addition, you are required to take the following 30 units in education: 3 credits of educational foundations, Educ 4052, 408, 4699, 4821, your content area's curriculum and instruction course, Educ 492/494, and 5681. This course work includes a semester of student teaching (Educ 492/494) during the spring of your senior year during which you concurrently enroll in Educ 4821.

Middle School Teacher Education Option:

This option prepares you to teach in middle school grades 5 through 9. You must major in a subject field taught at the middle school level (English, science, mathematics, or social studies) and maintain a 3.0 grade point average in that content field. In addition, you are required to take the following 38 units in education: 3 credits of educational foundations, Educ 4052, 408, 4699, 4821, your content area's curriculum and instruction course, Educ 4922, 4951, 4952, 525, and 5681. This course work includes a semester of student teaching during your senior year. The middle school teacher education option may be done in conjunction with the secondary major (all requirements for both must be met including student teaching at both levels). Students who choose to do middle school student-teach in the spring of their senior year. Some education course work will be taken concurrently with student teaching but that course work will vary depending upon the option selected. Please consult adviser.

Educational Studies Major: This major applies the perspectives and methods of various disciplines to questions about educational institutions and processes and the social and cultural factors that affect them. You are required to complete 24 units of advanced study as follows: three courses se-

lected from Educ 304, 4344, 453B, 459F, 462, and 481; one or two courses selected from Educ 300, 337, 4052, 408, 4484, 461BP, and 5122; one or two courses selected from Educ 300, 301C, 303R, 313B, 4288, 4315, 4511P, 4608P, 4621, 489, 557; one elective; and in the senior year either 404 (Honors) or 4999 (Capstone Seminar). Educational studies majors are strongly urged to choose a second major. To minor in educational studies, you must complete 15 units of advanced study, including Educ 301C, 313B, and 12 units from a selected list of courses.

Undergraduate Courses

Educ 200. Topics in Education

Introduction to broad areas of educational concern. Topics vary by semester. Credit 3 units.
A&S SS FA SSP

Educ 210. The Linguistic Legacy of the African Slave Trade in Interdisciplinary Perspective

Same as AFAS 210.

A&S SD SS

Educ 234. Introduction to Speech and Hearing Disorders

Same as PACS 234, Sphr 234, Ling 234, Psych 234.

Introduction to the fields of speech-language pathology, audiology, education of hearing-impaired children, and speech and hearing sciences. Normal speech and hearing processes are discussed, as well as communication disorders. Selected research topics in speech and hearing sciences are presented. Credit 3 units.
A&S SS

Educ 300. Topics in Education

An examination and appraisal of major educational issues, drawing on normative frameworks, empirical research, and analytical literature. Seminar format. Topics vary by semester. Prerequisite: sophomore standing. Credit 3 units.
A&S SS FA SSP

Educ 301C. The American School

Same as Educ 4301, Educ 301C, AMCS 301C, STA 331C, History 382C.

An analysis of the development of American schooling within the context of American social history. Focus on three general themes: differing conceptions of schooling held by leading American educational thinkers, changing relationships among schools and such other educational institutions as the church and the family, policy issues that have shaped the development of schooling in America. Prerequisite: sophomore standing. Credit 3 units.

A&S SD TH FA SSP

Educ 303. Gender and Education

Same as WGS 303, STA 3031, AMCS 3031.

An examination, through the lens of gender, of educational practices at the preprimary, primary, secondary, and higher education levels. A sociological and historical approach links gender discrimination in education to other forms of discrimination as well as social forces. Students' own gender-related educational experiences are analyzed in the context of the literature used in the course. Prerequisite: sophomore standing, or permission of instructor. Credit 3 units.
A&S SD SS FA SSP

Educ 304. Educational Psychology

Same as Psych 304.

A course in psychological concepts relevant to education. Organized around four basic issues: how humans think and learn; how children, adolescents, and adults differ in their cognitive and moral development; the sense in which motivation

and intention explain why people act as they do; how such key human characteristics as intelligence, motivation, and academic achievement can be measured. Prerequisite: sophomore standing. Offered fall and spring semester. Credit 3 units.

A&S SS FA SSP

Educ 305. Collective and Individual Memory

Same as STA 3051.

A&S SS FA SSP

Educ 306. Literacy Education in the Context of Human Rights and Global Justice

Same as Pol Sci 3060, Ling 3061, STA 306, AFAS 3061, AMCS 3061.

Literacy is a fundamental human right. In this course, we explore the current and historical relationships between literacy and human rights. This includes an analysis of the ways in which literacy education is fundamentally linked to issues of global justice including political engagement and voting rights, environmental sustainability, gender and racial equality, and participation in the globalized economy. We investigate how literacy education has played a role in social struggles at local, national, and international levels such as the creation of the Freedom Schools in St. Louis, the Native American boarding school movement, the Civil Rights movement in the United States including the creation of the Citizenship schools, the Ebonics debate in Oakland, California, the Nicaraguan Literacy Campaign, and the current No Child Left Behind federal educational policy. Students explore how literacy education has been used, in each of these cases, as a tool of empowerment and a tool of oppression. Credit 3 units.
A&S SS

Educ 313B. Education, Childhood, and Society

An examination of childhood, child development, and education from different perspectives. Observation of children in a variety of settings, including classrooms. Through historical, sociological, psychological and political readings, students will clarify current ideas about children, investigate the nature of childhood, and begin to understand how and why childhood is constructed as it is. Prerequisite: sophomore standing. Limited to 45 students. Credit 3 units.
A&S SS FA SSP

Educ 314. Sociolinguistics, Literacies, and Communities

Same as Ling 314, PNP 314, STA 3141.

The well-known "literacy crisis" has forced scholars from many nations to turn their attention to learning about linguistic, cultural and class diversity of students and what this means for learning in schools. In this course we engage with the perceived disjuncture between homes, communities, and schools in an era of higher literacy standards, local literacies, and community knowledge. We examine the contribution of sociolinguistics to what we know about language and literacy education, achievement, and how this relates to social transformation within and across communities. Students can expect theoretical and methodological conversations as we use critical discourse theories, systemic linguistic approaches, and empowerment theories as lenses to formulate, challenge and critique the existing status of language and literacy education. Credit 3 units.
A&S LA

Educ 325. Psychology of Adolescence

Same as Psych 325.

A&S SS FA SSP

Educ 337. Play and Development

Same as Psych 323.

An examination of current research and theory in play, in development and education, from infancy through the early school years. Topics include play and the development of language, social skills, creativity, and cognitive abilities. We also

examine the uses of play in educational contexts, focusing on preschool and the early primary grades. Prerequisite: Psych 321 (Developmental Psychology) or Educ 304 (Educational Psychology). Credit 3 units.

A&S SS

Educ 338. Computer Technology in Education

Technology has become increasingly important in education in the last 10 years. Many exciting new software applications have been developed by scholars in the learning sciences, an interdisciplinary field based in cognitive psychology. Many of these systems draw on the power of the Internet to support online student collaboration in inquiry-based and project-based learning. This course will introduce students to computer technology in education. No prior knowledge of computer programming or software design is required. A major goal of the course is to teach students the basic concepts behind computer programming and design. Toward this end, a significant portion of the course involves laboratory work where students will be solving programming assignments. This basic knowledge will allow students to acquire a deeper understanding of the different possible approaches to developing computer applications that are based on learning sciences research. This course requires a special classroom in which each student has his or her own computer during the class. Enrollment is limited to the number of students that can be supported by this classroom. Credit 3 units.
A&S SS

Educ 343. Text, Memory, and Identity

Same as IAS 343.

A&S TH

Educ 358. Language Acquisition

Same as Psych 358.

A&S SS FA SSP

Educ 366. Psychology of Creativity

Same as Psych 366.

This course is an introduction to the psychological study of art and creativity. Our topics include the artist, the audience, the artistic product, the creative process, and social, cultural, and institutional influences on the creative process. We explore these issues by considering a range of creative fields, including painting, literature, music, and theater performance. Throughout the semester, we take a developmental perspective on psychology and art. How do children learn to create, perceive, and understand different art forms? What role can the arts play in education? To ground our study of the psychology of art, we will explore what "art" is, which members of society are labeled "artists," and how these categories are socially and culturally defined. Prerequisites: Ed 304, Educational Psychology or Psych 325, Adolescent Psychology or Psych 321, Developmental Psychology. Credit 3 units.

A&S SS FA SSP

Educ 400. Topics in Education

An analysis of major educational issues, drawing on empirical research and literature. Seminar format. Topics vary by semester. Credit 3 units.

A&S SS FA SSP

Educ 4011. Independent Study: Observation in the Schools

Credit variable, maximum 3 units.

Educ 4033. Video Microanalysis: Methods and Tools

The purpose of this course is to explore video microanalysis as a methodological tool for studying and valuing unconscious aspects of culturally diverse settings. Utilizing social, cultural, and theoretical lens, this type of analysis will reveal fleeting actions, subtle movements, peripheral events, and non-verbal communication that are not easily identified in real-time viewing. Specifically we

may look at facial expressions, direction of gaze, hand movements, body position, and use of material resources as micro techniques to expand our capacity to explore minute aspects and alternative interpretations of social interactions. Credit 3 units.
A&S SD SS

Educ 404. Study for Honors

A research program arranged by the student and a faculty member. Prerequisite: recommendation for Honors study. Credit 3 units.
A&S SS FA SSP

Educ 4052. Educational Psychology: A Focus on Teaching and Learning

Same as Educ 4052.

The classroom as a physical, social, and intellectual environment. Selected psychological concepts and theories are applied to processes and practices of teaching and learning through readings, discussions, and participation/observation in preschools and elementary and secondary schools. A systematic, firsthand look at schooling in America both for prospective teachers and those interested in furthering their understanding of fundamental principles of teaching and learning. Prerequisite: sophomore standing. Must enroll in fieldwork laboratory (5 hours per week) Credit 4 units.
A&S SS FA SSP

Educ 4055. Central Topics in Learning Sciences Research

The learning sciences are a group of disciplinary approaches to the study of learning, including cognitive science, education, psychology, anthropology, and sociology. The core of the approach is based in the study of cognition and its relationship to the disciplines of science, mathematics, and literacy. Technology has become increasingly important in the last 10 years, as computer-supported collaborative learning (CSCL) software has grown in sophistication and effectiveness. The learning sciences have contributed interesting new methodologies for studying and documenting how learning occurs in real-world settings. In this course, we review the broad range of research currently taking place in the learning sciences, including methodologies for studying learning, computer software that supports both solitary and collaborative learning, the impact of new technologies on educational practice, and how learning sciences research impacts teacher professional development and schoolwide reform. Students acquire the ability to think creatively and critically about the learning sciences and to critically evaluate the strengths and weaknesses of specific classroom approaches and software applications. Credit 3 units.
A&S SS

Educ 407. Curriculum and Instruction in Modern Foreign Languages

Same as Educ 407, Span 413.

Modern foreign language curriculum in the secondary schools, with emphasis on the selection, organization, and appraisal of materials. Analysis of methods of instruction and evaluation in teaching modern foreign languages. Prerequisite: admission to teacher education program. Secondary teacher education majors are required to take 3 credit hours during the Fall semester in which student teaching is done. Credit 3 units.
A&S LA FA SSP

Educ 408. Education and Psychology of Exceptional Children

Same as Educ 408.

Major handicaps of children that require educational modifications. The nature of the handicaps, their known causes, and educational provisions for exceptional children, ranging from special schools to "mainstreaming" children into regular classrooms. The nature of giftedness, together with

current practices of educating gifted children and youth. Required in teacher certification program. Prerequisite: sophomore standing. Offered Fall and Spring semesters. Credit 3 units.
A&S SS FA SSP

Educ 413. Curriculum and Instruction in Art K-12

Art curriculum in the public schools, with emphasis on examination of methods and materials for teaching art. Prerequisite: admission to teacher education program. Secondary teacher education majors are required to take 3 credit hours during the year in which student teaching is done. Offered Fall semester. Credit 3 units.
A&S LA FA SSP

Educ 414. Curriculum and Instruction in English

Same as Educ 414.

English curriculum in the secondary school; emphasis on the selection and organization of materials. Analysis of methods of instruction and evaluation in teaching literature and language. Prerequisite: admission to teacher education program. Secondary teacher education majors are required to take 3 credit hours during the year in which student teaching is done. Offered Fall semester. Credit 3 units.
A&S LA FA SSP

Educ 415. Curriculum and Instruction in Science

Same as Educ 415.

Secondary school science curriculum and instructional methods, including evaluation of curricular materials and student performance based on specific teaching objectives. Prerequisite: admission to teacher education program. Secondary teacher education majors are required to take 3 credit hours during the Fall semester during the year in which student teaching is done. Offered Fall semester. Credit 3 units.
A&S NS FA SSP

Educ 417. Curriculum and Instruction in Mathematics

Same as Educ 417.

Mathematics curriculum in the secondary school, with emphasis on modern developments in organization of mathematics. Analysis of methods of instruction and evaluation in teaching mathematics. Prerequisite: admission to teacher education program. Secondary teacher education majors are required to take 3 credit hours during the Fall semester during the year in which student teaching is done. Credit 3 units.
A&S NS FA SSP

Educ 418. Curriculum and Instruction in Social Studies

Same as Educ 418.

Goals of general education in social studies and their relationship to the nature of knowledge in the social sciences. Introduction to the nature of thinking and its relationship to pedagogy and teaching materials. Prerequisite: admission to teacher education program. Secondary teacher education majors are required to take 3 credit hours during the year in which student teaching is done. Credit 3 units.
A&S SS FA SSP

Educ 4210. Developing Community-Based Documentaries: Video Inquiry for Educators

Same as Educ 4210.

Educ 4271. Health of the Child

A study of the health and nutrition of children. Prerequisites: admission to the teacher education program or permission of director of Teacher Education. Credit 1 unit.
A&S SS FA SSP

Educ 428. History of Education in the United States

Credit 3 units.

A&S SS

Educ 4280. History of Urban Schooling in the United States

Same as History 4280, AMCS 4280, URST 4280.

This reading colloquium examines the history of urban schooling and school policy in the United States. Readings focus on the growing literature in the history of urban schooling and on primary source material. We explore urban schooling in general and we examine particular primary source material as well as particular cities and their school districts. Such districts may include New York, Boston, Chicago, Detroit, St. Louis, Los Angeles, San Francisco, Atlanta, and others. The course has two goals: to develop a strong contextual understanding of the conditions of urban schooling, the history of urban school reform, and the debates over the purposes of urban schools and to examine the ways historians have explored urban schooling in the U.S. Students should expect to read a book a week as well as primary source materials and occasional articles. Credit 3 units.
A&S TH

Educ 4288. Higher Education in American Culture

Same as History 4288, AMCS 4288.

Colleges and universities in the United States have been the sites of both cultural conservation and political and cultural subversion from their founding in the 17th and 18th centuries. They have been integral to the nation's and regional cultural and economic development. In addition, they have functioned as one component of an increasingly diversified and complex system of education. This course, a reading colloquium, surveys higher education in American history, including the ideas that have contributed to shaping that history, beginning with its origins in European institutional models. We use primary and secondary readings to examine critically its conflict-ridden institutional transformation from exclusively serving the elite to increasingly serving the masses. We explore the cultural sources of ideas as well as the growth and diversification of institutions, generations of students and faculty as they changed over time, and curricular evolutions and revolutions in relation to the larger social and cultural contexts of institutional expansion. Credit 3 units.
A&S TH FA SSP

Educ 4289. Neighborhoods, Schools, and Social Inequality

Same as AMCS 4289, URST 4289.

A major purpose of the course is to study the research and policy literature related to neighborhoods, schools and the corresponding opportunity structure in urban America. The course will be informed by theoretical models drawn from economics, political science, sociology, anthropology, education, and law. A major focus is to gain greater understanding of the experiences and opportunity structure(s) of urban dwellers, in general, and urban youth, in particular. While major emphasis will be placed on data derived from the interface of urban environments and the corresponding institutions within them, the generational experiences of various ethnic groups will complement the course foci. Credit 3 units.
A&S SS

Educ 4301. Historical Social Content of the American School

Same as Educ 301C.

The American School. Additional discussion, writing, and research will be expected for graduate credit. Credit 3 units.
A&S TH FA SSP

Educ 4312. Tools of Inquiry*Same as Educ 4312.*

This course offers an introduction to teacher inquiry and provides a foundation of skills, knowledge, and performances that effective teachers use to monitor and improve practice. In this course, teachers are actively involved in their own teaching and learning with an emphasis on the following: Reflective practice: Reflective practitioners continually evaluate the effects of their choices and actions on others (e.g., students, parents, and other professionals in the learning community) and actively seek out opportunities to improve practice and grow professionally. Use of technology: Teacher leaders model the use of media and technology as tools of inquiry. This course supports teachers to do the following: Use multiple sources of data to assess the growth of individual learners; use assessment data to adjust curriculum and instruction to student needs; investigate their own biases, assumptions, and ideologies and monitor the effects on student learning; conduct research in the classroom to assist them in improving their practice; use portfolios and other reflective practices to document and monitor their professional development. Offered Spring semester. Credit 3 units.

A&S SS**Educ 4315. Culture, Language, and the Education of Black Students***Same as Ling 4315, PNP 4315, AFAS 433, AMCS 4315, AFAS 433, AMCS 4315, URST 4315.*

This course examines the communicative patterns of what is called variously African-American language, Pan-African linguistic systems, and Ebonics within the context of public school policy and practice. In addition to a review of the structural and pragmatic aspects of Black speech, the course highlights relationships between controversies within the linguistic community, contrasting views of speech within Black lay communities, public discourse, and educational policy. Students also conduct a field-based research project in accord with their particular interests. Credit 3 units.

A&S CD SS FA SSP**Educ 4344. Seminar in Black Social Sciences***Same as AFAS 434B.***A&S CD SS FA SSP****Educ 434B. Seminar in Black Social Sciences***Same as AFAS 434B.***A&S SD SS FA SSP****Educ 4351. Reading and Reading Development***Same as Psych 4351.***A&S SS****Educ 440. Women in the History of Higher Education and the Professions***Same as AMCS 4908, WGS 440, History 4920.*

An advanced seminar with readings exploring education, historical studies, and feminist theory. Each student writes a paper, based on research in local archives and in other primary sources, on a topic related to women in higher education and/or professions. Prerequisite: junior standing or above; some background in American history. Credit 3 units.

A&S SD TH FA SSP**Educ 4411. Social Statistics***Same as STA 441.***A&S SS FA SSP****Educ 4412. Social Statistics Practicum***Same as STA 442.***A&S SS FA SSP****Educ 4413. Project Design for Math and Science Education**

A course for those students who have an interest in teaching or educational design: This graduate/advanced-undergraduate course focuses on the design and construction of educational

projects for schoolchildren in the middle- and high-school levels of mathematics and science. Students in the course, in small group collaborations, will conduct an entire cycle of design, implementation, and evaluation of a small math or science project (or both) for local middle or high school students. Projects will be aligned with state and national standards, so they could be used in Missouri public schools. Creativity is encouraged! The class includes four phases of work throughout the semester: 1) Ongoing reading and discussion of the national and state standards for math and science instruction, and of research literature on inquiry in science and math education; 2) design of project activities, materials, and assessments, including specification of content, pedagogical, and technology goals, and alignment with standards; 3) conduct of the teaching projects at selected sites with middle-school or high-school students; 4) evaluation of projects in a final presentation and report. Students in science, mathematics, psychology, and education, with interests in teaching, educational research, or educational outreach, are encouraged to attend. Credit 3 units.

A&S SS**Educ 4414. Learning Technologies for Math and Science***Same as Educ 4414.*

What does the integration of electronic technology into classrooms, projects, and informal settings mean for the development of our students' understanding of mathematics and science? What implications does it have for our own content understanding, and for how we lead our students in the classroom? Can we really integrate information technology into the classroom in ways that truly enhance student inquiry and reasoning? This course focuses on the function, design, use, and effectiveness of electronic technology in mathematics and science education, and, in particular, how it interacts with content and classroom practice. A primary perspective in the course will be the ways in which electronic tools can be used to promote understanding and interpretation of data and quantitative thinking as springboards to inquiry, modeling, and the doing of "authentic science." Participants learn several software applications and computer-based curricula, and read current research on the implications for the learning sciences of technology and modeling in science and math. Content emphasis is from middle- and high-school science and mathematics, and accessible to all teachers of science and math. In-service teachers, graduate students, and advanced undergraduates in education, mathematics, science, and psychology are invited. Credit 3 units.

A&S SS**Educ 4415. Learning Sciences in Math and Science**

This course introduces the concepts of the learning sciences as related to mathematics, science, and technology education. The focus of the course is on how students learn fundamental concepts selected each semester from topics such as number, space, shape, data, operations, functions, rate, balance, density, etc. and how their ideas evolve and develop over time. The inventiveness of children's thinking and the sophistication of their interactions are shown as rich resources, often underutilized in typical classroom instruction. The developmental and epistemological theories of scholars such as Jean Piaget and the von Hieleles are contrasted with sociocultural and linguistic approaches such as of Lev Vygotsky and Sylvia Scribner and Michael Cole, and the pragmatic theories of John Dewey. Topics include studies of error patterns, misconceptions, alternative conceptions in mathematics and science and how these relate to outside experience, student interactions and discourse patterns using excerpts from real classrooms. Students are expected to read original works, learn to

analyze video interviews from each perspective, and to read and summarize existing literature on children's reasoning for specific topics. The course is targeted towards upper division undergraduates, master's and doctoral students in education, psychology and/or mathematics and science, and adjusted to meet these various levels of preparation. Credit 3 units.

A&S SS**Educ 4451. Teaching Writing in School Settings***Same as Educ 4451.*

Writing teachers often know how to write well but less about the teaching of writing. To provide effective instruction in writing, teachers need, first of all, experiences with writing instruction and theoretical knowledge to guide classroom practices. The goals of this course are: to provide opportunities for all teachers of English and language arts, to develop theoretical knowledge and skill as teachers of writing, to connect the practices of research and teaching, to encourage teachers to give their students multiple and varied experiences with writing, to assist teachers in learning to respond to students' writing and assess their progress as writers. Offered Spring semester. Credit 3 units.

A&S SS**Educ 4482. Current Issues in Social Theory***Same as STA 401.***A&S SS FA SSP****Educ 4511. Race, Ethnicity, and Culture:****Qualitative Inquiry in Urban Education***Same as AFAS 4511, URST 4511.***A&S SD SS****Educ 4512. Race, Ethnicity, and Culture:****Qualitative Inquiries into Urban Education II***Same as AFAS 4512.*

This course is the second of two to examine ethnographic research at the intersecting and overlapping points of race, ethnicity, class, gender, and culture. The emphasis in this course is on developing methodology that is consistent with critically grounded, socially responsible, culturally responsive, and humane research projects and programs. Secondary English education majors are required to take Fall semester during the year in which student teaching is done. Prerequisite: AFAS/Educ 4511 and/or permission of the instructor. Credit 3 units.

A&S SS WI FA SSP**Educ 453B. Sociology of Education***Same as Sociol 453, Sociol 453B, AMCS 453, STA 412, Educ 453B, AMCS 453, STA 412B.*

How does society shape schools and schools shape society? An examination of cultural, political, and economic factors and their relationship to the structure of our educational institutions; how control is exercised in classrooms; how knowledge and learning are defined, and basic values about equality, gender, and social justice are shaped by teachers' educational decisions. Students analyze their own schooling experience, visit at least two schools, interview teachers and students, and consider what changes are needed to make schools more responsive to students and communities. Prerequisite: Sophomore standing. Credit 3 units.

A&S SD SS FA SSP**Educ 459F. Philosophies of Education***Same as AMCS 4591, Educ 459, AMCS 459.*

An examination of distinct educational philosophies (traditional, progressive, and radical) and an analysis of perennial topics in the philosophy of education (educational goals, the teacher's and student's roles, and curricular content). Discussion of such recent themes as gender relations and education, democracy and education, and moral values and education. Seminar format. Credit 3 units.

A&S TH FA SSP

Educ 4608. The Education of Black Children and Youth in the United States

Same as AMCS 4608, AFAS 4608, STA 4608, Educ 4608, AMCS 4608, AFAS 4608, STA 4608, URST 4608.

This course provides an overview of the education of Black children and youth in the United States. Covering both pre- and post-Brown eras, this course applies a deep reading to the classic works of DuBois and Anderson as well as the more recent works of Kozol, Delpit, and Foster. The social, political, and historical contexts of education, as essential aspects of American and African-American culture and life, are placed in the foreground of course inquiries. Credit 3 units.

A&S SD TH WI FA SSP

Educ 461. Introduction to Educational Tests and Measurements

Same as Educ 4610.

Basic concepts of tests and measurements for teachers (and other school personnel). Topics: test reliability and validity; fundamentals of test construction and standardization; analysis of major types of group tests used in schools, including achievement and aptitude tests; meaning and interpretation of test scores; development of school testing programs. Teacher-made tests a central concern. Prerequisite: Educ 4052 or the equivalent. Credit 3 units.

A&S SS

Educ 4611. Psychological Tests and Measurements

Same as Psych 4611.

A&S SS FA SSP

Educ 461B. The Construction and Experience of Black Adolescence

Same as AFAS 461B.

A&S SS FA SSP

Educ 462. Politics of Education

Same as AMCS 4620, AMCS 462, URST 462.

Politics is interpreted broadly to include not just government, but any situation in which people have to solve a problem or come to a decision. This course focuses on schools and the processes through which certain stories, identities, and practices are promoted, and others, not. Credit 3 units.

A&S SS FA SSP

Educ 4621. The Political Economy of Urban Education

Same as AMCS 4621, URST 4261.

Defining a political economy of urban education involves the examination of power and wealth and the manner in which they operate in urban settings. It requires analysis of the larger urban social and economic context and consideration of historical forces that have brought the schools to their present state. In this course, we consider various political and economic factors that have influenced and shaped urban education in the United States, drawing upon the extant literature on urban education and related social science disciplines to characterize and discuss them. A particular focus of this course will be on the dynamic interrelationships among the political economy, urban education, and social stratification. Credit 3 units.

A&S CD SS

Educ 463. Economics of Education

How does society shape schools and schools shape society? An examination of cultural, political, and economic factors and their relationship to the structure of our educational institutions; how control is exercised in classrooms; how knowledge and learning are defined, and basic values about equality, gender, and social justice, shaped by teachers' educational decisions. Students analyze their own schooling experience, visit at least two schools, interview teachers and students, and consider what changes are needed to make schools

more responsive to students and communities.

Prerequisite: Minimum sophomore standing.

Credit 3 units.

A&S SS

Educ 4681. Teaching Reading in the Elementary School

Same as Educ 4681.

This course, emphasizing emergent literacy and children's literature, is the first in a sequence of three courses on teaching reading and writing. The purposes of this course are to survey children's acquisition of oral and written language from an emergent literacy perspective, to focus on methods of teaching beginning reading, to develop uses of children's literature in a reading program. Offered Fall semester. Credit 3 units.

A&S LA FA SSP

Educ 4699. Adolescent Psychology in School Settings

An examination of current research on adolescent psychological development and the adolescent experience across different cultures. Emphasis is on the application of theories of adolescence to the classroom setting to those settings outside the classroom that can affect how students learn. Students are given a repertoire of pedagogical and communication strategies for effectively teaching adolescents as well as opportunities to implement and analyze them in the classroom and school. Credit 3 units.

A&S SS FA SSP

Educ 470. Language, Learning, and Instruction

Same as Ling 470.

This course, which emphasizes children's writing and literacy issues, is the third of three courses in a sequence on teaching reading and writing. The course reviews and elaborates on work from previous courses on children's acquisition of written language, examines approaches to teaching writing, and focuses on work from sociological, feminist, and philosophical perspectives to affirm and criticize aspects of these approaches. Prerequisites: Educ 4681 and 525. Credit 3 units.

A&S LA FA SSP

Educ 4731. Elementary School Mathematics

Same as Educ 4731.

Fundamental concepts, properties, operations, and application of mathematics related to the systems of whole numbers, integers, rational numbers, and real numbers. Also included are measurement, simple geometry, probability, and logical reasoning. Examination and implementation of varied curricula and teaching strategies. Admission to Elementary Education program or permission of director of Teacher Education. Offered Spring semester. Credit 3 units.

A&S NS FA SSP

Educ 4741. Elementary Science: Content, Curriculum, and Instruction

Same as Educ 4741.

Focus on key concepts appropriate for elementary school science and health instruction. Repertoire of effective teaching strategies and approaches to curriculum development. Prerequisite: admission to teacher education program. Offered Spring semester. Credit 2 units.

A&S NS FA SSP

Educ 4751. Elementary Social Studies: Content, Curriculum, and Instruction

Same as Educ 4751.

Introduction to key concepts in social studies, including economics and geography. Repertoire of effective teaching strategies and approaches to curriculum development in all areas of social studies. Prerequisite: admission to teacher education program. Credit 2 units.

A&S SS FA SSP

Educ 4771. Arts and Aesthetics: A Means of Communication

Methods and materials for integrating the arts and aesthetics into the elementary classroom. Emphasis on art, music, and oral communication as well as curricula in movement. Prerequisite: admission to teacher education program, or permission of instructor. Credit 3 units.

A&S LA FA SSP

Educ 481. History of Education in the United States

Same as AMCS 481, Educ 481, AMCS 481, History 481.

Examines education within the context of American social and intellectual history. Using a broad conception of education in the United States and a variety of readings in American culture and social history, the course focuses on such themes as the variety of institutions involved with education, including family, church, community, work place, and cultural agency; the ways relationships among those institutions have changed over time; the means individuals have used to acquire an education; and the values, ideas, and practices that have shaped American educational policy in different periods of our history. Credit 3 units.

A&S TH FA SSP

Educ 4821. The Teaching-Learning Process in the Secondary School

Same as Educ 4821.

The Teaching-Learning course Secondary teacher education majors are required to take during the Spring semester in which student teaching is done. The course focuses on the study, practice and analysis of generic teaching strategies and skills needed to meet the needs of all students. Topics include classroom management, lesson planning, instructional and ethical decision-making and strategies for presenting clear explanations, asking effective questions, conducting productive discussions, reaching students with different learning styles/abilities/cultural backgrounds, and using cooperative learning groups. Secondary teacher education majors are required to take 3 credit hours during the year when student teaching is done. Credit 3 units.

A&S SS WI FA SSP

Educ 4831. The Teaching-Learning Process in the Elementary School

Focus on four broad areas: self-awareness and human relations, generic teaching and behavioral management strategies, analysis of instruction, social and political issues affecting the classroom. Topics include teacher-pupil relationships, evaluation of pupil progress, curriculum development, instructional technology, and school organization. Admission to Elementary teacher education program required. Elementary teacher education majors are required to take this course in the fall semester during the semester in which student teaching is done. Credit 3 units.

A&S SS WI FA SSP

Educ 4841. Elementary Methods Field Experience

Same as Educ 4841.

Application and analysis of specific content area methods strategies in an elementary school classroom. Prerequisite: Admission to teacher education program. Elementary teacher education majors are required to take this course during the spring semester before the year in which student teaching is done. Offered spring semester. Credit 2 units.

A&S SS FA SSP

Educ 4843. Field Experience Seminar

Same as Educ 4843.

This course guides students through a field experience in middle or secondary public school. Students observe and document classroom environ-

ment characteristics, professional teacher behaviors, and student behaviors; work with students individually and/or in small groups; prepare and teach a lesson. Credit variable, maximum 3 units.

A&S SS

Educ 489. Education and Public Policy in the United States

Same as STA 489, AMCS 489.

Critical examination of current public policy issues that shape education in a variety of institutions. Theoretical approaches to educational policy making; the significance of values, social goals, and knowledge in framing, implementing, and evaluating educational policy; relations among educational institutions affected by policy issues. Lectures, class discussions, and papers address literature on the problems of policy making and implementation, family policy, school policy, education and work policy, and cultural policy. Prerequisite: junior standing. Credit 3 units.

A&S SS FA SSP

Educ 4891. The Science and Politics of Testing in the United States

Same as Educ 4890, AMCS 4891, URST 4891.

Why do tests permeate American Society? Tests have been integral to the decision-making process in many venues of American culture, e.g., immigration opportunities, voting rights, college admissions, workforce considerations, special education placement, educational reform, and graduation requirements. The credibility of these decisions depends upon the claim that a particular test is a scientific instrument and relevant to the decision-making process. This claim is worthy of study. The purpose of this course is twofold. The first purpose is to examine how the nexus of science and politics influence testing practices in American society. The second purpose is to explore how testing practices influence the culture of schools, civil liberties, the work place, and public discourse about merit. Credit 3 units.

A&S SD SS

Educ 4911. Student Teaching in the Elementary School

Supervised teaching experience. Group meetings and individual conferences. Emphasis on integration of theory/practice and reflection on teaching through videotape analysis. Prerequisites: admission to elementary teacher education program and permission of director of teacher education. Credit/No Credit only. Elementary teacher education students enroll for 8 credits during the fall semester. Credit variable, maximum 8 units.

A&S SS FA SSP

Educ 492. Student Teaching in the Secondary School

Supervised teaching experience. Group meetings and individual conferences. Emphasis on integration of theory/practice and reflection on teaching through videotape analysis. Prerequisite: admission to teacher education program. Credit/No Credit only. Secondary teacher education students enroll for 8 credits during the spring semester. Credit variable, maximum 8 units.

A&S SS FA SSP

Educ 4922. Student Teaching in Middle Schools

Same as Educ 4922.

Supervised teaching experience. Group meetings and individual conferences. Prerequisite: admission to teacher education program. Credit/no credit only. Middle school teacher education students enroll for 8 credits. Offered spring semester. Credit variable, maximum 8 units.

A&S SS FA SSP

Educ 494. Student Teaching in Grades K-12

Same as Educ 494.

Supervised teaching experience. Group meetings and individual conferences. Prerequisite: admission to teacher education program. Credit/no credit only. K-12 teacher education students enroll for 8 credits. Offered Spring semester. Credit variable, maximum 8 units.

A&S SS FA SSP

Educ 4951. Middle School Philosophy and Organization

Same as Educ 4951.

This course examines the history, goals, organization and philosophy of middle schools as institutions. Students will explore how the characteristics and needs of early adolescents guide the mission, structure and operation of middle schools. Prerequisite: admission to teacher education program. Credit 2 units.

A&S SS FA SSP

Educ 4952. Middle School Curriculum and Instruction

Same as Educ 4952.

Building on knowledge of the middle-level child and the ways in which middle schools are organized to meet the needs of middle-level children (covered in Educ 4951), this course explores the learning styles and attributes of middle-school students and examines instructional theory, methods and materials appropriate to grades 5-9. In addition, portions of this course will be devoted to specific content field methodology subdivided into English/language arts and social studies or science and math. The English/social studies and science/math sessions will be held concurrently and students will attend the session appropriate to their content major or minors. Interdisciplinary team teaching will be modeled and featured in these sessions. Features a required practicum experience. Prerequisite: admission to teacher education program and Ed 4951. Credit 3 units.

A&S SS FA SSP

Educ 498. Internship Seminar

Credit 3 units.

Educ 4999. Capstone Seminar in Educational Studies

All majors not writing an Education senior Honors thesis are required to enroll in the senior seminar, a reading colloquium. Students read with faculty and write papers based on the readings and the courses taken to complete the major requirements in the program. All Honors students are required to attend at least one session of the seminar to present their work and all graduating Educational Studies majors, including those completing Honors work in Educational Studies, are required to attend the final session of the seminar. Credit 3 units.

A&S SS FA SSP

Educ 500. Independent Work

Credit variable, maximum 6 units.

Educ 503. Foundations of Educational Research

An introduction to the basic concepts, philosophies, and techniques of research. The first portion of the course introduces the various kinds of methodologies used in education, including an analysis of the strengths, weaknesses, and limitations of each. The last portion of the course is devoted to the techniques used in investigating a topic of relevance to the students. Prerequisite: graduate standing or permission of instructor. Credit 3 units.

Educ 5055. Power and Conflict in Mathematics and Science Education

The purpose of this course is to examine the research literature in mathematics and science education focused on the interactions of policy, classroom practice, and community on student advancement. A central focus of the course will be on issues of agency, culture, classroom dynamics, and local structures that influence students' learning of science and mathematics. The readings will be drawn from the sociology of education, socio-cultural studies, philosophy of science, policy studies, and other relevant literature. Credit 3 units.

Educ 516. Design of Educational Research

Credit 3 units.

Educ 5230. Professional Development in Mathematics and Science

Professional development is a broad term encompassing a wide array of programming designed to improve teaching practices and student learning. Among science and math educators, professional development is a primary intellectual conduit between research and the practices of teachers in K-12 classrooms. The purpose of this course is to examine the theoretical assumptions driving the principles of design used in current models of professional development, critique the alignment of current theoretical approaches with evidence from research, and analyze the research methodologies for the probability of predicting impact on the goals of reform in content, curriculum, and instruction of science and math in K-12 classrooms. Credit 3 units.

Educ 5231. Curriculum and Evaluation: A Review in Mathematics

Students are introduced to an examination of various types of evaluation methods for curriculum effectiveness using the recent mathematics curricula as an example. We begin by reviewing the literature on the "Math Wars" to see how the news media and Internet have portrayed the issues and then examine the studies of the curricula themselves including the recent ones from the National Science Foundation, Chicago Math, and Saxon. Students are introduced to three types of evaluation methods: content analysis, comparative studies, and case studies, and will read examples of each. A curriculum evaluation framework is discussed and a subset of studies of each type is read and analyzed. If available, the National Research Council's report on the evaluations is read and discussed. The course is appropriate for doctoral and post-doctoral students in mathematics and science education as a model of curricular evaluation and related policy issues. Credit 3 units.

Educ 5232. Learning Sciences Practicum in Math/Science/Technology

Students participate in a series of design experiments which vary from 1-1 interviews to small group studies to various classroom and after-school configurations. The students are introduced to writings on methods of clinical interviewing and conducting small group investigations and classroom design experiments. The projects involve specific mathematical and scientific concepts often using new technologies. Students are expected to review the literature on the learning sciences connected with the particular experiments and to learn to conduct, analyze, and assist in the preparation of publications on the topics. Once a week laboratory meetings are scheduled to discuss articles and report on progress in the studies. Credit 3 units.

Educ 5233. Modeling and Inquiry in Mathematics and Science

This course introduces mathematics and science education students to research and practice related to the use of inquiry and modeling in instruction in science and mathematics. Three major topics include: 1) the use of modeling and simulation in current research in science and mathematics; 2) examples of modeling and inquiry in curricula and instruction and observational approaches to its documentation, and 3) theoretical and empirical work on the effects of inquiry on students and teachers' knowledge. Theoretical work by Dewey, philosophers of science, and science and mathematics educators are examined. The course includes hands-on exploration of curricular topics, video analysis and readings on developments in research related to inquiry. Credit 3 units.

A&S SS

Educ 525. Diagnosis and Correction of Reading Disabilities

Same as Educ 525.

This course is the second of three courses on teaching reading and writing, with an emphasis on readers, texts, and assessment. The purposes of this course are to address issues of the differences and disabilities that may occur in reading processes; evaluation of students' reading skills; analysis of texts for their use by readers; and designing classroom reading activities that assist students in all kinds of materials. Prerequisite: Educ 4681, or permission of instructor. Credit 3 units.

Educ 527. Discourse Analysis

Same as Ling 527.

This course will locate discourse analysis in relation to linguistics, psycholinguistics, sociolinguistics, language acquisition, and literacy. Discussions will cover different emphases in the study of discourse, including speech act theory, conversation, and text structure. Permission of instructor required. Credit 3 units.

Educ 5282. Action Research and Other Forms of Reflective Practice

This course offers knowledge and strategies for educators who desire to be more reflective and inquiry-oriented in their classroom practice. It explores the basic assumptions of qualitative research and examines, in considerable detail, one particular qualitative approach known as action research. Participants study the possibilities and challenges that action research holds for educators and learn how to use the methods of action research to study and change their own classrooms or schools. They also become familiar with other forms of reflective practice, including storytelling, study groups, and critical friends' groups. Participants are required to complete a small action research project in their own school. Credit 3 units. Educ 531A. Computer Applications in Education Credit 3 units.

Educ 557. Contemporary Issues in Education and Society

Same as AMCS 557, Educ 557.

This course is designed to provide teachers and others interested in education and schooling with an opportunity to examine some of the pressing issues in American education that are current topics of sustained discussion and debate. The issues selected for analysis vary from year to year. Credit 3 units.

Educ 5571. Literacies in and out of Schools

What it means to be literate is constantly being negotiated and renegotiated as individuals move from context to context. Expanded definitions of literacy include a focus on literacy as sets of socially, culturally, historically, and politically situated practices. Built on a model of multiple literacies used in the production of meaning from texts in a context, this course will draw on various pivotal research studies that address the role of individuals as well as the social dynamics in literacy learning and the dynamics underlying individual differences across contexts, including relations of power and unequal access to literacies. Credit 3 units.

A&S SS

Educ 5681. Reading in the Content Areas

Same as Educ 5681.

This course focuses on reading comprehension, reading and writing in content areas, reading assessment, and reading curriculum evaluation. Prerequisite: admission to teacher education program or permission of director of Teacher Education. Credit 3 units.

English

Chair

David Lawton, Professor
F.A.A.H., Ph.D., University of York

Endowed Professors**Gerald L. Early**

Merle Kling Professor of Modern Letters
Ph.D., Cornell University

Wayne Fields

Lynne Cooper Harvey Distinguished
Professor of English
Ph.D., University of Chicago

Joseph Loewenstein

Ph.D., Yale University

Robert Milder

Ph.D., Harvard University

Carl Phillips

M.A., Boston University

Vivian Pollak

Ph.D., Brandeis University

Richard Ruland

Ph.D., University of Michigan

Rafia Zafar

Ph.D., Harvard University

Steven Zwicker

Stanley Elkin Professor in the Humanities
Ph.D., Brown University

Associate Professors**Miriam Bailin**

Ph.D., University of California–Berkeley

Mary Jo Bang

M.F.A., Columbia University

Guinn Batten

Ph.D., Duke University

Steven Meyer

Ph.D., Yale University

Wolfram Schmidgen

Ph.D., University of Chicago

Assistant Professors**Lara Bovilsky**

Ph.D., Duke University

Daniel Grausam

Ph.D., University of California–Berkeley

Marina MacKay

Ph.D., University of East Anglia

William McKelvy

Ph.D., University of Virginia

Sarah Rivett

Ph.D., University of Chicago

Jessica Rosenfeld

Ph.D., University of Pennsylvania

Joseph D. Thompson

Ph.D., Yale University

Kellie Wells

Ph.D., Western Michigan University

Senior Lecturers**Kathleen Drury****Amy Pawl**

Ph.D., University of California–Berkeley

Paul Rosenzweig
Ph.D., University of Michigan
Shane Seely

Lecturers

Joan Brockman
Ph.D., St. Louis University
Bethany Daniels

Dean, University College

Robert Wiltenburg
Ph.D., University of Rochester

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Marshall Klimasewiski
M.F.A., Bowling Green State University

Director of the Creative Writing

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Mary Jo Bang
M.F.A., Columbia University

Professors Emeriti

Donald Finkel
M.A., Columbia University
Richard Hazelton
Ph.D., Rutgers University
Naomi Lebowitz
Ph.D., Washington University
William Madsen
Ph.D., Yale University
Carter C. Revard
Ph.D., Yale University
Daniel Shea
Ph.D., Stanford University
Richard Stang
Ph.D., Columbia University
Jarvis Thurston
Ph.D., University of Iowa
Burton M. Wheeler
Ph.D., Harvard University

If you are seeking a well-rounded liberal arts education or are interested in pursuing a career in journalism, publishing, business, law, medicine, social work, teaching, or writing, majoring in English is an excellent choice.

This diverse course of study introduces you to important literary texts and offers a wide range of electives that help develop your reading and writing skills, make use of critical thinking skills, and enhance appreciation of the intellectual, aesthetic, and moral dimensions of human experience.

In addition to teaching literary texts and theories, the Department of English offers you the opportunity to develop advanced writing skills in expository and creative writing courses. Courses are cross-listed with such programs as Women and Gender Studies, African and African American Studies, Religious Studies, and Comparative Literature.

The English faculty is made up of distinguished writers and scholars dedicated to

your learning experience. Classes are usually small enough to encourage a sharing of ideas among students and to provide stimulating discussion between faculty and students.

As a student majoring in English, you may pursue internships in communications and journalism, participate in study abroad programs, and design independent study courses. The English department's chapter of Sigma Tau Delta, the national English Honorary, publishes its own critical journal, *Word*, and involves majors in a variety of literary and extracurricular programs.

You also will have the opportunity to take courses and attend lectures and readings by distinguished writers and critics who join the department as Visiting Hurst Professors. In 2003–04, professorships were held by Declan Kiberd, Joy Williams, and Harold Love; in 2004–05, professorships were held by Jay Wright, Heather McHugh, Tony Earley, Kathryn Davis, and Frank Bidart; in 2005–06 by Michael Martone, Arthur Sze, Linda Gregerson, and Sigrid Nunez.

For more detailed information about declaring a major or minor in English, the English departmental office offers a *Guidebook on Undergraduate Studies in English*.

The Major: To major in English you are required to take E Lit 215 and either E Lit 211 or 257. There are no prerequisites for 200-level course work, but if you have little experience in writing, you should consider taking the required Writing I before enrolling in these courses.

English majors take 24 units of advanced courses, of which two must be taken at the 400 level. Students choose two courses in literature pre-1700 and two courses in literature between 1700 and 1900, one of which may also fulfill the requirement for a course in American literature. Then, if you wish to increase your expository writing skills or participate in fiction or poetry writing workshops, you may either substitute 9 units of upper-level English composition courses toward the major, or elect a 15-unit writing minor in English.

The Minor: You may minor in English and American literature by completing 15 units of introductory and advanced courses, of which one must be Shakespeare. The writing minor requires 15 units of expository or creative writing courses.

Senior Honors: If your grade point average is 3.5 or above, you are encouraged to apply for Honors with recommendations from your instructors. To earn Honors by Thesis, you must complete 27 units of advanced English courses, participate in the required Junior Honors Seminar (E Lit 398), and complete an Honors thesis. You can earn up to 6 units in Honors thesis tutorial. Or, to gain Honors without Thesis, you will take two additional courses at the 400 level and submit two fully revised essays from previous course work. Each candidate takes an oral examination.

Undergraduate Courses

English Composition

E Comp 100. Writing 1
Students take Writing 1 to satisfy the University Writing Requirement (usually in the fall or spring

semester of their first year). In Writing 1, students develop the skills needed to write in the university context, experimenting with voices, styles, and rhetorical strategies while becoming more adept at researched and argumentative writing. Students must earn a C+ or better to satisfy this requirement. Those who do not will be required to take another semester of writing (either E Comp 100 or E Comp 213); those who do but still have difficulties that are likely to hinder them in other courses will be recommended for further practice in E Comp 213. Sections are small to facilitate in-class practice and workshop-style exchange. Must be taken for a letter grade. Credit 3 units.

FA Comp

E Comp 1001. Writing Fundamentals

A preparatory course required of some students before they take Writing 1 (E Comp 100) (placement to be determined by the department). In E Comp 1001, students explore the writing process while working on fundamentals of written communication, including grammar and structure. Particular attention is paid to reading comprehension, critical thinking, and organization of ideas. The course does not by itself satisfy the University Writing Requirement, and must be taken for a letter grade. Credit 3 units.

A&S LA

E Comp 211. Practice in Composition

Study in fundamentals of rhetoric, consistency in grammatical structure, and varieties of usage with attention to audience adaptation and the writer's style. Frequent practice in writing, primarily exposition, although specific assignments are determined by the needs of each class. Some sections emphasize academic discourse, oral communication skills, and connections between personal and scholarly researched writing. Limit: 15 students. Prerequisite: Writing 1. Credit 3 units.

A&S LA

E Comp 213. Writing 2

An intermediate writing course that builds on the critical analysis skills that are the foundation of Writing 1. Students in Writing 2 experiment with and develop different modes of written and oral communication, seeking new awareness of writing strategies and conventions. Course work culminates in a project that incorporates researched, personal, and analytical modes. Prerequisite: Writing 1 or the equivalent (to be approved by the department). Credit 3 units.

A&S LA

E Comp 221. Fiction Writing

Introductory course in the writing of fiction. Limit: 15 students. Prerequisite: Writing 1. Credit 3 units.

A&S LA

E Comp 222. Poetry Writing

Introductory course in the writing of poetry. Limit: 15 students. Prerequisite: Writing 1. Credit 3 units.

A&S LA

E Comp 224. Playwriting

Same as Drama 227.

An introductory course in playwriting. Limited to eight students. Prerequisite: Writing 1 and permission of the instructor. Credit 3 units.

A&S LA

E Comp 298. Journalism: Communications Internship

For students undertaking projects in newspaper or magazine journalism, in radio or television, or in business, government, foundations, and the arts. The student must secure permission of the chair of the Undergraduate Committee, file a description of his or her project with the department and, at the end of the semester, submit a significant portfolio of writing together with an evaluation by the internship supervisor. Up to three units acceptable

toward the Writing Minor, but cannot be counted toward the English Major or Literature Minor. Prerequisite: Writing 1. Must be taken Credit/No Credit. Credit 3 units.

E Comp 311. Exposition

Advanced composition (nonfiction) stressing logical and rhetorical principles in the development of ideas. Analytical study of models. Frequent practice in writing and criticizing, with attention to style. Individual and small-group conferences. Prerequisites: Writing 1 and junior standing. Credit 3 units.

A&S LA WI

E Comp 3111. Exposition (Visual)

This exposition course emphasizes writing and visual analysis. We examine important forms of visual media—including painting, photography, film, television, advertising, and the Internet—to develop a sophisticated sense of the strategies, techniques, and the rhetoric of visual representation. Prerequisite: Writing 1 and junior standing or permission from the instructor. Credit 3 units.

A&S LA

E Comp 312. Argumentation

Same as Lw St 312.

A study of rhetorical principles, persuasive techniques, fallacies. Researching topics; writing and presenting arguments and critiques. Prerequisites: Writing 1 and junior standing. Credit 3 units.

A&S LA WI

Advanced Writing

The Department of English makes available each year a number of limited-enrollment courses in poetry, fiction, nonfiction prose, and playwriting. With the approval of the department, juniors and seniors may elect individual writing projects under E Comp 500 Independent Study.

E Comp 314. Topics in Composition

Somewhere between fiction and journalism lies the world of creative nonfiction. From memoir to essay to straight travel writing it explores interior worlds as well as exterior ones. This course is designed to give students the opportunity to write using fiction techniques but from a nonfiction point of view in describing the personal journey. Credit 3 units.

A&S LA

E Comp 321. Advanced Writing: Fiction

Limit: 12 students. Prerequisite: E Comp 221 and permission of instructor upon submission of writing samples. Credit 3 units.

A&S LA

E Comp 322. Advanced Writing: Poetry

Limit: 12 students. Prerequisite: E Comp 222 and permission of instructor upon submission of writing samples. Credit 3 units.

A&S LA

E Comp 351. Introduction to Playwriting

Same as Drama 351.

A&S LA FA Lit

E Comp 352. Introduction to Screenwriting

Same as Film 352.

A&S LA

E Comp 403. Dramaturgical Workshop

Same as Drama 403.

A&S LA

E Comp 421. Proseminar in Writing: Fiction

This course is aimed at undergraduates who have taken both the initial and the advanced fiction workshops and would like to cap their undergraduate writing careers with an intensive workshop. We read contemporary and classic short stories—most assigned, but some chosen and presented by students—as part of an ongoing discussion of craft, and each student is asked to map out and

complete a broad, self-designed, large-scale project, usually a sequence of stories, a novella, or the dogged pursuit through several drafts of a single elusive story. Prerequisites: E Comp 221 and 321 and permission of instructor upon submission of writing sample and undergraduate student standing. Credit 3 units.

A&S LA

E Comp 422. Proseminar in Writing: Poetry

For students qualified to pursue their own projects in poetry; criticism by other members of the class and by the instructor. Limit: 12 students. Prerequisites: E Comp 322 and permission of instructor upon submission of writing samples. Credit 3 units.

A&S LA

E Comp 423. Proseminar in Writing: Nonfiction Prose

For students qualified to pursue their own projects in nonfiction prose; criticism by other members of the class and by the instructor. Limit: 12 students. Prerequisite: permission of instructor upon submission of writing samples. Credit 3 units.

A&S LA

E Comp 431. Craft of Fiction

A literature/creative writing hybrid course; students read a number of contemporary historical fictions—an increasingly important and innovative genre—and then write one of their own. Credit 3 units.

A&S LA

E Comp 432. The Craft of Poetry

An investigation into the art and craft of poetry, in order to consider the choices a poet makes in the process of composing and revising. The students are asked to complete many poetry writing exercises, as well as the writing of critical papers, in their investigation of poetic forms and modes from many historical periods. (This course is highly recommended for those who have completed or are taking the 300-level creative writing courses and to students in The Writing Program.) Credit 3 units.

A&S LA

E Comp 452. Seminar in Playwriting

E Comp 4521. Advanced Screenwriting

Same as Film 452.

A&S LA FA Lit

E Comp 4731. Advanced Playwriting

Same as Drama 473.

A&S LA

E Comp 4801. Screenwriting

Same as Drama 480.

A&S LA

E Comp 500. Independent Study

Independent study in creative or expository writing. Prerequisites: junior standing and permission of the department. Students proposing projects in fiction or poetry must submit writing samples for approval of the faculty members directing the work. Projects in expository writing must be described in detailed prospectuses and approved by the faculty members directing the work and by the director of undergraduate studies. Credit/No Credit only. Credit variable, maximum 6 units.

English Language and Literature

E Lit 133C. African-American Poetry

Same as AFAS 133C.

A&S TH FA Lit

E Lit 151. Literature Seminar for Freshmen

Reading courses, each limited to 15 students. Topics: selected writers, varieties of approaches to literature, e.g., Southern fiction, the modern American short story, the mystery; consult Course List-

ings. Prerequisite: first-year standing. Credit 3 units.

A&S TH FA Lit

E Lit 151S. Literature Seminar for Freshman

Reading courses, each limited to 15 students. Topics: selected writers, varieties of approaches to literature, e.g., Southern fiction, the modern American short story, the mystery; consult *Course Listings*.

Prerequisite: first-year standing. Credit 3 units.

A&S TH

E Lit 190. Freshman Seminar African and African-American Culture

Same as AFAS 188.

A&S SD TH FA Lit

E Lit 2001. Howard Nemerov Program

E Lit 209. World Literature: Exile and Displacement

Same as Comp Lit 211.

A&S TH FA Lit

E Lit 211C. Chief English Writers I

Same as Med-Ren 211C, E Lit 211C.

An introduction to major writers: Chaucer through Milton. Emphasis on chief works and critical methods for interpretation. Credit 3 units.

A&S TH FA Lit

E Lit 214C. Introduction to Women's Texts

Same as WGS 214C.

A&S SD TH FA Lit

E Lit 215. Introduction to Literary Study: Modern Texts, Contexts, and Critical Methods

Same as AMCS 2153.

Intensive introduction to important literary works published since 1700; how literary scholars use cultural, biographical, and generic contexts and apply critical approaches. Credit 3 units.

A&S TH

E Lit 228. Theater Culture Studies I

Same as Drama 228C.

A&S TH FA AH

E Lit 229C. Theater Culture Studies II

Same as Drama 229C.

A&S TH FA AH

E Lit 237. The American Dream: Myth or Nightmare?

Same as Drama 237.

A&S TH

E Lit 257. The Art of Poetry

An introduction to the critical vocabulary necessary for the study and evaluation of poetry; provides a basic understanding of prosody, poetic forms, and figurative language, and the historical periods in which poetry has been written. Credit 3 units.

A&S TH

E Lit 281C. The Middle Ages: Multiple Views of Culture

Same as Med-Ren 310C.

A&S TH FA Lit

E Lit 302W. Writing Modern War

The 20th century, as Graham Greene observed, was a century "in which there would never be a peace." This writing-intensive course examines the ways in which modern writers have tried to describe warfare and its impact on both combatants and those on the "home front." Credit 3 units.

A&S TH WI

E Lit 303W. Strangers and Savages, Aliens, and Outcasts

This writing-intensive course focuses on a literary tradition united by its representation of passionate hatred and intolerance. Credit 3 units.

A&S TH WI

E Lit 304W. Craft of Fiction: Historical Fiction

This writing-intensive course is a literature/creative writing hybrid course in which a number of contemporary historical fictions (meaning, fictions set in periods prior to the authors' births, and sometimes incorporating real historical events or figures) will be covered. Credit 3 units.

A&S TH WI

E Lit 305W. Fabricating Lives

The premise of this writing-intensive course is that autobiography is not a straightforward narrative of the past but a conscious shaping of life into a meaningful design. Credit 3 units.

A&S TH WI

E Lit 306. Old English Literature: *Beowulf*

Credit 3 units.

A&S TH

E Lit 307. The Writing of the Indian Subcontinent

The Indian Subcontinent has in recent years yielded a number of writers, expatriate of other-wise, whose works articulate the post-colonial experience in the "foreign" English tongue. This course is designed to be an introductory survey of such writing, drawing on select Subcontinental writers. Covering both fiction and nonfiction by several authors including R. K. Narayan, Salman Rushdie, Anita Desai, Amitav Ghosh, Sara Suleri, Michael Ondaatje and Romesh Gunasekera, we discuss such issues as the nature of the colonial legacy, the status of the English language, problems of translation (linguistic and cultural), the politics of religion, the expatriate identity, and the constraints of gender roles. Credit 3 units.

A&S CD TH FA Lit

E Lit 308. Topics in Asian-American Literature: Identity and Self-image

Same as AMCS 310, IAS 3081, East Asia 308. Topics in Asian-American literature which vary from semester to semester. Credit 3 units.

A&S SD TH FA Lit

E Lit 311E. Electronic Poetry

An inquiry into new forms of screen art beginning with traditional printed poetry to varieties of virtual poetry emergent on the computer screen; the stream of programming code as a level of writerly activity. Credit 3 units.

A&S LA

E Lit 311W. Electronic Poetry

The primary focus in this writing-intensive course is to look at every possible kind of electronic poetry we can come up with in order to evaluate it as poetry. Credit 3 units.

A&S LA

E Lit 312. Topics in English and American Literature

Same as AMCS 3112, AMCS 3122.

Topics: themes, formal problems, literary genres, special subjects (e.g., English and American Romanticisms, science and literature, the modern short story). Consult *Course Listings* for offerings in any given semester. Credit 3 units.

A&S TH FA Lit

E Lit 3121. The Medieval Romance

Same as Med-Ren 312.

The romance grows out of the epic: how we get from the fall of Troy to the fall of Troilus. Readings from Vergil's *Aeneid* to *Sir Gawain and the Green Knight*. Credit 3 units.

A&S TH FA Lit

E Lit 3122. Topics in Literature: Heroes and Lovers

Same as Med-Ren 3122.

We read *Beowulf*, *Sir Gawain and the Green Knight*, Chaucer's *Troilus and Criseyde*, *The*

Mabinogion, *The Tain*, *Margery Kempe*, and Malory's *Morte d'Arthur*. Credit 3 units.

A&S TH FA Lit

E Lit 313. Topics in English and American Literature

Same as AMCS 3113.

Credit 3 units.

A&S TH FA Lit

E Lit 3141. American Indian Literature

Texts and contexts from Osage, Yaqui, Hopi, Acoma, Laguna, Blackfeet, Chippewa, Kiowa, and other nations of America; naming ceremonies, deer dances, creation stories, and trickster tales lead to reading of contemporary poems and fiction. Credit 3 units.

A&S TH FA Lit

E Lit 315. Topics in American Literature

Same as French 381, AMCS 3150.

Topics: themes, formal problems, literary genres, special subjects (e.g., the American West, American autobiographical writing). Consult *Course Listings* for offerings in any given semester. Credit 3 units.

A&S TH FA Lit

E Lit 315W. The Literature of the American Revolution

Same as AMCS 3155.

While not a historical survey, the course presents several case studies raising questions about later myth and contemporary reportage. Credit 3 units.

A&S TH WI

E Lit 319. Topics in Women and Literature

Same as WGS 319.

A&S SD TH WI FA Lit

E Lit 3191. Contemporary American Women Poets

Same as AMCS 3191, WGS 3191.

An introduction to the work of contemporary American poets who are women; extensive reading of both poetry and prose. Readings include the work of poets such as Bishop, Rich, Plath, Sexton, Clampitt, Gluck, Moss, Graham, Howe, Dove, Oliver, Forche, Lauterbach. Credit 3 units.

A&S TH FA Lit

E Lit 321. American Literature to 1865

Same as AMCS 3223, E Lit 321B.

Credit 3 units.

A&S TH FA Lit

E Lit 3211. Topics in 19th-Century American Writing

Credit 3 units.

A&S TH FA Lit

E Lit 322. American Literature 1865 to Mid-20th Century

Credit 3 units.

A&S TH FA Lit

E Lit 3222. 20th-Century American Writers

Same as AMCS 3222.

Credit 3 units.

A&S TH FA Lit

E Lit 322C. Major American Writers II

Same as E Lit 325.

Representative works of American writing from 1880 to the present, with particular attention to fiction and poetry; authors include James, Stein, Hemingway, Faulkner, Ellison. Prerequisite: 6 units of sophomore literature, junior standing, or permission of instructor. Credit 3 units.

A&S TH FA Lit

E Lit 322W. Major American Writers II

This writing-intensive course is intended as an in-depth introduction to arguably the two most significant American fiction writers of the first half of the 20th century. Credit 3 units.

WI

E Lit 323. Selected American Writers

Same as AMCS 3232, WGS 323.

Intensive study of one or more American writers. Consult *Course Listings* for offerings in any given semester. Credit 3 units.

A&S TH FA Lit

E Lit 3254. Topics in Literature: African Americans and Children's Literature

Same as AFAS 3254.

A&S TH FA Lit

E Lit 326. Selected American Writers

Credit 3 units.

A&S TH FA Lit

E Lit 327. Selected American Writers

Credit 3 units.

A&S TH FA Lit

E Lit 328. Selected English and American Writers

Intensive study of one or more English or American writers (e.g., Cooper and Twain, Dickens and Eliot, Joyce). Consult *Course Listings* for offerings in any given semester. Credit 3 units.

A&S TH FA Lit

E Lit 328W. Selected English and American Writers

Credit 3 units.

A&S TH

E Lit 329. Selected English and American Writers

Credit 3 units.

A&S TH FA Lit

E Lit 3303. Humanities and Technology Project:

The Humanities and Technology Project provides the opportunity to combine a passion for the liberal arts with technology training and the leadership skills needed to succeed in any profession. Students develop prototype solutions for projects integrating technology into the humanities; faculty members in the humanities act as their clients; and specialists from Arts & Sciences computing provide training in a variety of database, multimedia, and interactive technologies. Course work involves research, planning, teamwork, technology training, and presentation skills. Credit 3 units.

A&S TH FA Lit

E Lit 330C. The Renaissance

Same as Med-Ren 318C.

A&S TH

E Lit 331C. Tragedy

Credit 3 units.

A&S TH FA Lit

E Lit 3322. Reading in the Renaissance: Texts and Practices

This course aims, first, to acquaint students with English Renaissance literature, from Shakespeare to Dryden; then to investigate the ways in which that literature might have been read by its original audience; and finally to consider how such knowledge might, or should influence, our own understanding and experience of Renaissance texts. Credit 3 units.

A&S TH

E Lit 332C. Comedy**E Lit 334. A History of the Golden Age of Children's Literature**

A comprehensive survey of the major works for children written during this period. Credit 3 units.

A&S TH FA Lit

E Lit 3341. The History of Children's Literature from the End of the Golden Age to the Age of Multiculturalism

A continuation of English 334, this is a compre-

hensive survey looking at the major works of children's and adolescent literature in both Britain and America. Credit 3 units.

E Lit 335. Modern Drama 1850–1920

The emergence of modern drama: emphasis on Ibsen, Strindberg, Chekhov, Shaw. Credit 3 units.

A&S TH FA Lit

E Lit 335I. Modern Drama 1880–1945

Major figures of modern drama: Ibsen, Strindberg, Shaw, Chekhov, Lorca, Synge, Pirandello, Brecht, and O'Neill. Close literary study and consideration of these plays as examples of the art of the stage. Reference is also made to contemporary experiments in the other arts and to major literary movements in the time period under consideration. Credit 3 units.

A&S TH FA Lit

E Lit 336I. Modern Drama, 1945 to the Present

Course concentrates on the development of modern drama from 1945 to the present. Focus is on both literary and theatrical techniques as well as the examination of trends in the contemporary theatre from Samuel Beckett through Sam Shepard. Perspective is comparative and international in scope, with particular attention given to women and minority playwrights. Credit 3 units.

A&S TH FA Lit

E Lit 3370. Contemporary Stages: An Anglo-American History of Performance after 1950

Credit 3 units.

E Lit 337I. The Theatre of the Absurd

Credit 3 units.

A&S TH FA Lit

E Lit 339. Topics in 19th-Century American Writing

Same as AMCS 321I.

Credit 3 units.

A&S TH FA Lit

E Lit 339I. Topics in 19th- and 20th-Century American Writing: American Short Fiction

Same as AMCS 339I.

This course is directed toward a broad range of majors and non-majors with a serious but not scholarly interest in American short fiction. Credit 3 units.

A&S TH

E Lit 340. Topics in 20th-Century American Writing

An introduction to major American works and writers from the later 19th century through the mid-20th century. Writers studied include Twain, James, Crane, Fitzgerald, Hemingway, Faulkner, Frost, Eliot and Stevens. The course assumes no previous acquaintance with the material and is directed toward a broad range of majors and non-majors with a serious but not scholarly interest in the subject. Students with little or no background in literature might be advised to take E Lit 213C (Chief American Writers), while English majors looking to do advanced work should consider the 400-level American literature sequence. Students who have taken E Lit 213C should not enroll in this course. Credit 3 units.

A&S TH FA Lit

E Lit 340W. The American Novel: Split and Hybrid American Identities

Same as AMCS 340I.

Examination of the struggle to form an enabling identity for author, characters, and text against the divisive pressures of family and society. Credit 3 units.

A&S TH WI

E Lit 342W. The Romance: Medieval to Modern

Credit 3 units.

E Lit 343. Two Cultures: Literature and Science

Same as E Lit 343.

The relation between biology and literature as it has been examined and expressed in poetry, fiction, and nonfiction of the past two centuries. Credit 3 units.

A&S TH

E Lit 344W. Writing About Performance

In this writing-intensive course, students develop critical strategies for writing about theater and other performance events, in the present and in a range of historical periods. Credit 3 units.

A&S TH WI

E Lit 347. Masterpieces of Literature I

Masterpieces of Western literature in English translation: Homer through Dante. Credit 3 units.

E Lit 348. Masterpieces of Literature II

Masterpieces of Western literature in English translation: the 17th century through the 20th century. Credit 3 units.

E Lit 3522. Topics in Literature

Same as Drama 3523.

Topics course which varies by semester. Credit 3 units.

A&S TH FA Lit

E Lit 353I. Selected English and American Writers:

Same as AMCS 353I.

Credit 3 units.

A&S TH FA Lit

E Lit 355. Topics in Literary Criticism and Theory

Credit 3 units.

A&S TH FA Lit

E Lit 355I. Topics: Literary Criticism and Theory: Ways of Approaching a Literary Text

Credit 3 units.

A&S LA

E Lit 356. The Art of the Novel

Same as AMCS 356I.

Novelistic techniques and aesthetics. Credit 3 units.

A&S TH FA Lit

E Lit 357I. 20th-Century Poetry

Credit 3 units.

A&S TH

E Lit 358. Studies in Short Fiction

Study of the work of four novelists who were also fascinated by shorter forms throughout their careers: D. H. Lawrence, Joseph Conrad, Henry James and William Faulkner. The course is concerned with the variety of forms their work takes as it is shaped by the very individual visions of each. Credit 3 units.

A&S TH FA Lit

E Lit 358I. Historical and Comparative Linguistics

Same as Ling 320.

A&S LA FA Lit

E Lit 3582. Black Literature: Race, Class, and Writing in the United States and the Caribbean, 1900–1950

Same as AFAS 3582, AMCS 3582.

Study of the differences in literary tradition arising from the divergent social, racial, and educational milieux of the United States and the West Indies. Credit 3 units.

A&S SD TH

E Lit 359. 19th-Century American Women Writers

Same as WGS 358.

A&S TH FA Lit

E Lit 360. The Writings of Philip Roth

Fiction by Philip Roth in chronological order from his earliest to his last major effort. Credit 3 units.

A&S TH

E Lit 362. The 18th Century: A Study of Major Texts

Credit 3 units.

A&S TH

E Lit 363. Theater Culture Studies III: Melodrama

E Lit 363C. Theater Culture Studies III

Same as Drama 365C.

A&S TH FA Lit SSP

E Lit 365F. The Bible as Literature

Same as Re St 365F, Med-Ren 365F, JNE 365F, Comp Lit 365F.

Extensive reading in English translations of the Old Testament and the New Testament, with emphasis on literary forms and ideas. Credit 3 units.

A&S TH FA Lit

E Lit 367. Religious Themes in Contemporary Literature

Same as Re St 367.

The use by selected 20th-century writers of religious themes and symbols. Close analysis of the literary techniques by which religious concepts and images are developed and differing insights of writers representing a broad spectrum of contemporary attitudes toward religious issues. Credit 3 units.

A&S TH FA Lit

E Lit 370. The Age of Victoria

Works of fiction, poetry, journalism, children's literature, political cartoons, book illustrations, genre paintings, and photographs. The course aims to give a sense of the age in all its diversity and peculiarity, as well as to concentrate on a few central issues and developments in 19th-century British society: e.g. industrialism, materialism, feminism, liberalism, the rise of the social sciences. Readings will include works by Tennyson, Matthew Arnold, Lewis Carroll, Dickens, George Eliot, John Stuart Mill, Trollope, Oscar Wilde, and Edmund Gosse. Credit 3 units.

A&S TH FA Lit

E Lit 371. The Age of Chaucer

Same as Med-Ren 371.

Study of the ways in which literature and history interplay between 1340 and 1400. Literary texts include writings by Chaucer, Langland, the Pearl Poet, and anonymous composers of songs, dream visions, romances, satires, debates, and low stories; attempts to move from these to theoretical and over into historical texts, alienating where necessary and translating where possible. Credit 3 units.

A&S TH FA Lit

E Lit 372. The Renaissance

Same as Med-Ren 372.

Major texts of the European Renaissance examined to set English literary achievement in a continental context. Among authors studied: Petrarch, Castiglione, Erasmus, More, Luther, Wyatt, Rabelais, Montaigne, Shakespeare, Spenser, Jonson, Milton. Prerequisite: 6 units of literature, junior standing, or permission of instructor. Credit 3 units.

A&S TH FA Lit

E Lit 3722. History of the English Language

The course is designed to give students both a firm grasp of the facts of the history of the language and familiarity with some of the texts from which that history is derived. Credit 3 units.

A&S LA

E Lit 3725. Topics in Renaissance Literature
Topics course in Renaissance Literature. Credit 3 units.

A&S TH

E Lit 3731. Writing and the Representation of Pain

Writing-intensive course on the representation of pain at every level, from private suffering to public policy. Course reader consists of examples of or extracts from a diversity of materials: The Bible and Ovid, medieval religious lyric, saints' lives, visions of hell and damnation, descriptions of visionary illness, Freud's *Anna O*, Kafka's *In the Penal Colony*, Wilde's *The Nightingale and the Rose*, Woolf's *On Being Ill*, Artaud and the theater of cruelty; autobiographical and other writings by Susan Sontag and Inga Clendinnen; theory by Bataille, Deleuze, Dollimore, and Elizabeth Grosz; work on pain by Leder, Morris, Rey and others; poetry by Anne Sexton, Sylvia Plath, Gwen Harwood, Alan Jenkins and others. We also read Elaine Scarry's *The Body in Pain* and two recent novels: Andrew Miller's *Ingenious Pain* and Manil Suri's *The Death of Vishnu*. Credit 3 units.

A&S TH WI

E Lit 374W. Epistolary Literature in the 18th Century: Other People's Letters

In this writing-intensive course, we examine the attraction the letter held for authors and readers alike, taking into consideration the advantages and the disadvantages of the form, its role in the development of the early novel, and current theories of epistolary writing. Credit 3 units.

A&S TH WI

E Lit 375. The Romantic Period

Credit 3 units.
A&S TH FA Lit

E Lit 3752. Modern British Novel

Credit variable, maximum 6 units.

E Lit 376. The Victorian Period

Credit 3 units.
A&S TH FA Lit

E Lit 376C. The East-African Storyteller

Credit 3 units.
A&S TH FA Lit

E Lit 3778. Comparative Studies in the Novel

Same as Comp Lit 3778.
A&S TH FA Lit

E Lit 3781. Wanderlust: Travel and American Culture

A&S Requirements for College of Arts & Sciences students (for more information, see page 27).

CD = Cultural Diversity

LA = Languages and the Arts

NS = Natural Sciences and Mathematics

QA = Quantitative Analysis

SD = Social Differentiation

SS = Social Sciences

TH = Textual and Historical Studies

WI = Writing-Intensive Course

FA Requirements for College of Art students (for more information, see page 305).

AH = Art History

Comp = English Composition

Lit = Literature

NSM = Natural Sciences or Mathematics

SSP = Social Sciences or Philosophy

E Lit 381. Banned Books

Same as AMCS 379.

Why would anyone want to burn a book? Under what circumstances would you support censorship? Several years ago a Russian student was exiled to Siberia for possessing a copy of Emerson's *Essays*; today, school boards in the United States regularly call for the removal of *Huckleberry Finn* and *The Catcher in the Rye* from classrooms and library shelves. Actions like these dramatize the complex interconnections of literature and society, and they raise questions about what we read and the way we read. The course explores these issues by looking closely at several American and translated European texts that have been challenged on moral, socio-political, or religious grounds to determine what some readers have found so threatening about these works. Possible authors: Goethe, Voltaire, Rousseau, Defoe, Hawthorne, Flaubert, Twain, Chopin, Brecht, Salinger, Aldous Huxley, Ray Bradbury. Brief daily writing assignments. Credit 3 units.

A&S TH FA Lit

E Lit 3831. Topics in African-American Poetry

Same as AFAS 3838.

A&S TH FA Lit

E Lit 3838. Topics in African-American Poetry

Same as AFAS 3838.

Credit 3 units.

A&S TH FA Lit

E Lit 387. African-American Literature: Early Writers to the Harlem Renaissance

Credit 3 units.

E Lit 387C. Black Literature to Early 1900s

Same as AFAS 387C.

A&S SD TH FA Lit

E Lit 3881. Black Women Writers

Same as AFAS 3651.

A&S SD TH FA Lit

E Lit 388C. African-American Literature from the Harlem Renaissance

Same as AFAS 388C.

A&S SD TH FA Lit

E Lit 390. Topics in Comparative Literature

Same as Drama 456.

A&S TH FA Lit

E Lit 393. Literary Theory: Subject and Subjection

Same as Comp Lit 393.

A&S TH

E Lit 395C. Shakespeare

Same as Med-Ren 395C, Drama 395C.

Introductory course emphasizing critical interpretation. Representative plays are studied in detail. Required of all English majors and minors. Credit 3 units.

A&S TH FA Lit

E Lit 396. Topics in Shakespeare

This course provides a close look at a few of Shakespeare's plays. Credit 3 units.

A&S TH

E Lit 398. Junior Honors Seminar

Same as LH 398.

Topic or writer to be studied varies from semester to semester; consult *Course Listings*. Designed for students seriously considering Honors in English. Prerequisite: permission of instructor. Credit 3 units.

A&S TH FA Lit

E Lit 4003. Blacks in Fiction

Credit 3 units.

A&S TH FA Lit

E Lit 4011. Gender, Culture, and Identity in America

Same as WGS 401.

A&S SD TH FA SSP

E Lit 402. Introduction to Graduate Studies I: Research

Introduction to academic scholarship and related professional activities. A workshop in developing topics, conducting research, preparing and presenting conference papers, articles, and grant proposals. Credit 3 units.

A&S TH FA Lit

E Lit 4021. Introduction to Graduate Studies II

Continued introduction to academic scholarship and related professional activities. A workshop in developing topics, conducting research, preparing and presenting conference papers, articles, and grant proposals. Open only to graduate students in the English department. Credit 2 units.

E Lit 403. Black and White in American Drama

Same as AMCS 402, Drama 4031.

This course addresses the complex issue of race in America through the 19th and 20th centuries as dramatized by American playwrights, black and white. Authors include Countee Cullen, Lillian Hellman, Eugene O'Neill, Jean Toomer, Langston Hughes and Arthur Miller. Prerequisites: Junior standing, two 300-level courses or better. Credit 3 units.

A&S TH FA Lit

E Lit 404. Topics for Writers: Beckett

Same as Drama 404.

Waiting For Godot, Happy Days, Krapp's Last Tape: these are but three of Samuel Beckett's revolutionary texts for theater. The complete canon of plays is examined for structure and compositional elements. Students undertake exercises in dramatic composition and perform a chamber presentation of *Endgame*. Course is intended for writers with some experience of the dramatic form. Intending students must interview with instructor Nov. 12-14. Credit 3 units.

A&S LA FA Lit

E Lit 405. Living Influences: Poets and the Poets Who've Shaped Them

This course examines a number of very contemporary collections of poetry (e.g. from first books writers like Karen Volkman and Greg Williamson, to more established writers like Carl Phillips and Frank Bidart) to discover how generations of writers speak to and through one another. The course considers the nature and possible anxieties of writerly influence and how traditional and/or canonical writers' voices, verse, and vision have shaped a number of poets writing today. This class requires at least a basic knowledge of poetry in English up to the 1950s as we move freely among writers such as Ben Jonson, George Herbert, Gerard Manly Hopkins, and Emily Dickinson, as well as Pound, Eliot, Lowell, and Plath. Credit 3 units.

A&S TH FA Lit

E Lit 407. Old English, Introductory

Same as Ling 407, Med-Ren 407.

Study of the Anglo-Saxon language and introduction to major prose and short poetry of the period. Prerequisites: junior standing and 6 units of literature. Credit 3 units.

A&S LA FA Lit

E Lit 408. Old English Literature

Same as Med-Ren 408.

Close study of some major literary texts (e.g., Beowulf, the Exeter book) and major issues (e.g., Anglo-Saxon and Latin culture, traditions of heroic literature) of the Anglo-Saxon tradition. Prerequisite: E Lit 407, or permission of instructor. Credit 3 units.

A&S LA FA Lit

E Lit 410. Medieval English Literature I

Same as Med-Ren 410.

Credit 3 units.

A&S TH FA Lit

E Lit 4101. Medieval English Literature II

Same as WGS 4101, Re St 4101.
Topics course in Medieval English literature.
Credit 3 units.

A&S TH

E Lit 411. Old and Middle English Literature

Same as Med-Ren 411.
Early English literature from *Beowulf* and Anglo-Saxon poetry, in translation, through major works in Middle English of the 14th and 15th centuries, exclusive of Chaucer. Credit 3 units.

A&S TH FA Lit

E Lit 413. 17th-Century English Literature: 1603-60

Same as Med-Ren 413, LH 413.
Selected readings in English literature from Donne and Jonson through Dryden. Credit 3 units.

A&S TH FA Lit

E Lit 415. 18th-century English Literature

Same as AMCS 414, LH 422, WGS 415.
Selected readings in English literature from Pope and Swift through the age of Johnson. Credit 3 units.

A&S TH FA Lit

E Lit 415A. Readings in 19th-Century English Literature

Credit 3 units.

A&S TH FA Lit

E Lit 416. English Literature of the Romantic Period

Same as LH 460.
Credit 3 units.

A&S TH FA Lit

E Lit 418. Victorian Literature 1830-1890

Same as IAS 418, EuSt 418.
Readings in such authors as Carlyle, Tennyson, Browning, Mill, Arnold, and Pater. Credit 3 units.

A&S TH FA Lit

E Lit 4191. The Politics of the Body in the Writings of Andrew Marvell

Same as History 4191.

A&S TH

E Lit 420. Topics in English and American Literature

Same as LH 464.
Comparing the literatures — readings in the literature and theory of English and American Literature. Topics vary according to semester offerings. Credit 3 units.

A&S TH FA Lit

E Lit 4204. Film Theory

Same as Film 420.

A&S TH WI FA Lit

E Lit 423. Topics in American Literature

Same as AMCS 423, WGS 423.
Credit 3 units.

A&S SD TH FA Lit

E Lit 4231. Topics in American Literature I

Same as Re St 423, WGS 4233, AMCS 4231, LH 4232.

Credit 3 units.

A&S TH FA Lit

E Lit 4232. Slavery and the American Imagination

Same as AMCS 511, AMCS 4232, AFAS 435, LH 471.

Credit 3 units.

A&S TH FA Lit

E Lit 4233. The New England Tradition in American Literature

Credit 3 units.

E Lit 4234. Religion and the Public Sphere in Early America**E Lit 424. Topics in American Literature II**

Same as EnSt 424, WGS 4241, AMCS 424.
Credit 3 units.

A&S TH FA Lit

E Lit 4241. In the Kingdom of Swing—Black American Culture

An examination of the development of African-American literature and culture between 1929 and 1941. Credit 3 units.

A&S TH FA Lit

E Lit 4243. Contemporary African-American Drama

A close study of selected plays from Africa, the Caribbean and the United States. We consider plays by Lonnie Carter, John Pepper Clark, Adrienne Kennedy, Wole Soyinka, Efua T. Sutherland, Derek Walcott, and Edgar White, among others. Credit 3 units.

A&S TH FA Lit

E Lit 4244. Topics in African-American Literature

Same as AFAS 429, AMCS 4244, AMCS 4244.
Credit 3 units.

A&S TH FA Lit

E Lit 425. Early American Literature

Same as AMCS 430.

From the invention of "America" to the writings of Edgar Allan Poe. Topics include the literature of colonization, native American myths, New England Puritanism, representative texts of the American Revolution and Early Republic, fiction and drama in the period of literary nationalism. Credit 3 units.

A&S TH FA Lit

E Lit 4255. Seminar in Theater History

Same as Comp Lit 425.

A&S TH FA Lit

E Lit 426. The American Renaissance

Same as AMCS 4291.

Literature of the mid-19th century with attention to social and intellectual backgrounds and the sources of the transcendentalist movement. Credit 3 units.

A&S TH FA Lit

E Lit 427. American Literature: The Rise of Realism to World War I

Same as AMCS 4271.

The maturing of American literature from the regional origins of realistic fiction just prior to the Civil War through the early naturalist novel and the beginnings of modern American poetry. Credit 3 units.

A&S TH FA Lit

E Lit 428. Modernism and Postmodernism

Same as AMCS 431.

Readings in early sources of 20th-century developments, followed by a selective survey of literary discourse from the 1920s through the 1990s in the United States. Prerequisites: junior standing and 6 units of literature or graduate standing. Credit 3 units.

A&S TH FA Lit

E Lit 4282. English Modernist Fiction

Same as AMCS 4282.

The first half of the 20th century produced some of English fiction's greatest individual achievements, linked by writers' attempts to represent, through narrative experiments, a world in which many certainties about self and society were dissolving. Attentive reading of 10 novels or short story collections; study of the historical and cultural contexts to which these writers were responding. Among writers to be considered: E.M. Forster, Virginia Woolf, D.H. Lawrence, Rebecca West, Joseph Conrad, Katherine Mansfield, and Ford Madox Ford. Credit 3 units.

A&S TH

E Lit 429. American Fiction Since 1945

Same as AMCS 4301.

Credit 3 units.

A&S TH FA Lit

E Lit 431. English Drama, Exclusive of Shakespeare, to 1642

Same as Med-Ren 431, Drama 431.

Studies of selected major plays against a background of change and tradition in English drama from its beginnings to the closing of the theatres. Credit 3 units.

A&S TH FA Lit

E Lit 4312. Early Drama

This unit is concerned with English and European drama and spectacle from late Roman theater onwards: primarily in England, but with comparative material from France and Italy. The chronological span of the course ends at about 1600; the working assumption is that there is no clean break between Medieval and Renaissance drama, but that the theaters and scripts of the late 16th century should be understood as developing out of, as well as departing from, earlier theatrical traditions and practices. Credit 3 units.

A&S TH FA Lit

E Lit 432. Topics in Renaissance Drama

Same as LH 432, Drama 432.

A study of Elizabethan and Jacobean theatrical culture—the plays, players, playwrights, and audiences of public theaters, private theaters, and banqueting halls. Study includes the plays of Lyly, Kyd, Marlowe, Jonson, Chapman, Ford, Beaumont, Fletcher, Marston, Middleton, Webster, and Shakespeare. Credit 3 units.

A&S TH FA Lit

E Lit 4323. Reading in the Renaissance: Texts and Practices

Examination of reading practices among original audiences for Wyatt, Sidney, Shakespeare, Donne, Jonson, Herrick, Marvell, Rochester, and Dryden and application to our understanding and experience of early modern texts. Credit 3 units.

E Lit 433. Studies in Drama After 1660**E Lit 4331. American Drama**

Same as Drama 453.

A&S TH FA Lit

E Lit 434. Topics in English and American Drama

Varies from semester to semester. Credit 3 units.

A&S TH FA Lit

E Lit 435. Childhood and Society: The Formation of Children's Literature

An intensive examination of some of the major works that have shaped the canon and conception of children's literature in the English-speaking world. Among the authors to be studied are George MacDonald, Mark Twain, Kenneth Grahame, L. Frank Baum, Lewis Carroll, Robert Louis Stevenson, Rudyard Kipling, and others. If time permits at the end of the course, we examine some works that appeared in the *Brownies' Book*, the children's publication of the NAACP that appeared in 1920 and 1921, edited by W.E.B. Du Bois and Jessie Fauset, a significant attempt to create a literature for children of color. Credit 3 units.

A&S TH FA Lit

E Lit 436. Craft of Fiction: Dialogue

A literature/creative writing hybrid course, we concentrate on the element of dialogue in fiction. We focus on 20th-century novels and stories that use dialogue in radical ways or that place conversational dynamics at the center of their projects, probably including works by Don DeLillo, Henry Green, Grace Paley, and Philip Roth. We consider the architecture of conversations—the evasions

and hidden agendas; the art of the well-made monologue; how speech is shaped by varieties of linguistic capital; and secrets as a narrative device, extending into issues of conspiracy and paranoia. Since this is a craft rather than a traditional literature course, we approach the texts as creative writers (although experience as such is not required), considering what they have to say through a primary emphasis on the means they develop to say it, and we put the craft into practice: assignments include both a critical paper and a short story using radical elements of dialogue. We also make room for some consideration of the dynamics of actual conversations, outside of fiction, through a reading of some conversational analysts and speech-act theorists, and through some real-world experiments. Credit 3 units.

A&S TH

E Lit 437. Literary Theory: The Subject and Subjection

Credit 3 units.

E Lit 438. African-American Comedy

Credit 3 units.

A&S TH FA Lit

E Lit 440. Modernism

Credit 3 units.

A&S TH

E Lit 441. Literature of Catastrophe

Same as Comp Lit 442.

In this course we examine the ways in which art, both literary and visual, attempts to address catastrophic events. Credit 3 units.

A&S TH

E Lit 442. Introduction to Romantic Poetry

We read the poetry of the major Romantics—Blake, Wordsworth, Coleridge, Shelley, Byron, and Keats—with attention to their biographical, historical, economic, and cultural contexts. Credit 3 units.

E Lit 4451. Seminar: 19th-Century Theater in the United States and Britain

E Lit 4453. Seminar: Contemporary Irish Drama

E Lit 4454. Irish Women Writers

Same as WGS 4454.

Credit 3 units.

A&S TH FA Lit

E Lit 446. Introduction to Contemporary Poetry

Introduction to contemporary poetry. Credit 3 units.

A&S TH FA Lit

E Lit 4461. American Studies and Poetry: The 20th Century

Credit 3 units.

A&S TH FA Lit

E Lit 447. Modern British and American Poetry

Modern poetic forms, schools and techniques. Readings in such poets as Yeats, Eliot, Pound, Moore, Auden, Bishop, Hill. Credit 3 units.

A&S TH FA Lit

E Lit 4471. Modern Poetry I: Modernisms

American and British poetry before, during, and after World War I. Readings include Hardy, Yeats, Frost, Stein, Eliot, Williams, Moore, Johnson, Pound, H.D., and Stevens, as well as selections from Wordsworth, Whitman, and Dickinson. First half of two-course sequence; second half optional. Credit 3 units.

A&S TH FA Lit

E Lit 4472. Modern Poetry II: Post-Modernisms

American and British poetry from 1930 to the present. Readings include Stevens, Riding, Crane,

Zukofsky, Bunting, Auden, Brooks, Olson, Bishop, Merrill, Ashbery, Hill, Ammons, Rich, Wright and Howe. Prerequisite: E Lit 4471 or permission of instructor. Credit 3 units.

A&S TH FA Lit

E Lit 4485. Topics in Irish Literature I

Topics course in Irish literature. Credit 3 units.

A&S TH

E Lit 449. 20th-Century Irish Poetry

Credit 3 units.

A&S TH FA Lit

E Lit 4491. Theories of Cultural Studies: Cultural Patriarchy: Literature and Politics from A. Marvell to J. Locke

Same as LH 4653.

A&S TH FA SSP

E Lit 4492. The Irish Literary Revival

The class studies major writings by Oscar Wilde, W. B. Yeats, J. M. Synge, James Joyce, and Flannery O'Brien within the contexts of the language movement, colonialism, cultural nationalism, the socialist movement and the 1913 Lockout, the Easter Rising and the War for Independence, the Civil War, the founding of the Irish Free State, the Partition, and the Irish Theocracy. Wilde's notions of the primacy of art with regard to politics and their elaboration by W. I. Thompson and Declan Kiberd is an organizing principle in the course. The class members see two films, offer oral reports, and write papers. Credit 3 units.

A&S TH

E Lit 450. American Film Genres

Same as Film 450.

A&S TH FA Lit

E Lit 4502. Topics in Film and Media Studies

Same as Film 458.

A&S TH

E Lit 4503. Hollywood Film Genres, 1950s/1990s

E Lit 4533. Seminar: Tennessee Williams

Same as Drama 453.

A&S TH FA Lit

E Lit 455. English Novel of the 18th Century

Same as WGS 4550.

Prose fiction by such writers as Defoe, Richardson, Fielding, Smollett, and Sterne. Credit 3 units.

A&S TH FA Lit

E Lit 4551. English Novel of the 18th Century

Variable topics, such as Women and the Rise of the Novel, Daniel Defoe and the Problem of the Modern, The Bastard in the 18th-Century Novel. Credit 3 units.

A&S TH

E Lit 456. English Novel of the 19th Century

Same as E Lit 456.

Prose fiction by such writers as Jane Austen, Dickens, Thackeray, George Eliot, the Brontës, and Hardy. Credit 3 units.

A&S TH FA Lit

E Lit 458. The Modern Novel

Content and craft in the varying modes of the American, British, and continental modern novel by such writers as James, Joyce, Lawrence, Faulkner, Kafka, Mann, Gide, Camus. Credit 3 units.

A&S TH FA Lit

E Lit 4581. Modern British Novel

A selection of books by some of the major 20th-century figures: Henry James, Samuel Butler, Joseph Conrad, James Joyce, D. H. Lawrence, Virginia Woolf, E. M. Forster, Elizabeth Bowen, Graham Greene, Christopher Isherwood, Sybille Bedford, V. S. Naipaul, William Trevor, and Kazuo Ishiguro. Credit 3 units.

A&S TH FA Lit

E Lit 4582. The North American Novel, 1945 to the Present

Credit 3 units.

A&S TH FA Lit

E Lit 4583. British Fiction after Modernism

Course attempts to identify characteristics of British postmodern fiction: experimental novels of the 1970s and 1980s — works by, for example, John Fowles, Alasdair Gray, and Martin Amis; the “devolution” of British fiction into its constituent Scottish and English strands in the 1980s and 1990s, as well as its simultaneous globalizing as diasporic novelists wrote from Britain about “home.” Younger writers, in frequently provocative ways, address the questions of nation, place, class, and sexual identity that have dominated the post-war period. Credit 3 units.

A&S TH

E Lit 4584. Contemporary Fiction

Credit 3 units.

A&S TH

E Lit 4591. The Modern European Novel

Credit 3 units.

A&S TH FA Lit

E Lit 4601. The Shaping of Modern Literature

Same as AMCS 432, LH 452.

Themes and major figures associated with the shaping of the modern literary imagination, including such topics as Freudian and Jungian versions of the self, phenomenological thought, the symbolist imagination, and such masters as Hegel, Kafka, Kierkegaard, William and Henry James. Topics vary each semester; consult Course Listings. Credit 3 units.

A&S TH FA Lit

E Lit 461. Topics in English Literature I

Same as Comp Lit 4610, LH 466, Art-Arch 462, Med-Ren 4612, Med-Ren 4613.

Studies in special subjects, e.g., allegory and symbolism in the medieval period, the sonnet in English literature, English poetry, and politics. Consult *Course Listings*. Credit 3 units.

A&S TH FA Lit

E Lit 462. Topics in English Literature II

Same as Med-Ren 462, WGS 462, Med-Ren 320C.

Variable topics, such as Travel and Colonization in the Renaissance; Renaissance Skepticism and the Literature of Doubt. Credit 3 units.

A&S SD TH FA Lit

E Lit 463. American Culture Traditions, Methods, Visions

Same as AMCS 475.

A&S TH

E Lit 4631. Topics in English Literature and History: The 17th Century

Same as LH 4661, History 4631.

Variable topics, such as Writing, Politics, and Society in Revolutionary England, Life Writing and Literature in Early Modern England. Credit 3 units.

A&S TH FA Lit

E Lit 4642. Advanced Seminar in Literature and History

Same as LH 469.

A&S TH FA Lit

E Lit 4651. Topics in European Literature and History:

The course gives equal time to historical and textual approaches, fiction and nonfiction, lecture and discussion, and is organized around the following rubrics: Worlds we have lost, the permanent crisis; aesthetic and spiritual, totalitarianism and resistance, and post-communism and post-modernism. Such writers as Gibbon, Nietzsche, Kafka, Schultz, Krudy, Cioran, Hasek, Dery, Freud, Gom-

browicz, Illyes, Wat, Schorske, and Enzenberger.
Credit 3 units.

A&S TH FA Lit

E Lit 4653. Banned Books

Credit 3 units.

A&S TH FA Lit

E Lit 466. Seminar in Theory and Methods

Same as Hum 405.

A&S TH

E Lit 4681. Topics in English Literature and History

Same as History 4681.

E Lit 469. Theory and Methods

Same as Hum 405.

A&S TH

E Lit 4693. Topics in European Literature and History

Credit 3 units.

A&S TH FA Lit

E Lit 4701. Topics in World Literature and History

Credit 3 units.

A&S TH FA Lit

E Lit 4702. Topics in World Literature and History

Credit 3 units.

A&S TH FA Lit

E Lit 472. History of the English Language

Same as Ling 472, PNP 472, Med-Ren 472.

Concepts and methods of linguistic study: comparative, historical, and descriptive. Application of methods to selected problems in the history of English. Contrastive analysis of excerpts from Old, Middle, and later English; sounds, meanings, syntax, and styles. Credit 3 units.

A&S LA FA Lit

E Lit 475. Intellectual History of Feminism

Same as WGS 475.

A&S TH FA Lit

E Lit 4751. American Culture: Traditions, Methods, and Visions

E Lit 476. Feminist Literary Theory

Same as WGS 419.

A&S TH

E Lit 478. The Craft of Fiction

A literature/creative writing hybrid course concentrating on the element of dialogue in fiction, reading novels and stories that use dialogue in radical ways, including works by Don DeLillo, Henry Green, Zora Neale Hurston, Grace Paley, and Philip Roth. Credit 3 units.

A&S LA FA Lit

E Lit 479. The Art and Craft of Poetry

An examination of poetry from its beginnings in English to the present day considering the relationship between earlier traditions and the manifestations of those traditions in contemporary poetry. Issues such as image, metaphor and the employment of it, notions of vision, the extent to which vision can spring from the intersection of art and craft. Study of prosody, reading poems that exemplify the successful use of prosodic technique, and trying our own hands at those techniques as well. Credit 3 units.

A&S LA FA Lit

E Lit 4801. Screenwriting

Same as Drama 480.

A&S LA

E Lit 481. Selected English Writers I

Concentrated study of one or two major English writers, e.g., Spenser, Dickens, Blake, Yeats. Consult Course Listings. Credit 3 units.

A&S TH FA Lit

E Lit 482. Selected English Writers II

Concentrated study of one or two major English writers, e.g., Spenser, Dickens, Blake, Yeats. Consult Course Listings. Credit 3 units.

A&S TH FA Lit

E Lit 483. Selected American Writers I

Same as AMCS 483.

Concentrated study of one or two major American writers, e.g., Gertrude Stein and Richard Wright; Emily Dickinson. Consult *Course Listings* each semester for specific authors. Credit 3 units.

A&S TH FA Lit

E Lit 484. Selected American Writers II

Credit 3 units.

A&S TH FA Lit

E Lit 490. Culture Industry: The Politics of Distraction

E Lit 491. Chaucer

Same as Med-Ren 491, LH 498.

Readings in the *Canterbury Tales*. Lectures on background; critical analysis. Credit 3 units.

A&S TH FA Lit

E Lit 493. Spenser

Same as Med-Ren 493.

Readings in the *Faerie Queene* and *Shepherd's Calendar*, with attention to Spenser's deliberate fashioning of a literary career. Credit 3 units.

A&S TH FA Lit

E Lit 494. Milton

Same as MLA 4941, LH 468, Med-Ren 494.

Major poems and prose works in relation to literary and intellectual currents of the 17th century. Credit 3 units.

A&S TH FA Lit

E Lit 495. Milton and Early Modern Poetry

Two-course sequence on Milton and his various contexts. Credit 3 units.

A&S LA

E Lit 496. Shakespeare Advanced Course

Same as Med-Ren 496, LH 495, Drama 496.

A study of Shakespeare's career as a dramatist, with intensive work on particular plays in the light of critical traditions. Prerequisite: E Lit 395C, or permission of instructor. Credit 3 units.

A&S TH FA Lit

E Lit 4969. Shakespeare in Production

Same as Drama 469.

A&S LA

E Lit 498. The Spenser Lab

This course involves graduate and undergraduate students in the ongoing work of the Spenser Project, an inter-institutional effort to produce a traditional print edition of the *Complete Works of Edmund Spenser*. Credit 3 units.

A&S TH

E Lit 498W. The Spenser Lab

In this writing-intensive course, the students are given a variety of writing tasks: writing commentaries, introductions, software manuals, grant proposals, software requirements, and design documents (SRDDs). Credit 4 units.

A&S TH WI

E Lit 500. Independent Study

Prerequisite: junior or senior standing. (First-year students or sophomores may apply for independent study under General Studies 200.) A detailed prospectus approved by a faculty member who has agreed to supervise the student's work must be approved by the director of undergraduate studies. Credit variable, maximum 6 units.

E Lit 5001. Honors Thesis Tutorial

For students writing a Senior Honors thesis. May be taken fall and spring semesters of the senior year. Prerequisite: E Lit 398. Credit variable, maximum 6 units.

Environmental Studies

Director

Jan P. Amend, Associate Professor
(Earth and Planetary Sciences)
Ph.D., University of California—Berkeley

Associate Director

Tiffany Knight, Assistant Professor
(Biology)
Ph.D., University of Pittsburg

Endowed Professors

Raymond E. Arvidson
James S. McDonnell Distinguished
University Professor
(Earth and Planetary Sciences)
Ph.D., Brown University

Pratim Briswas

Stifel and Quinette Jens Professor of
Environmental Engineering
(Environmental Engineering)
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Milorad (Mike) Duduković

Laura and William Jens Professor (Chemical
Engineering)
(Chemical Engineering)
Ph.D., Illinois Institute of Technology,
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Edward S. Macias

Barbara and David Thomas
Distinguished Professor
(Chemistry)
Ph.D., Massachusetts Institute of Technology

Robert Pollak

Hernreich Distinguished Professor of
Economics
(Economics)
Ph.D., MIT

Barbara A. Schaal

Spencer T. Olin Professor in Arts & Sciences
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Ph.D., Yale University

Alan R. Templeton

Charles Rebstock Professor
(Biology)
Ph.D., University of Michigan

Professors

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Ph.D., California Institute of Technology

Willem H. Dickhoff

(Physics)
Ph.D., Free University, Amsterdam

Robert F. Dymek

(Earth and Planetary Sciences)
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M. Bruce Fegley

(Earth and Planetary Sciences)
Ph.D., Massachusetts Institute of Technology

T. R. Kidder

(Anthropology)
Ph.D., Harvard University

Maxine I. Lipeles

(Law, Interdisciplinary Environmental Clinic)

J.D., Harvard University

Jonathan B. Losos

(Biology)

Ph.D., University of California–Berkeley

William R. Lowry

(Political Science)

Ph.D., Stanford University

Jill D. Pasteris

(Earth and Planetary Sciences)

Ph.D., Yale University

Bruce Petersen

(Economics)

Ph.D., Harvard University

D. Tab Rasmussen

(Physical Anthropology)

Ph.D., Duke University

Glenn D. Stone

(Anthropology)

Ph.D., University of Arizona

Robert W. Sussman

(Anthropology)

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(Environmental Engineering)

Ph.D., University of California-Davis

Jon M. Chase

(Biology)

Ph.D., University of Chicago

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(Philosophy)

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(Philosophy)

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Ph.D., California Institute of Technology

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Ph.D., Washington University

Jennifer R. Smith

(Earth and Planetary Sciences)

Ph.D., University of Pennsylvania

Joshua B. Smith

(Earth and Planetary Sciences)

Ph.D., University of Pennsylvania

Jane Wolff

(Architecture)

MLA, Harvard University

Brian Wrenn

(Civil Engineering)

Ph.D., University of Illinois

Professor Emeritus**Owen J. Sexton**

(Biology)

Ph.D., University of Michigan

Additional Faculty**Beth Martin**

(Engineering and Science Director)

M.S., Washington University

Environmental Studies is an exciting interdisciplinary program that gives you a relevant and comprehensive look at the various systems that shape the Earth's environment. This course of study offers you the opportunity to major or minor in either environmental natural science or societal issues associated with the environment. The program's curriculum reflects the breadth of environmental studies and allows you to explore in depth the environmental connections between different fields of study.

Because this degree program was created in response to student demand and faculty interest, both play an important role in shaping the atmosphere of interdisciplinary learning. Dedicated faculty from anthropology, architecture, biology, chemistry, earth and planetary sciences, economics, environmental engineering, law, philosophy, physics, and political science participate in the program. Outside the classroom, environmentally related student groups organize outings to local areas of interest.

As a major or minor in Environmental Studies, you may participate in environmental research or fieldwork. Fieldwork has included surveying local wetlands to study the effects of flooding, investigating the biological effects of lead smelting, and using satellite imagery to study the effects of flooding in river channels. Some examples of research have included studying thermophiles from Vulcano Island, Italy, co-management of National Parks, and Green Energy in the United States. You may choose to work in field schools or conduct research in environmental policy during a year abroad. In the past, students have worked in South Africa, Australia, Costa Rica, and Kenya. Also, internships are available with local organizations and businesses, including environmental consulting firms.

With a degree in Environmental Studies, you may pursue graduate work or an academic career, work for not-for-profit organizations or for businesses in the private sector, or enter public service with the Forest Service or Justice Department.

Environmental Studies offers three differ-

ent Tracks for students to follow:

Track 1—Social Science. This track is designed to give students a broad understanding of the environment with regard to anthropology, economics, history, philosophy, and political science. Students must complete five core requirements: EnSt 294, EnSt 295, EPSc 201, a capstone experience, and one of the three following courses: EnSt/Anthro 361, EnSt/Pol Sci 332, or CE/EnSt 461.

In addition to the five core requirements, students must also complete three of the following: Either of the courses not taken in the core requirements (Anthro 361, Pol Sci 332, or CE/EnSt 461) or Anthro 3322, Anthro 3612, Econ 103, Econ 451, Pathfinder 201 and 202, or EnSt 335/Phil 235F.

Students must also complete two more electives from a select list.

Track 2—Geoscience. This track is for students interested in Earth surface processes, including global elemental cycling, land use, aqueous geochemistry, geobiology, paleoenvironmental processes, and climate change. Students must complete nine core requirements: EnSt 294, EnSt 295, EPSc 201, EPSc 323, EPSc 352, Math 131, Math 132, Chem 111, Chem 112, a capstone experience, and one of the three following courses: EnSt/Anthro 361, EnSt/Pol Sci 332, or EnSt 461.

In addition to the nine core requirements, students must also complete an additional six electives from a select list.

Track 3—Biology/Ecology: This track provides students with a strong background in biology and ecology, with emphasis on evolution, genetics, botany, population, and behavior. Students must complete nine core requirements: EnSt 294, EnSt 295, EnSt 370, Biol 381, EPSc 201, Math 131, Math 132, Chem 111, Chem 112, a capstone experience, and one of the three following courses: EnSt/Anthro 361, EnSt/Pol Sci 332, or EnSt 461.

In addition to the nine core requirements, students must also complete an additional seven electives from a select list.

Capstone Experience: The capstone experience is meant to provide students with an educational experience that cuts across course work and allows them to integrate and synthesize the knowledge they have gained as an Environmental Studies major. It is a requirement that applies to all tracks within the major. The capstone requirement can be met by completing one of the following: Senior Honors Thesis (EnSt 498, 499), Interdisciplinary Environmental Clinic (EnSt 539), Seminar in Biodiversity Conservation (EnSt 491), Behavioral Research at the Zoo (Anthro 434), Independent Study (EnSt 390), Independent research activity/project (EnSt 391), Nonpaying summer research project and associated report (EnSt 392), or a Directed Internship (EnSt 300). Students may also propose an alternative course of study to fulfill the capstone.

*Students in the Natural Science track may substitute any course from the Social Science track for one elective in the requirements listed above.

†Students in the Social Science track may substitute any course from the Natural Science track for one elective in the requirements listed above.

Students can design their own major. Due to the diversity of topics in Environmental Studies, we realize that there may be some students who have an interest in the environment that is not properly covered by the approved curriculum. Therefore, students may propose their own track instead of working on the set requirements. Such tracks must propose a rigorous course of study that has a consistent theme that provides a depth of understanding in an area of environmental studies. Examples of appropriate tracks might be “Global Climate Change,” “Behavioral Science and the Environment,” or “Paleobiology.” Proposed tracks that sample broadly across Environmental Studies but without depth will not be approved. Students should identify and work with a sponsor to develop a track. Proposed tracks must be approved by the sponsor and the program director.

The Minor: Students planning to minor in Environmental Studies must take the following courses: EnSt 294, EnSt 295, EPSc 201, and one of the three following courses: EnSt/Anthro 361, EnSt/Pol Sci 332 or CE/EnSt 461, plus one elective from the following list: Anthro 3322, 3612, Econ 451, EnSt/History 3003, EnSt 335/Phil 235F, EnSt 370, Biol 381, EPSc 323, EPSc 352, or one of the courses not take above (EnSt/Anthro 361, EnSt/Pol Sci 332, or CE/EnSt 461).

Undergraduate Courses

EnSt 109A. Quantitative Reasoning in Environmental Science

Same as EPSc 109A.

A&S NS QA FA NSM

EnSt 110. Introduction to Environmental Studies

This course offers an overview of topics and disciplines needed to understand the environmental issues and challenges of today’s world. The course will integrate aspects of biology, earth science, and policy. Specific topics will include preserving biodiversity, nature preserve management, human population growth, energy, pollution, and sustainability. For non-Environmental Studies majors. Credit 3 units.

A&S NS

EnSt 125. The Dinosaurs: “Facts” and Fictions

Same as EPSc 125.

A&S NS

EnSt 181. Lectures in Environmental Studies

A survey of current environmental issues, including global warming, ozone depletion, degradation of groundwater quality, declining biodiversity, deforestation and conservation policy, and environmental law, among many others. At each meeting a member of the environmental studies program faculty or professionals working in environmental fields summarize that week’s topic and lead the discussion based on a variety of source material. Students are expected to attend all lectures and take part in the discussions. Credit/No Credit only. Credit 1 unit.

A&S NS

EnSt 201. Earth and the Environment

Same as EPSc 201.

A&S NS

EnSt 209. Design Process

Same as Arch 209.

EnSt 220. Environmental Science

Same as EPSc 220.

A&S NS FA NSM

EnSt 221A. Human Use of the Earth

Same as EPSc 221A.

A&S NS FA NSM

EnSt 272A. Physics and Society

Same as Physics 171A.

A&S NS QA FA NSM

EnSt 294. Introduction to Environmental Studies: Social Sciences

Introduction to interdisciplinary environmental study in the social sciences and humanities. Topics include: differing interpretations of “nature” and “environment”; contrasting understandings of relationships between humans and their environments; key concepts in environmental studies such as “sustainable development” and “the precautionary principle”; different conceptions of , and objections to, environmentalism. These ideas and debates will be explored in the context of important current environmental controversies. No prerequisites Credit 3 units.

A&S SS

EnSt 295. Introduction to Environmental Studies: Biology

Same as Biol 295.

A broad and integrative overview of biological aspects of environmental science focusing primarily on ecology, including behavioral, population, community, and ecosystem ecology; animal behavior; and conservation biology. Credit 3 units.

A&S NS

EnSt 300. Environmental Internship

Internship with an environmental organization (commercial, not-for-profit, governmental, etc.) where the primary objective is to obtain professional experience outside of the classroom. Student must have a faculty sponsor, and must file a Learning Agreement with The Career Center, the faculty sponsor, and the site supervisor. A final written project is to be agreed upon between the student and faculty sponsor before work begins, and will be evaluated by the faculty sponsor at the end of the internship. Detailed supervision of the intern is the responsibility of the site supervisor. Credit 3 units.

EnSt 3003. Critical Issues in American Environmental History

Same as History 3003.

A&S TH

EnSt 302. Urban Environmental History

Same as History 302.

A&S TH FA SSP

EnSt 3053. Nomadic Strategies and Extreme Ecologies

Same as Anthro 3053.

A&S SS

EnSt 306B. Africa: Peoples and Cultures

Same as Anthro 306B.

A&S CD SS FA SSP

EnSt 318. Development of the North American Landscape

Same as EPSc 318.

A&S NS FA NSM

EnSt 323. Biogeochemistry

Same as EPSc 323.

A&S NS FA NSM

EnSt 332. Environmental and Energy Issues

Same as Pol Sci 332B.

A&S SS FA SSP

EnSt 3322. Brave New Crops

Same as Anthro 3322.

A&S SS FA NSM

EnSt 335F. Introduction to Environmental Ethics

Same as Phil 235F.

A&S TH FA SSP

EnSt 345. Pollution Abatement and Waste Minimization

Same as ChE 345.

EnSt 352A. Waste and Wastewater Treatment

Same as CE 352A.

EnSt 361. Culture and Environment

Same as Anthro 361.

A&S SS FA SSP

EnSt 370. Biological Conservation

Conservation biology is a science born out of the current extinction crisis. This course examines the causes of the decline of biodiversity across the planet, including social, economic, and political, as well as biological, issues. Biological implications of this loss are discussed, as are the ways in which further degradation of the ecological systems on Earth can be prevented. Specific topics include habitat and endangered species management, conservation genetics, reserve design, environmental law, and the history of the conservation movement. Prerequisites: EnSt 295 (preferred), Biol 2970 or consent of instructor. Credit 3 units.

A&S NS

EnSt 372. Behavioral Ecology

Same as Biol 372.

A&S NS FA NSM

EnSt 373. Behavioral Ecology Lab

Laboratory/field course exploring topics in animal behavior and ecology. The primary goal of this course is to introduce students to experimental and observational techniques commonly used in studies of organisms and their environment. Methods studied will include measures of population abundance, spatial dynamics, foraging behavior, and community structure. Much of this course will take place in the field. Students should be prepared for the possibility of cold and/or inclement weather. Credit 2 units.

A&S NS

EnSt 379. Feast or Famine: Archaeology and Climate Change

Same as Anthro 379.

A&S SS

EnSt 3793. Mississippi River Basin: Past, Present, and Future

Same as Anthro 3793.

A&S SS

EnSt 381. Introduction to Ecology

Same as Biol 381.

A&S NS

EnSt 390. Independent Study

Independent study for undergraduates, to be supervised by a faculty member. Prerequisite: permission of instructor. Credit variable, maximum 6 units.

EnSt 3901. Environmental Ethics Writing

EnSt 391. Directed Research in Environmental Studies

Research activities or project in environmental studies done under the direction of an instructor in the Program. Permission of an instructor and of the chair of the program is required. Credit variable, maximum 6 units.

EnSt 392. Directed Fieldwork in Environmental Studies

Fieldwork carried out under the direction or supervision of an instructor in the program. Permission of an instructor and of the chair of the program is required. Credit variable, maximum 6 units.

EnSt 408. Earth's Atmosphere and Global Climate

Same as EPSc 408.
A&S NS FA NSM

EnSt 4170. Population Ecology

Same as Biol 4170.
A&S NS

EnSt 419. Ecology

Same as Biol 419.
A&S NS FA NSM

EnSt 4193. Experimental Ecology Laboratory

Same as Biol 4193.
A&S NS

EnSt 424. Topics in American Literature I, II

Same as E Lit 424.
A&S TH FA Lit

EnSt 428. Hydrology

Same as EPSc 428.
A&S NS FA NSM

EnSt 430. Ecological Anthropology

Same as Anthro 4281.
A&S SS FA SSP

EnSt 432. Environmental Mineralogy

Same as EPSc 430.
A&S NS FA NSM

EnSt 437. Environmental Risk Assessment

Same as ChE 438.

EnSt 443. Environmental Chemistry

Same as ChE 443.

EnSt 444. Environmental Geochemistry

Same as EPSc 444.
A&S NS FA NSM

EnSt 447. Analytical Methods in Environmental Geochemistry

Same as EPSc 447.
A&S NS FA NSM

EnSt 448A. Combustion and Environment

Same as E67 MAE 448A.

EnSt 4491. Microbes in the Environment

Same as EPSc 449.
A&S NS

EnSt 451. Environmental Policy

Same as Econ 451.
A&S SS FA SSP

EnSt 455. Metropolitan Landscapes

Same as ARCH 654D.

EnSt 461. Introduction to Environmental Law and Policy

Same as AMCS 461.

Survey of the most prominent federal laws governing environmental compliance and pollution control. Examines laws applicable to environmental impact statements, air pollution, water pollution, and hazardous waste. Addresses policy concerning the relative merits of using technological capabilities as compared with health risks in setting environmental standards. Discusses the need for environmental regulation to protect societal resources. Credit 3 units.

A&S SS

EnSt 464. Hybrid Landscapes: Ecology, Infrastructure, and Cultural Expression

Same as ARCH 564H.

EnSt 479. Climate, Culture, and Human History

Same as Anthro 479.
A&S NS FA SSP

EnSt 480. Special Topics in Microbiology-Chemistry-Earth Science

Same as EPSc 480.
A&S NS

EnSt 491. Seminar in Biodiversity Conservation

This discussion course examines the interplay of science, public policy, and economics as they relate to the conservation of biological diversity. Through an in-depth exploration of case studies, the course will provide an opportunity for students with diverse backgrounds to communicate across interdisciplinary boundaries, including ideas from anthropology, biology, earth sciences, economics, philosophy, and political science. Students will read primary literature and develop skills for critically evaluating the bases of opposing viewpoints. Students will work in small groups to present and argue these views in class. Course meets once each week for two hours. Evaluation is based on participation in discussion, short summary papers of case studies, and a term paper. Fulfills Capstone requirement for EnSt majors. Prerequisites: Seniors in Environmental Studies or Biology. Credit 3 units.

A&S NS

EnSt 495. Environmental Writing

Same as AMCS 495.

The goals of this course are to promote ecological literacy by studying some of the most influential texts of the modern environmental movement. The course is interdisciplinary, discussing readings from the perspectives of the American literary tradition, rhetoric, science, and public policy. The course also offers practice in persuasive environmental writing through a formal study of an environmental predicament and solution in report form as well as participation in oral and written debates on key environmental questions. Students will become more skilled with various types of environmental writing and they will have the opportunity to revise that writing throughout the semester. Prerequisite: Junior or Senior standing. Those outside of Environmental Studies and Earth and Planetary Sciences need permission of instructor. Credit 3 units.

A&S WI

EnSt 498. Senior Honors Research

Independent research for undergraduate Honors, to be supervised by a faculty member. Prerequisites: senior standing, eligibility for Honors, and permission of instructor. Credit 3 units.

EnSt 4980. Undergraduate Research Seminar

Same as EPSc 498.

A&S NS WI FA NSM

EnSt 499. Senior Honors

Independent work for undergraduate Honors, to be supervised by a faculty member. Prerequisites: senior standing, eligibility for Honors, and permission of instructor. Credit 3 units.

EnSt 539. Interdisciplinary Environmental Clinic

Same as Env 539, CE 539.

This course constitutes the technical component of an interdisciplinary environmental clinic based at the Law School. Engineering and environmental studies students will participate in interdisciplinary teams with law students, handling environmental projects for public interest, environmental or community organizations or individuals. Projects may involve the following activities: representing clients in state and local administrative proceedings; supporting litigation filed by non-clinic counsel; drafting proposed legislation; commenting on proposed regulations, permits, environmental impact statements or environmental assessments, and similar documents; and evaluating matters for potential future action. The goal is that for each project, students will have primary responsibility for handling the matter, and faculty will play a secondary, supervisory role. Engineering and environmental studies students may provide such technical support as investigating unknown facts, evaluating facts presented by other parties (such as in government reports), and working with law students to develop and present facts relevant to an understanding of and resolution of the matter. Engineering and environmental studies students must work at least an average of 12 hours per week on clinic matters, including attendance at and participation each week in at least one individual meeting with the professor; one group meeting involving the student team assigned to each project and the professor(s); and a two-hour seminar for all students in the clinic. (Engineering and environmental studies students will be excused from, but are still welcome at, specified seminar sessions focusing primarily on legal issues.) Prerequisites: CE262, or ChE 443, or EPSc 323 and permission of instructor. Credit variable, maximum 6 units.

A&S SS

European Studies

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Professors Emeriti

Elyane Dezon-Jones

(Romance Languages and Literatures) Doctorat de 3e Cycle, University of Paris

Charles L. Leven

(Economics) Ph.D., Northwestern University

Jerome P. Schiller

(Philosophy) Ph.D., Harvard University

If you have an interest in a broadly interdisciplinary perspective on the cultures, histories, politics, and economics of modern Europe (1750–present), you may major in International and Area Studies (IAS) with a concentration in European Studies. Given the importance of Europe to the United States, both historically and in the contemporary period, the relevant course work for this concentration is found across a wide range of social science and humanities departments at Washington University. We offer advanced course work in most major European languages (including French, German, Italian, Russian, and Spanish) as well as study abroad opportunities in all these languages.

For the requirements for a major in International and Area Studies with a European Studies concentration, please refer to International and Area Studies.

Undergraduate Courses

EuSt 3093. Politics of the European Union

Same as Pol Sci 3093.

A&S SS

EuSt 3131. Russian Politics

Same as Pol Sci 3131.

A&S SS **FA** SSP

EuSt 3210. Scandinavian Film—Nordic Light

Same as Film 321.

A&S CD TH **FA** AH

EuSt 3250. French Film Culture

Same as Film 325.

A&S TH

EuSt 3253. Democratic Politics in Eastern and Central Europe

Same as Pol Sci 3253.

A&S SS **FA** SSP

- EuSt 328. History of German Cinema**
Same as Film 328.
A&S TH
- EuSt 3316. Masterpieces of 19th-Century Russian Literature**
Same as Russ 331C.
A&S SD TH FA Lit
- EuSt 332. Topics in Film Studies: Italian Cinema**
Same as Ital 332.
A&S TH FA AH Lit
- EuSt 333. Economics of the European Union**
Same as Econ 333.
A&S SS
- EuSt 3331. The Holocaust: the Experience of European Jewry**
Same as History 333.
A&S SD TH FA SSP
- EuSt 335. Topics in Italian Cinema: Pier Apollo Pasolini: Ideology, Sexuality, Representation**
Same as Ital 334.
A&S TH FA AH
- EuSt 3350. The Jews in the Modern World**
Same as History 335C.
A&S CD TH FA SSP
- EuSt 3390. 20th-Century Russian Literature and Culture**
Same as Ruses 339C.
A&S CD TH FA Lit
- EuSt 340. History of World Cinema**
Same as Film 340.
A&S CD TH FA AH
- EuSt 3400. German Literature and the Modern Era**
Same as German 340C.
A&S CD TH FA Lit
- EuSt 344. Introduction to European Studies**
Same as IAS 344.
A&S CD TH
- EuSt 348. Europe in the Age of Imperialism: 1870–1940**
Same as History 348.
A&S TH FA SP
- EuSt 349. Europe in the 20th Century: 1914–1945**
Same as History 349.
A&S TH FA SP
- EuSt 3491. Europe in the 20th Century: 1945–2000**
Same as History 3491.
A&S TH FA SP
- EuSt 3500. The 19th-Century Russian Novel**
Same as Russ 350C.
A&S SD TH WI FA Lit
- EuSt 355. 20th-Century Britain**
Same as History 355.
A&S TH FA SSP
- EuSt 3552. Modern France since 1870**
Same as History 3552.
A&S TH FA SSP
- EuSt 3553. French Revolution and Napoleon**
Same as History 3553.
A&S TH FA SSP
- EuSt 356. 20th-Century Russian History**
Same as History 356C.
A&S TH FA SSP
- EuSt 3598. The First World War and the Making of Modern Europe**
Same as History 3598.
A&S TH FA SSP
- EuSt 359C. Topics in European History: Women in Modern European History, 1700–2000**
Same as History 359.
A&S CD TH FA SSP
- EuSt 362. Introduction to Russian Civilization**
Same as IAS 362.
A&S TH
- EuSt 366. Women in Film: From the Silent Feminists to Thelma and Louise**
Same as Film 366.
A&S SD TH
- EuSt 375. Screening the Holocaust**
Same as Film 375.
A&S TH FA AH
- EuSt 3750. Topics in Russian Culture**
Same as IAS 3750.
A&S TH WI
- EuSt 377. International Political Economy**
Same as Econ 377.
A&S SS FA SSP
- EuSt 3833. Realism and Impressionism**
Same as Art-Arch 3833.
A&S TH FA AH
- EuSt 3838. Modern Art in Fin-de-Siècle Europe, 1880–1907**
Same as Art-Arch 3838.
A&S TH WI FA AH
- EuSt 3872. The History of Modern Britain**
Same as History 3872.
A&S TH FA SSP
- EuSt 3874. An Embarrassment of Riches: 19th-Century Britain**
Same as History 3874.
A&S TH FA SSP
- EuSt 3878. Britain and Ireland from 1688 to 1870**
Same as History 3878.
A&S TH FA SSP
- EuSt 399. To Russia and Return: Travel, Literature, and History**
Same as History 39X9.
A&S TH WI
- EuSt 404. Germany Today**
Same as German 404.
A&S CD TH FA SSP
- EuSt 4156. Europe and the Second World War**
Same as History 4156.
A&S TH
- EuSt 418. Victorian Literature 1830–1890**
Same as E Lit 418.
A&S TH FA Lit
- EuSt 4271. Topics in Comparative Politics**
Same as Pol Sci 4271.
A&S SS WI FA SSP
- EuSt 428. Topics in Comparative Politics: Separatist Politics**
Same as Pol Sci 428.
A&S SS WI
- EuSt 4280. The New Sicilian School**
Same as Ital 428.
A&S TH FA Lit
- EuSt 432. Divergent Voices: 20th-Century Italian Women Writers**
Same as Ital 432.
A&S SD TH WI FA Lit
- EuSt 433. Literature of the Italian Enlightenment**
Same as Ital 433.
A&S TH WI FA Lit
- EuSt 4353. The Political Economy of the European Union**
Same as Pol Sci 4353.
A&S SS FA SSP
- EuSt 437. Cafe, Cadavers, Comedy, and Castrate: Italy and the Age of the Grand Tour**
Same as Ital 437.
- EuSt 4412. The British Empire in Cross-Cultural Perspective: 1800–1970**
Same as History 4412.
A&S TH FA SSP
- EuSt 442. European Intellectual History: 1789–1890**
Same as History 442.
A&S TH FA SSP
- EuSt 443. European Intellectual History: 1890–1930**
Same as History 443.
A&S TH FA SSP
- EuSt 4432. Politics of Post-Soviet Countries (Commonwealth of Independent States)**
Same as Pol Sci 4432.
A&S SS FA SSP
- EuSt 444. European Intellectual History: 1930–2000**
Same as History 444.
A&S TH FA SSP
- EuSt 4442. The Jewish Experience in Eastern Europe**
Same as History 4442.
A&S CD TH FA SSP
- EuSt 4443. Jews and the City: Urban Dimensions of Modern Jewish Experience**
Same as History 4443.
A&S CD TH
- EuSt 4446. European Social History: 1750–1930**
Same as History 4446.
A&S TH
- EuSt 449. Imperial Russia**
Same as History 449C.
A&S TH FA SSP
- EuSt 458. Major Film Directors**
Same as Film 458.
A&S TH
- EuSt 4580. British History: Beyond the Beatles—Britain in the 1960s**
Same as History 4580.
A&S TH
- EuSt 4816. Art and Culture in Fin-de-Siècle Europe**
Same as Art-Arch 4816.
A&S TH FA AH
- EuSt 491. Postmodernism**
Same as Ital 491.
A&S TH WI
- EuSt 492. The Italian Detective Novel**
Same as Ital 492.
A&S TH WI FA Lit

EuSt 4930. Advanced Seminar in History: The Transformation of Western European Societies: 1960–1990*Same as History 4930.***A&S** TH**EuSt 4934. Advanced Seminar in History: The British Empire in Cross-Cultural Perspective: 1800–1970***Same as History 4934.***A&S** TH **FA** SP**EuSt 4968. Advanced Seminar in History: War, Society and Identity: the European Novel of the 1920s***Same as History 4968.***A&S** TH**EuSt 4986. Advanced Seminar in History: European History***Same as History 4986.***A&S** TH**EuSt 4988. Advanced Seminar in History: The French Revolution***Same as History 4988.***A&S** TH

Film and Media Studies

Director**Jeff Smith**, Associate Professor
Ph.D., University of Wisconsin–Madison**William Paul**, Professor
Ph.D., Columbia University**Senior Lecturers****Richard Chapman****Pier Marton**

M.F.A., University of California–Los Angeles

Shawn Shimpach

Ph.D., New York University

As our national and international cultures become increasingly dominated by visual culture, we acknowledge the need to study those forms that provide our chief sources of entertainment and information. This need speaks to our desire to become critical viewers, knowledgeable in the history of the most popular contemporary art forms and possessing the analytical skills to understand and interpret visual forms of expression.

The undergraduate major in Film and Media Studies requires you to study history and aesthetics in an attempt to understand the creative force of an individual art work, its relation to other artistic production and its place in culture. Furthermore, because film and media creations are most often produced within an industrial context, you must also study industrial and business practices.

Complementing the critical studies curriculum courses in production will provide you with an intimate understanding of the kinds of choices that film and media artists confront, further refining your ability to view critically. To explore the film and media artists' tools analytically, you need to gain the same kind of insider understanding of the tools of the trade that literature students learn by writing.

It is not the purpose of this program to train students for professional work. Students who gain skills in writing and analysis, as they should in any rigorous course of study in the humanities, can work in many professions such as journalism and publishing, business, law, medicine, social work, and teaching. Film and Media Studies majors who seek careers in the entertainment and information industries will certainly gain an intellectual perspective on these forms that should enhance their professional lives. But this major also will benefit any student looking at other possible professions because it shares the aim of a liberal arts curriculum to train you in rigorous analytical thinking and provide you with historical knowledge.

The Major: The Film and Media Studies major aims for a sense of sequencing and comprehensiveness. It begins with a foundational course, Film 220 (Introduction to Film Studies) that trains you to analyze images for their formal and conceptual strategies. Four additional courses are required. Three

are designed to give you a historical overview of image-based media: Film 330 (History of American Cinema), Film 340 (History of World Cinema), and Film 350 (History of Electronic Media). A fourth required course, Film 420 (Film Theory), provides an overview of writings in film theory, a central part of the discourse on film, dating back to the 1910s.

On the production side, one course is required of all students: Film 230 (Moving Images and Sound), a foundational course in moving-image production that complements Film 220. Students with an interest in production may count two additional production courses toward the major, including courses in video production or courses in screenwriting.

A total of 12 credits of advanced electives (300 level or above) are required to complete the major. Electives in critical studies may be drawn from courses on individual directors, genre study, limited historical periods, study of individual crafts such as acting, and so on. You must take one elective that focuses on a national cinema other than that of the United States. (Courses on national cinemas offered in various foreign language departments are cross-listed and coordinated with courses in Film and Media Studies. Please check the course guide for cross-listings.)

The Minor: You may minor in Film and Media Studies by taking the first four critical studies courses (the introductory course plus the historical surveys of American and world cinema and the survey of broadcast media) required for the major for a total of 12 credits, plus one elective for another 3 credits, bringing the minor to 15 credits.

Undergraduate Courses

Film 110. Freshman Seminar: Race and Ethnicity on American Television*Same as AFAS 111, AMCS 111.*

This course presents a historical overview of the forms that racial and ethnic representations have taken in American television. The course attempts to chart changes in public perception of racial and ethnic difference in the context of sweeping cultural and social transformations. One of the key aims of the course is to understand how notions of American identity are produced by a consensus medium. Credit 3 units.

A&S CD SD TH **FA** SP**Film 200. Special Projects**

This course is intended for freshmen and sophomores who wish to register for internships. Students must receive program approval prior to beginning the internship. Please consult the program guidelines governing internships. Credit variable, maximum 3 units.

Film 220. Introduction to Film Studies*Same as Art-Arch 220, AMCS 246.*

How do film images create meaning? What are the tools the film artist uses to create images? This course introduces students to basic techniques of film production and formal methodologies for analyzing film art. Students learn the essential components of film language—staging, camera placement, camera movement, editing, lighting, special effects, film stock, lenses—to heighten perceptual skills in viewing films and increase critical understanding of the ways films function as visual discourse. The course is foundational for the major in Film and Media Studies. Required screenings. Credit 3 units.

A&S LA

Film 230. Moving Images and Sound

This introductory video production course explores how images and sounds function as cinematic building blocks and purveyors of content. Through creative assignments involving at times personal inquiry, at other times the understanding of elementary semiotics, the components of film and video are examined. Students learn the basics of key sound and editing software to produce, outside of class time, a short video piece. This course is a prerequisite to all other Film and Media Studies video courses. Prerequisite: Film Studies 220 or consent of instructor. Credit 3 units.

A&S LA

Film 3040. Documents and Documentary in Photography and Film

Same as Art-Arch 3040.

A&S TH FA AH

Film 310. Video Production

An advanced course exploring the creative and technical aspects of video production. Students sharpen their knowledge of cameras, directing, lighting, sound recording, nonlinear systems, and narrative structures. In addition to acquiring a theoretical understanding of the production process, students gain practical experience by producing, outside of class time, a short project reflecting their visual and conceptual maturity. Prerequisite: Film 230 (Moving Images and Sound) or permission of the instructor. Credit 3 units.

A&S LA

Film 311. Documentary Production

Same as AMCS 3110.

In parallel with an overview of various documentary genres, ranging from the personal, the poetic, the agitprop, and cinema vérité, this course offers students the opportunity to produce a short documentary piece on the topic of their choosing. Aesthetic and ethical issues are explored by considering the overall methodology in terms of subjectivity, content, structure, and the possible usage of music and/or voice-over. For the sake of completing the project in time, it is recommended that students be familiar with the subject matter of their investigation before taking the course. Prerequisite: Film 230 (Moving Images and Sound) or permission of the instructor. Credit 3 units.

A&S LA

Film 315. Visual Music

Same as Music 315, AMCS 3156.

The cinema took more than 30 years to emerge with fully synchronized sounds. Since then, sound and picture have continued to be more and more integrated and interdependent. Current music video artists like Michel Gondry and Chris Cunningham constitute only one expression of that desire to merge image and sound. Earlier, many explorers such as Oskar Fischinger, Peter Kubelka, and Norman McLaren conceived films where images and sounds surprise the viewer. In the process of producing similarly challenging 4- to 5-minute video pieces, we examine how synesthesia in the arts has functioned to energize the two media. A variety of software is explored in that context. Prerequisite: Film 230 or permission from the instructor. Credit 3 units.

Film 321. Scandinavian Cinema—Nordic Light

Same as IAS 3210, EuSt 3210.

Nordic filmmakers are famous for their longstanding use of natural lighting, their fascination with the extremes of the Nordic landscape and seasons, as well as stark examinations of moral conflict, all characterizing the work of its still dominant figure—Ingmar Bergman. In this course we approach Scandinavian cinema through the organizing principle of light, both as a stylistic convention and as a thematic element for which the Nordic cinemas are known. Starting with examples from the silent era and concluding with the Dogma films, we

view a variety of films. Discussions, readings, and papers in English. Required screenings. Credit 3 units.

A&S CD TH FA AH

Film 325. French Film Culture

Same as French 3251, EuSt 3250, IAS 3250.

Called “the seventh art,” film has a long tradition of serious popular appreciation and academic study in France. This course offers an overview of French cinema, including the origins of film (Lumière brothers, Méliès), the inventive silent period (which created such avant-garde classics as “Un chien andalou”), the poetic realism of the 1930s, the difficulties of the war years, the post-war emphasis on historical/nationalist themes in the “tradition of quality” films, the French New Wave’s attempt to create a more “cinematic” style, the effects of the political turmoil of May ’68 on film culture, the “art house” reception of French films in the United States, and the broader appeal of recent hyper-visual (“cinéma du look”) films, such as *La Femme Nikita* and *Amélie*. While the primary focus of the course is on French cinema, we also discuss the reciprocal influences between American and French film culture, both in terms of formal influences on filmmaking and theoretical approaches to film studies. French film terms are introduced but no prior knowledge of the language is expected. Required screenings. Credit 3 units.

A&S TH

Film 328. History of German Cinema

Same as IAS 3291, EuSt 328, German 328.

This course explores the major developments of German cinema throughout the 20th century. More specifically, this course engages with issues relating to German film culture’s negotiation of popular filmmaking and art cinema, of Hollywood conventions and European avant-garde sensibilities. Topics include the political functions of German film during the Weimar, the Nazi, the post-war, and the post-wall eras; the influence of American mass culture on German film; the role of German émigrés in the classical Hollywood studio system; and the place of German cinema in present-day Europe and in our contemporary age of globalization. Special attention is given to the role of German cinema in building and questioning national identity, to the ways in which German feature films over the past hundred years have used or challenged mainstream conventions to recall the national past and envision alternative futures. Films by directors such as Murnau, Lang, Fassbinder, Herzog, Tykwer, and many others. All readings and discussions in English. May not be taken for German major or minor credit. Required screenings. Credit 3 units.

A&S TH

Film 330. History of American Cinema

Same as History 3303, AMCS 3301.

This course traces the history of the American cinema from the earliest screenings in vaudeville theaters through the birth of the feature film to movies in the age of video. The course examines both the contributions of individual filmmakers as well as determinate contexts of modes of production, distribution, and exhibition. The course aims to provide an understanding of the continuing evolution of the American cinema, in its internal development, in its incorporation of new technologies, and in its responses to other national cinemas. Required screenings. Credit 3 units.

A&S TH FA AH

Film 331. The New Hollywood Cinema

Same as AMCS 3302.

This course examines the history of film culture and the film industry in the United States since the end of the classical Hollywood studio system. It pays special attention to the period of auteur-centered filmmaking in the 1970s. During this time,

the end of the production code, the financial crisis of the industry, the unparalleled influence of European New Wave and Art films, and the introduction of the first generation of film school graduates (the so-called “movie brats”) all combined amidst the tumultuous cultural politics of such movements as the counterculture, civil rights, and second wave feminism to form a film-historical moment often called the Hollywood Renaissance. This brief period was soon followed by a newly reinvigorated Hollywood industry focused on the high-concept blockbuster. Such rapid transformations in the practice and nature of American film not only continue to influence commercial filmmaking today but also continue to shape our understanding of the role of authorship, genre, and ideology within Hollywood. The course considers films of the New Hollywood in the context of tensions between radicalism and populism, progressivism and nihilism, entertainment and ideology, artistic and commercial success. Required screenings. Credit 3 units.

Film 340. History of World Cinema

Same as Comp Lit 3405, EuSt 340, IAS 3400.

The course surveys the history of cinema as it developed in nations other than the United States. Beginning with the initially dominant film producing nations of Western Europe, this course considers the development of various national cinemas in Europe, Asia, and third world countries. The course seeks to develop an understanding of each individual film both as an expression of a national culture as well as a possible response to international movements in other art forms. Throughout, the course considers how various national cinemas sought ways of dealing with the pervasiveness of Hollywood films, developing their own distinctive styles, which could in turn influence American cinema itself. Required screenings. Credit 3 units.

A&S CD TH FA AH

Film 349. Media Cultures

Same as AMCS 3490, STA 348.

This course is an introduction to the interdisciplinary field of cultural and media studies. Through a focus on television and new media, it analyzes current theoretical ideas and debates about culture. Main topics include the relationship between new technologies and everyday life and popular culture; analysis of media messages and images; how media help construct new identities and mark differences between groups; analysis of the globalization of the production and circulation of media culture; the rise of multimedia cultural industries; and the role of the audience. Required screenings. Credit 3 units.

A&S TH

Film 350. History of Electronic Media

Same as History 3853, AMCS 351.

This course traces the history of electronic media as they have become the dominant source for entertainment and information in contemporary culture, starting with over-the-air broadcasting of radio and television through to cable and the “narrowcasting” achieved by digital technologies.

While some attention is paid to other national industries, the chief focus of the course is on electronic media in the United States to determine, in part, the transformative role they have played in the cultural life of the nation. The course explores the relationship of the electronic media industries to the American film industry, determining how their interactions with the film industry helped mutually shape the productions of both film and electronic media. Required screenings. Credit 3 units.

A&S TH

Film 352. Introduction to Screenwriting

Same as E Comp 352.

Writers explore the various elements, structure, and styles used in crafting a motion picture

screenplay. They experience this process as they conceive, develop, and execute the first act of a feature-length script. Writers create a screenplay story, present an outline for class discussion and analysis, then craft Act One. Writers are encouraged to consult with the instructor at various stages: concept, outline, character and scene development, and dialogue execution. While the students fashion their screenwriting independently, the class also explores the general elements of theme, genre, and voice. A more specific examination of mechanics, the nuts and bolts of story construction, plotting, pacing, etc. follows to support the ongoing writing process. In-class exercises aid the writer in sharpening skills and discovering new approaches to form and content. Writers' work is shared and discussed regularly in class. Screening of film scenes and sequences provides students with concrete examples of how dramatic screenwriting evolves once it leaves the writer's hands. Credit 3 units.

A&S LA

Film 353. Writing Episodic Television

This class focuses on all the factors that go into preparing and writing an episode for a network TV series (dramas only). Students begin with a "pitch" (verbally or in short outline form) for an idea for a show currently on a network schedule. Once the "pitch" is accepted, the student then completes a "beat sheet," and ultimately a spec script that can run from 62 to 75 pages. Two drafts of the script are required. During the course of this process, students also learn how to research their narrative premises by contacting legal, medical, and law enforcement experts in order to guarantee the accuracy of their scripts. In addition to learning the actual writing process, students are expected to watch several television shows and to read books, scripts, and industry trade papers as they pertain to the craft and business of television writing. Finally, students meet agents, producers, directors, and other television industry professionals in order to gain their insights into the scriptwriting process and to gain a more global view of the steps involved in bringing their ideas to the screen. Credit 3 units.

A&S LA

Film 360. The History of the Film Score

Same as AMCS 360, Music 328.

Do you notice the music in a film while you are watching it? Does your skin crawl when you hear the shark motif of *Jaws* or the shower music of *Psycho*? Would *Titanic* have been so successful without Celine Dion warbling "My Heart Will Go On"? These and other questions are addressed in this survey of the history of film music. From the earliest scores of the silent era to the pop/classical hybrids of today, we look at the contributions of major composers, the influence of new musical styles, and the impact of specific economic and technological factors on film scoring. Films shown in the course include *Mildred Pierce*, *Psycho*, *American Graffiti*, *Star Wars*, and *Trainspotting*. Required screenings. Credit 3 units.

A&S TH FA AH

Film 3601. Documenting American Lives

Same as AMCS 361.

Film 361. Film Sound

Although film critics and theorists tend to think of cinema as a "visual art," this shorthand description of the medium overlooks the importance of film sound in cinematic storytelling. This course is intended to provide a general overview of the way in which film theorists have treated the issue of sound in the cinema. Among the issues addressed in the course are: the contribution sound technology and practice makes to film form; the various possible formal relationships between sound and image; the effects of sound technologies on notions of realism and verisimilitude; the importance of sound to particular genres, like the horror film;

and finally, the role of sound in film spectatorship. The course also showcases the work of the most important sound stylists in film history, such as Fritz Lang, Orson Welles, Alfred Hitchcock, Robert Altman, and David Lynch. Required screenings. Credit 3 units.

A&S TH

Film 363. Digital Video Post-Production

While post-production of the soundtrack has been around for years, post-production of the "visual track" has increasingly become a major phase in the video and movie-making process. It often allows filmmakers to enhance existing footage with potentially dazzling results. As in all our production courses, we are primarily concerned with developing strong content. The focus is not on special effects per se, but rather on how they may be used to enhance content. Projects might vary from semester to semester, but might include the production of a Public Service Announcement to be broadcast. Key post-production software like Compton and AfterEffects are explored throughout the semester. Prerequisite: Film 230 (Moving Images and Sound) or consent of instructor. Credit 3 units.

A&S LA

Film 364. Life After Broadcast: From the Screen to the Archive

Same as Film 364.

Film 366. Women in Film

Same as WGS 3666, EuSt 366, IAS 366.

The aim of this course is primarily to familiarize students with the work of prominent women directors over the course of the 20th century, from commercial blockbusters to the radical avant garde. Approaching the films in chronological order, we consider the specific historical and cultural context of each filmmaker's work. In addition we discuss the films in relation to specific gender and feminist issues such as the status of women's film genres, representations of men and women on screen, and the gender politics of film production. Required screenings. Credit 3 units.

A&S SD TH

Film 370. American Horrors

Same as AMCS 369.

Horror movies. Fright films. Scream marathons. Blood and gore fests. Why should we want to look at movies that aim to frighten us? What is the attraction of repulsion? Is there an aesthetics of ugliness? Except for some early prestige literary adaptations like *Dr. Jekyll and Mr. Hyde*, the horror film began as a low-class genre, a notch above exploitation movies. In the 1970s–'80s, it became the dominant commercial genre by offering increasingly graphic images of violence and mayhem. The horror film had arrived: lavish budgets, big stars, and dazzling special effects in mainstream major studio films competed with low-budget, no frills productions that helped establish artistically ambitious and quirky filmmakers like George Romero and David Cronenberg. By a chronological survey of the American horror film, this course explores how differing notions of what is terrifying reflect changing cultural values and norms. Throughout, we consider the difficult questions raised by horror's simple aim of scaring its audience. In addition to weekly screenings, work for the course includes analytical and theoretical essays on the horror film. Written analyses of films with a close attention to visual style are required. Prerequisite: Film 220. Required screenings. Credit 3 units.

A&S TH

Film 371. Making War

Same as AMCS 373.

This course examines the cinematic representation of war. Using World War II as a case study, students examine a series of combat pictures, documentaries, and "home front" films from the 1940s

to the present. Several key questions guide the class discussion: How do war films respond to and shape the political worlds in which they are produced? How do these films confront the aftermath of war and the soldier's homecoming? Where is the line between the home front and the front line? More broadly, what does it mean to portray the violence and suffering that war inevitably brings? At the close of the semester, students partake in an in-class symposium presenting their research on the cinematic treatment of other conflicts, from the Civil War to the *War on Terror*. Films include: *The Boat*, *Saving Private Ryan*, *The Thin Red Line*, *Why We Fight*, and *Mrs. Miniver*. Readings include works by Susan Sontag, Kaja Silverman, and W.G. Sebald. Required screenings. Credit 3 units.

A&S TH

Film 375. Screening the Holocaust

Same as IAS 375, EuSt 375, JNE 380.

The course surveys ways in which the story of the Holocaust is conveyed through film. Focusing on the individual and aesthetic pleasure, modern Western film seems to be an inappropriate genre to depict the German mass murdering of 6 million Jews. But since the broadcasting of the NBC series "Holocaust" in 1975, feature films have replaced documentaries and historiographies in educating the public about the traumas of the unprecedented genocide. With the continuing impact of the Holocaust on Jewish, American, and German identity and politics, Holocaust films are more scrutinized than any other genre. We examine these aesthetic and philosophical controversies as well as the narrative and editing strategies filmmakers use to relate collective history and individual trauma. Special attention is given to the complex cinematographic perspectives on human agency in a world of bureaucratically administered killing. In the course, we try to close the gap between reading film theory and watching a Holocaust movie: we analyze the properties of cinematic language, reconstruct the socio-historical and psychological formation of memory and imagination, and even question our own evaluation of a film. Screenings include *Shoah*, *The Wannsee Conference*; *Europa*; *Europa*; *Enemies*, *a Love Story*; *Jakob the Liar*; *Schindler's List*; and *Life Is Beautiful*. Required screenings. Credit 3 units.

A&S TH FA AH

Film 420. Film Theory

Same as E Lit 4204, Comp Lit 4204.

This course is an introduction to both classical and contemporary film theory. Beginning with the earliest attempts to treat cinema as a new and unique art form, the course initially reviews the various ways in which film theory attempted to define cinema in terms of its most essential properties. The course then examines more contemporary developments within film theory, more specifically its attempt to incorporate the insights of other critical and analytical paradigms, such as semiotics, psychoanalysis, feminism, queer theory, and postmodernism. Throughout the course, we consider questions regarding the ontology of cinema, its relation to spectators, and the various ways in which its formal properties create meaning. Readings for the course include the major works of Sergei Eisenstein, Andre Bazin, Christian Metz, Laura Mulvey, and Fredric Jameson. Required screenings. Credit 3 units.

A&S TH WI FA Lit

Film 421. Film Historiography

This course is a seminar on the writing of film history and is intended to provide a capstone experience for Film and Media Studies majors. Through an engagement with the historiographical writings of scholars, such as Dominic LaCapra, Hayden White, and Michel Foucault, students gain an understanding of various genres of film histori-

cal writing, an appreciation for the kinds of research that film historians do, and a familiarity with the ways in which film historians delimit their field of study, form research questions, and develop hypotheses. In addition to reading and classroom discussions, students are expected to write a fairly lengthy paper (17-20 pages) that involves original historical research and the close examination of trade press, professional journals, fan magazines, and news articles. As preparatory assignments leading up to the final project, students also prepare project descriptions, bibliographies, and outlines that are shared and discussed in a workshop format. Credit 3 units.

A&S TH

Film 430. Clown Princes

Same as AMCS 4303.

"Dying is easy, comedy is hard," runs an old theatrical adage. Nevertheless, some of the most popular actors in American film have chosen the hard path by typecasting themselves in comedy, playing repeated variations on the same character. "Comedian comedy," representing films that showcase the distinctive skills of great clown-actors, is the central concern of this course. We analyze how individual comedians rework performance traditions through the distinctive concerns of their time and culture to create idiosyncratic comic personae. We look at films starring Charles Chaplin, Buster Keaton, Harold Lloyd, Laurel and Hardy, the Marx Brothers, Jack Benny, Peter Sellers, Jim Carrey, and Eddie Murphy. Work for the course requires reading in comic theory and analytical essays. Required screenings. Credit 3 units.

A&S TH

Film 450. American Film Genres

Same as AMCS 457, E Lit 450.

By close examination of three or four specific types of film narratives, this course explores how genre has functioned in the Hollywood mode of production. Students gain an understanding of genre both as a critical construct as well as a form created by practical economic concerns, a means of creating extratextual communication between film artist/producers and audience/consumers. Genres for study are chosen from the western, the gangster film, the horror movie, the musical, screwball comedy, science fiction, the family melodrama, the woman's film, and others. In addition to film showings, there are readings in genre theory as well as genre analyses of individual films. Required screenings. Credit 3 units.

A&S TH FA Lit

Film 452. Advanced Screenwriting

Same as E Comp 4521.

This course is intended for students who have already taken Film Studies 352, "Introduction to Screenwriting." Building on past writing experiences, students explore the demands of writing feature-length screenplays, adaptations, and experimental forms. Particular attention is paid to the task of rewriting. Credit 3 units.

A&S LA FA Lit

Film 458. Major Film Directors

Same as AMCS 4581, IAS 459, EuSt 458, E Lit 4502.

What does the film director do? In the earliest movies, film directors modeled themselves on their theatrical counterparts: they chiefly focused on how to stage an action in a confined space for a stationary camera that represented an ideal member of the audience. As the camera began to be used to direct audience attention, first through cutting, then through actual movement, the film director evolved from a stager of events to a narrator. By analyzing the work of one or more major film directors, this course explores the art of film direction. We learn how film directors may use the camera to narrate a scene, to provide their own distinctive view of the actions playing out on the movie screen. May be repeated for credit with permission of the instructor. Required screenings. Credit 3 units.

A&S TH

Film 495. Special Projects

This course is intended for juniors and seniors who wish to register for internships. Students must receive Program approval prior to beginning the internship. Please consult the program guidelines governing internships. Credit variable, maximum 3 units.

Film 499. Study for Honors

This course is intended for majors pursuing honors in Film and Media Studies. In order to enroll for this course, students must apply in advance for honors and be approved by a faculty committee. Please consult the program guidelines for application deadlines and other requirements. Credit 3 units.

Film 500. Independent Study

This course is intended for students who wish to pursue areas of study not available within the standard curriculum. In order to enroll for this course, students must have a faculty adviser and submit a contract outlining the work for the course to the Film and Media Studies office. Please consult the program guidelines governing independent study work. Credit variable, maximum 3 units.

FOCUS

Participating Faculty, 2006–08

Miriam L. Bailin, Associate Professor
(English)

Ph.D., University of California–Berkeley

Marvin J. Cummins, Professor Emeritus
(Political Science)

Ph.D., University of Colorado

Elyane Dezon-Jones, Professor Emerita
(French)

Doctorat de 3e Cycle, University of Paris

Joachim Faust, Lecturer
(Linguistics)

Ph.D., University of Kansas

Dirk Killen, Assistant Dean
(Arts & Sciences)

Ph.D., Harvard University

Mary Laurita, Assistant Dean
(Arts & Sciences)

Ph.D., Columbia University

Joseph Loewenstein, Professor
(English)

Ph.D., Yale University

Jeffery S. Matthews, Senior Artist in
Residence

(Performing Arts)

M.F.A., Virginia Commonwealth University

Henry I. Schvey, Professor
(Performing Arts)

Ph.D., Indiana University

Lynne Tatlock

Hortense and Tobias Lewin
Distinguished University Professor
in the Humanities

(German)

Ph.D., Indiana University

FOCUS is a special, year-long seminar program open only to first-year students. Several FOCUS plans are offered every year, each built around a seminar topic reflecting the FOCUS faculty member's particular area of expertise. All students in a FOCUS seminar also attend a companion course chosen by their professor to encourage exploration of the seminar topic from varying perspectives. The FOCUS program provides a coherent, group-oriented learning experience, with out-of-classroom activities, while still allowing time for electives.

FOCUS seminars change each year and have included such topics as the following: Law and Society; Global Culture and the Individual; the Theater as a Living Art; Wild Ethics and Environmentalism; Writers as Readers; Nationalism and Identity; and Cuba: From Colonialism to Communism. Enrollment in each FOCUS plan is limited to 16 students to ensure informal, personalized instruction. All FOCUS courses count toward degree requirements, and no major or pre-professional curriculum is precluded by enrolling in FOCUS.

Focus 201. FOCUS: Nationalism and Identity: The Making of Modern Europe

Same as History 2011.

This course is a reading-and-discussion seminar

designed for students interested in an interdisciplinary program in history, literature, and language. It covers a series of major topics in French and German history, beginning with the French Revolution and culminating in the origins of World War I. The unifying theme will be the concept of the nation and development of nationalism. Major topics include Napoleon, the revolutions of 1848, and German unification; related topics include such issues as women and the concept of the nation. The seminar reads texts such as the Abbe Sieyès' *What is the Third Estate?* (in translation) and reviews excerpts from such films as Abel Gances's *Napoleon* and Jean Renoir's *La Marseillaise*. Credit 3 units.

A&S TH FA SSP

Focus 202. Focus on French Nationalism 1789–1914: The Formation of French National Identity

Exploration of cultural expressions and depictions of nationalism in France 1789–1914 with emphasis on literary forms—poetry, prose, drama—against the background of social and political change and in particular against the background of Franco-German relations. Includes investigation of the use of gender to construe the nation; founding myths; the roles of men, women, and the family in the nation; importance of language and other ethnic markers; the creation and function of heroes; versions of the past; cultural stereotyping of the French versus the German, as well as contemporary critiques of nationalism. Taught in English. Co-requisite: Each student should enroll in the level of French language instruction that follows his or her fall course. Credit 4 units.

A&S TH FA SSP

Focus 203. Focus on German Nationalism 1789–1914: The Formation of German National Identity

Exploration of cultural expressions and depictions of nationalism in Germany 1789–1914 with emphasis on literary forms—poetry, prose, drama—but including other symbolic modes of expression, against the background of social and political change and in particular against the background of Franco-German relations. Includes investigation of the use of gender to construe the nation; founding myths; the roles of men, women, and the family in the nation; the importance of language and other ethnic markers; the creation and function of heroes; versions of the past; cultural stereotyping of the German versus the French, as well as contemporary critiques of nationalism. Credit 4 units.

A&S TH FA SSP

Focus 206. Workshop: Readers as Writers

In establishing a “Readers’ Workshop” we examine the relationship between text and text—the ones we read and the ones we write, using these as opportunities to study how writing in its varied forms creates impact and effect on the page. Exercises include both creative and analytic pieces—essays, poetry, short fiction, and nonfiction novels and excerpts from Dostoevsky, Coetzee, Woolf, Rhys, and Brontë: Guiding texts include, but are not limited to, those being studied in Focus 280 Writers as Readers, which must be taken concurrently. Credit 2 units.

A&S TH FA Lit

Focus 208, 2081. FOCUS: Global Culture and the Individual: Intercultural Skills for the 21st Century

The emergence of a global society continues to create vast changes in all cultures. How do these changes affect our lives and the way we view ourselves and our place in the world? Students in this FOCUS seminar use the study of language, culture, and literature to examine how they, as individuals, relate to self, community, and culture. Students also learn to apply the skills needed to

live and work most effectively within the University community and beyond. Credit 3 units.

A&S SS FA SSP

Focus 215, 216. FOCUS: The Theater as a Living Art

Moving in and out of practice and theory, this FOCUS plan interweaves a traditional introductory acting course with discussions of dramatic theory and visits to rehearsals where directors and actors work to shape the play. Must be taken concurrently with Drama 237. Credit 3 units.

A&S LA FA AH

Focus 2172, 2172. FOCUS: Women in Science

This FOCUS Program explores the question of women and science. The fall class begins with an introduction to women’s involvement in science from antiquity to the present. We examine the ways in which women have pursued scientific knowledge, look at the cultural factors that affected them and the family situations that facilitated or inhibited their scientific work, and investigate the impact of scientific theory on their lives and opportunities. Scientific and medical conceptions of women’s bodies have changed throughout the ages, and these ideas also are reviewed. In the second half of the course, we use this historical foundation to begin a discussion and analysis of current issues in gender and science. We look at the feminist critique of science and scientific objectivity before turning to women’s careers in science. Several questions are central to our inquiry: Do women “do” science differently? Could alternative science and mathematics education help increase women’s representation in fields that continue to be male-dominated like physics, engineering, and computer science? How do social expectations of men and women affect career choices and retention? We continue to explore these questions and concepts in the second semester course, which concentrates on contemporary issues for women in science. Throughout the year, we hear from a variety of women scientists who visit the class. Drawing from both the Danforth and Medical Campuses as well as the corporate world of science, a diverse group of scientists will come and speak to the class about their education, scientific disciplines, and careers.

Focus 221, 222. FOCUS in Law and Society

Same as Lw St 221.

The Law and Society FOCUS is designed to expose students to some contemporary legal debates in American society and to expand their understanding of those issues as they are adjudicated in our legal system. We explore these current topics within the basic liberal arts tradition, which emphasizes the view that the legal system is a social instrument for seeking a “just society.” The seminar, accordingly, is an introduction to legal controversies as questions of public policies that have philosophical, social, political, and economic implications, as well as legal ones. Prerequisite: admission to the law and society FOCUS plan. Credit 3 units.

A&S SS FA SSP

Focus 2310. FOCUS: Cooperative Living, Community Building, and Sustainability

This FOCUS seminar is for students who are concerned about the global ecological and social crisis that, according to many, has the potential to threaten the survival of humanity. The seminar investigates ways to create a sustainable future on our planet. Specifically, we explore different aspects of alternative and experimental ways of living and working together. Some topics we cover are: utopian and intentional communities, ecological aspects of language use (how the way we talk influences the way we live), cultural self-awareness, the Kibbutz movement, Gandhi’s practice of satyagraha (firmly grasping the way things ought

to be), ideology and utopia, and the history of the cooperative movement. Credit 3 units.

A&S SS

Focus 267, 2671. FOCUS: Cuban Transitions: From Colonialism to Communism

This course examines the Cuban experience from its beginnings as a Spanish colony to its independence. Topics studied include, among others, the Tainos, slavery, the preeminence of sugar and tobacco as an economic and cultural force, social structures, race, the documentaries, the paintings of Wilfredo Lam, the photographs of Walker Evans, and the contribution of music to the Cuban ethos. We contrast various approaches to the understanding of Cuban history such as those of Fernando Ortiz, Hugh Thomas, and Louis Peres. Short readings are drawn from Luis Casas, Martí, Felix Varela, and others. Credit 3 units.

A&S SS FA SSP

Focus 280. FOCUS: Writers as Readers

Writing as a creative response to reading is examined through this seminar. Just as modern students are students of literature, so too were writers in the past students of their literary heritage. How did major English writers—Chaucer, Shakespeare, Milton, Austen, Deats, and Yeats, among others—respond to what they read? Students consider the ways these writers resisted, embraced, and repudiated the efforts of those who had written before them. Readings and discussions elicit each student’s own creative and critical responses. As happened in the past, the reading writer is answered by the writing reader. Credit 3 units.

A&S TH FA Lit

Focus 2811: FOCUS: The Literary Culture of Modern Ireland

This course examines the literature of Ireland from the fall of Parnell to the outbreak of the Second World War. This is the period of an emerging cultural nationalism, a great efflorescence of literature in many genres, and some of the most important political, social, and military events in modern Irish history. One of the remarkable things about the period is the close relationship between prominent figures in the literary and artistic world and those in the realm of politics and social change. The result was a rich cross-fertilization of ideas and attitudes that had enormous implications for the future of this embattled island nation. We explore this vital and transformative exchange by close attention to some primary texts of the period. Writers studied include: Yeats, Gregory, Wilde, Synge, Shaw, Joyce, and Bowen.

Focus 2922, 2942. FOCUS: The Medieval World

This course examines the various forms of social organization in Italy during the late Middle Ages (circa 1200–1400). In the fall semester, students enroll in either History 101C Western Civilization or Art-Arch 112E Introduction to Western Art. In conjunction with these courses we meet for a one-hour weekly seminar to improve our understanding of the European Middle Ages: its broad social structure, its intellectual and political history. In the spring, we look closely at Italy, with particular attention to north-central Italy, and to how walls—building walls and city walls—defined groups and instilled a sense of identity, keeping people in as well as out. We study rural and urban communities, secular and religious communities, families, and other types of small groups, such as lay confraternities and consorceries. We also inquire about the relationship between walls and power, and we look at how people commemorated their communities, particularly in literature, architecture, and painting. Readings include works by Saint Francis of Assisi and Saint Catherine of Siena, Dante (*Divine Comedy*), and Boccaccio (*Decameron*), as well as contemporary chronicles

and other documents. At the end of the semester, we travel to Italy to visit some of the places we've studied, including Pisa, Florence, Siena, and Assisi. Credit 1 unit.

A&S TH

Focus 293, 294. FOCUS: The Created Past, the Recovered Future

Between 1500 and 1630 many aspects of European culture were radically transformed, including medicine. Physicians and scholars of this time began to explore previously neglected areas while remaining very attached to Europe's Greco-Roman and Islamic heritage. Based upon original documents and drawing on the work of modern medical and social historians, this course investigates early modern Western medicine and its social and cultural contexts. Students study attitudes to health and disease, health care practices, cuisine and nutrition, hygiene and physical education, herbal medicine, the growth of anatomy and surgery, child-care, the conflict between doctors and midwives, and changing ideas of contagion and epidemiology. We examine the work of such key scientists as Vesalius, Paré, Fracastoro, Fuchs, Mercuriale, and Boursier and of such seminal writers as Rabelais and Montaigne whose writings are so centrally concerned with medicine and illness. The course includes several field trips, including a trip at the end of the semester to Paris and Padua. While students interested in health care may find this course especially appealing, no special knowledge of medicine is required. Credit 3 units.

A&S TH FA SSP

Germanic Languages and Literatures

Chair

Stephan Schindler

Ph.D., University of California–Irvine

Endowed Professors

Paul Michael Lützel

Rosa May Distinguished University Professor in the Humanities

Ph.D., Indiana University

Lynne Tatlock

Hortense and Tobias Lewin Distinguished University Professor in the Humanities

Ph.D., Indiana University

Gerhild Scholz Williams

Barbara Schaps Thomas and David M.

Thomas Professor in the Humanities

Ph.D., University of Washington

Professor

Lutz Koepnick

Ph.D., Stanford University

Assistant Professors

Matthew Erlin

Ph.D., University of California–Berkeley

Jennifer Kapczynski

Ph.D., University of California–Berkeley

William Layher

Ph.D., Harvard University

Erin McGlothlin

Ph.D., University of Virginia

Adjunct Associate Professor

James E. McLeod, Vice Chancellor for Students and Dean of the College of Arts & Sciences

ABD, Rice University

Specialist in Foreign Language Pedagogy

Eva Russo

Ph.D., University of California–Los Angeles

Lecturer

Ebba Segerberg

Ph.D., University of California–Berkeley

Professors Emeriti

James F. Poag

Ph.D., University of Illinois

Egon Schwarz

Rosa May Distinguished University Professor Emeritus in the Humanities

Ph.D., University of Washington

Germanic Languages and Literatures offers a diverse and challenging program of study in the language, literature, and culture of the German-speaking countries. In this program you study the German language intensively and explore German literature and culture

from the Middle Ages to the present. You also have the opportunity to learn business German and to study contemporary Germany.

As a beginning student, you are taught German through a combination of main classes and subsections. You rapidly acquire speaking skills through intensive interactive classroom activities. Intermediate German combines a five-hour main class with a subsection to enable you to work steadily on speaking, writing, listening, and reading skills. Advanced language courses help you to polish your basic German and to improve your facility to use complicated grammatical structures and to express complex ideas orally and in writing.

In Washington University's German program you take courses from internationally recognized faculty members who are leaders in their fields and who have been recognized for their expertise in undergraduate teaching. Faculty areas of interest include literature and history, film, prose narrative, gender studies, the history of German cultural institutions, the history of literary genres, literature before 1700, contemporary literature, and Austrian literature. All German classes are small, thus facilitating lively faculty-student interaction. Our collection of contemporary German literature, housed in Olin Library, is the largest in North America and attracts many visiting scholars to our campus.

As a student of German, you can choose among several study abroad programs, and you can take advantage of an array of co-curricular activities including film series, the German honorary society Delta Phi Alpha, weekly conversation groups in the residence halls, lectures by guest speakers, and readings by visiting authors. Many German students also elect to assist with the biennial German Day for middle school as well as junior and senior high school students from Missouri and Illinois and thus to transmit their interest in German to the next generation of students.

A degree in German prepares you for graduate study in German language and literature, language education, comparative literature, and linguistics. You may also choose to combine a degree in German with another major in the College and upon graduation to pursue graduate degrees in, for example, art history, business, environmental studies, international and area studies, law, or medicine. In addition to careers in academia, our graduates have pursued careers in diverse fields, including international banking, diplomacy, editing, and tax law.

The Major: You are required to complete 24 units of course work in German on the 300 and 400 levels, with a maximum of 12 units at the 300 level and a minimum of 12 units at the 400 level. Ger 340C and the Senior Assessment (undertaken in conjunction with a 400-level seminar) are required of all majors. GER 340C is required for admission to all 400-level courses except GER 404 and GER 408D. Admission to 400-level courses (except GER 404 and 408D) without completion of 340C is by departmental permis-

sion only. If you begin German at Washington University and follow the regular sequence of courses (Ger 101D-102D-210D), you will be ready to begin your German major after three semesters. There are also two accelerated tracks that prepare students to take 300-level courses after only two semesters: (1) students who have previously taken German but need to start over take Ger 100D followed by 290D; (2) students with no previous German who do well in Ger 101D and who wish to accelerate follow Ger 101D with 290D. Each student's progress toward her or his goal will be monitored on a regular basis and by a variety of means.

The Minor: For a minor in German, you are required to take 15 units at the 300 and 400 levels. Ger 340C is strongly recommended. **Study Abroad:** As a German major or minor, you are encouraged to participate in one of the overseas study programs. The German department sponsors a semester and a year abroad at the University of Tübingen, Germany. To be accepted to the Tübingen program you must complete Ger 404 in addition to Ger 301D and 302D or the equivalent by the end of your sophomore year. If you begin your German study at Washington University and wish to study abroad, you must enroll in one of the accelerated tracks in your first year at Washington University or you need to plan to participate in the summer program after your first year at Washington University. Upon returning to campus, German majors are required to take at least one 400-level course (other than Ger 497-498) for each semester spent abroad.

Washington University sponsors an eight-week summer program in Göttingen, Germany. If you have taken at least one semester of German, you may be eligible for this intensive language program. Especially if you are interested in business, the department encourages you to apply for the Webster University International Business Internship or for the business internship in Koblenz, Germany, arranged by Washington University's Olin School of Business.

Senior Honors: You can earn Honors in German by writing a thesis during your final year at Washington University. You choose a topic, with the help of a faculty thesis adviser from the department. Upon acceptance of your thesis proposal (normally in the fall of your senior year), you register for the Ger 497-498 sequence. You present the thesis to your thesis adviser and a second reader approximately one month before the conclusion of your final semester at the University.

Elementary German

Ger 100D. Continuing German for Students with High School German

Builds on students' previous knowledge of German language and culture, reviewing and reinforcing the four language skills of listening, speaking, reading, and writing in cultural contexts with special emphasis on communicative competence. In addition to the regular class meetings, students sign up after the semester begins for a once-weekly subsection (time to be arranged). Prerequisites: placement by examination and at least two years of high school German, or permission of in-

structor. Students who complete this course successfully may enter Ger 102D or 290D. Credit 3 units.

A&S LA

Ger 101D. Basic German: Core Course I

Introductory language program; no German required. Develops the four language skills of listening, speaking, reading, and writing in cultural contexts. Emphasis on communicative competence. In addition to the regular class meetings, students should sign up for a twice-weekly subsection. Students who complete this course successfully should enter Ger 102D or Ger 290D. Credit 5 units.

A&S LA

Ger 102D. Basic German: Core Course II

Continuation of Ger 100D or 101D. In addition to the regular class meetings, students should sign up for a twice-weekly subsection. Prerequisite: Ger 100D, 101D or equivalent, or placement by examination. Credit 5 units.

A&S LA

Ger 111D. Elementary German I

Development of speaking, listening, reading, and writing skills. Exposure to cultural topics. Laboratory work included. Offered during Summer School only. Credit 4 units.

A&S LA

Ger 112D. Elementary German II

Continuation of Elementary German I. Further development of all skills. Exposure to cultural topics and to fictional and nonfictional texts. Laboratory work included. Prerequisite: Elementary German I, or equivalent. Offered during Summer School only. Credit 4 units.

A&S LA

Intermediate German

Ger 210. Intensive Reading III

Credit 3 units.

A&S LA

Ger 210D. Intermediate German: Core Course III

Continuation of Ger 102D. Reading and discussion in German of short literary and non-literary texts combined with an intensive grammar review. Further development of writing skills. In addition to the regular class meetings, students sign up after the semester begins for a subsection (time to be arranged). Prerequisite: Ger 102D or equivalent, or placement by examination. Students who complete this course successfully should enter Ger 301D or 313. Credit 5 units.

A&S LA

Ger 281C. The Middle Ages: Multiple Views of Culture

Same as Med-Ren 310C.

A&S TH FA Lit

Ger 290D. Intensive Intermediate German

Accelerated continuation of Ger 100D or 101D. Covers material of Ger 102D and Ger 210D in one semester. Specifically designed to bring students up to the 300 level in one semester, thereby enabling them to reach the level of German language proficiency necessary for the Study Abroad Program. Further development of the four language skills in cultural contexts and increased emphasis on reading of literary and nonliterary texts. In addition to the regular class meetings, students sign up after the semester begins for a subsection (time to be arranged). Prerequisite: grade of A- or better in Ger 100D or 101D, or permission of instructor. Students who complete this course successfully should enter Ger 301D. Credit 6 units.

A&S LA

Advanced German

Ger 301D. Advanced German: Core Course IV

Discussion of literary and nonliterary texts combined with an intensive grammar review. Systematic introduction to the expressive functions of German with an emphasis on spoken and written communication. In addition to the regular class meetings, students should sign up for a twice-weekly subsection. Prerequisite: Ger 210D, 290D, or equivalent, or placement by examination. Students who complete this course successfully should enter Ger 302D. Credit 4 units.

A&S LA

Ger 302D. Advanced German: Core Course V

Continuation of Ger 301D. Refinement and expansion of German communication skills (speaking, listening, writing, reading), deepening understanding of German grammatical structures, acquisition of more sophisticated and varied vocabulary, introduction to stylistics through discussion and analysis of literary and nonliterary texts. In addition to the regular class meetings, students should sign up for a twice-weekly subsection. Prerequisite: Ger 301D or equivalent, or placement by examination. Students completing this course successfully may enter the 400 level. Credit 4 units.

A&S LA

Ger 313. Conversational German

Same as German 313.

Practice in speaking and vocabulary development in cultural contexts. Prerequisite: Ger 210D, 290D, or equivalent, or placement by examination. Two hours a week. May be repeated for credit. Credit 1 unit.

A&S LA

Ger 327. Medieval Germanic Cultures

Content variable. Credit 3 units.

FA SSP

Ger 328. Topics in German Studies

Same as Film 328.

A&S TH

Ger 329. Topics in German Literature I

Same as Comp Lit 393.

A&S TH

Ger 331. Topics in Holocaust Studies

Same as JNE 344.

A&S TH FA Lit SSP

Ger 334C. Masterpieces of Modern German Literature in Translation

Same as German 452.

Content variable. Credit 3 units.

A&S TH FA Lit

Ger 340C. German Literature and the Modern Era

Same as IAS 3402, EuSt 3400.

Introduction in English to German writers from 1750 to the present. Discussion focuses on questions like the role of outsiders in society, the human psyche, technology, war, gender, the individual and mass culture, modern and postmodern sensibilities as they are posed in predominantly literary texts and in relation to the changing political and cultural faces of Germany over the past 250 years. Readings include works in translation by some of the most influential figures of the German tradition, such as Goethe, Nietzsche, Freud, Kafka, Thomas Mann, Brecht, and Christa Wolf. Open to first-year students, nonmajors, and majors. Required for admission to 400-level courses (except 404 and 408D). Qualifies for major or minor credit when taken in conjunction with a one-hour discussion section in German. The discussion section provides an introduction to critical German vocabulary and is open to students with prior

knowledge of German (Ger 210D or equivalent, or placement by examination). Credit variable, maximum 4 units.

A&S CD TH **FA** Lit

Ger 4031. Lectures on German Literature and Culture

Same as German 4031.

Four lectures in German on German literature and culture by a distinguished visiting professor. Students present class notes in German and write four one-page reaction papers (in German; to be revised) as well as a final three- to five-page reaction paper (in German). Attendance is required for those taking the course for credit. Credit/No Credit only. Credit 1 unit.

A&S TH **FA** Lit

Ger 404. Germany Today

Same as IAS 4040, EuSt 404.

Introduction to the history, politics, and culture of contemporary Germany (1945 to the present). Topics include the cultural construction of identity in post-unified Germany; European integration and post-Wall economy; the German constitution, electoral system and current elections; current debates and controversies; political parties and leading political figures; the role of literature, film, music, the visual arts, media and popular culture; the role of universities. Discussion, readings, and papers in German. Required for candidates for the Overseas Study Program in Tübingen (Germany). Prerequisite: Ger 302D (may be taken concurrently with Ger 404), or permission of instructor. Credit 3 units.

A&S CD TH **FA** SSP

Ger 408D. German as a Language of Business

Designed to introduce students to concepts, structures, and issues relevant to German business and economics and to develop language and communication skills necessary to succeed in the German business world. Concentration on the fundamental structures of the German economic system, including industry and commerce, Germany as a production site, the structure of labor relations, the banking and finance sectors, fiscal and monetary policies, and international trade. Students also are introduced to specific aspects of German business, including market and product analysis, distribution and marketing, contracting and communication, enterprise cultures and human resources, as well as accounting. Development of business vocabulary, writing style appropriate for business reports, letter writing, oral presentation techniques, reading techniques for German newspapers and economic texts, and comprehension skills for German news programs. Lectures, readings, and assignments in German. In addition to the regular class meetings students sign up for a twice-weekly subsection. Prerequisite: Ger 302D or permission of instructor. Credit 4 units.

A&S LA

Ger 4100. German Literature and Culture, 1150–1750

Exploration of medieval and early modern literature and culture within sociohistorical contexts. Genres and themes vary and may include visual culture, representation, the development of fictionality and historical writing, questions of race, gender, and class, courtly culture, law, magic and marvels, medical and scientific epistemologies. Readings may include such genres as the heroic epic, drama, “Minnesang,” the courtly novel, the Arthurian epic, fables, the novella, religious or devotional literature, witch tracts, pamphlets, political writings, the “Volksbuch,” the picaresque novel, and the essay. Discussion, readings, and papers in German. Prerequisite: see headnote. Credit 3 units.

A&S TH WI

Ger 4101. German Literature and Culture, 1750–1830

Exploration of the literature and culture of the Enlightenment, Storm and Stress, Weimar Classicism, and Romanticism within sociohistorical contexts. Genres and themes vary and may include the representation of history, absolutism and rebellion, the formation of bourgeois society, questions of national identity, aesthetics, gender, romantic love, and the fantastic. Reading and discussion of texts by authors such as Lessing, Goethe, Schiller, Kant, Novalis, Günderode, the Brothers Grimm, Kleist, E.T.A. Hoffmann, Eichendorff, Bettina von Arnim. Discussion, readings, and papers in German. Prerequisite: see headnote. Credit 3 units.

A&S CD TH WI **FA** Lit

Ger 4102. German Literature and Culture, 1830–1914

Exploration of 19th-century literature and culture within sociohistorical contexts. Genres and themes vary and may include the representation of history, liberalism and restoration, nationalism, industrialization, colonialism, class, race and gender conflicts, materialism, secularization, and fin-de-siècle. Reading and discussion of texts by authors such as Büchner, Heine, Marx, Storm, Keller, Meyer, Fontane, Droste-Hülshoff, Nietzsche, Ebner-Eschenbach, Schnitzler, Rilke. Discussion, readings, and papers in German. Prerequisite: see headnote. Credit 3 units.

A&S CD TH WI F Lit

Ger 4103. German Literature and Culture, 1914 to the Present

Exploration of modern and contemporary literature within sociohistorical contexts. Genres and themes vary and may include the representation of history, the crisis of modernity, the two World Wars, the Weimar Republic, the Third Reich, generational conflicts, the women’s movement, and postmodern society. Reading and discussion of texts by authors such as Wedekind, Freud, Mann, Kafka, Brecht, Seghers, Böll, Bachmann, Grass, Wolf. Discussion, readings, and papers in German. Prerequisite: see headnote. Credit 3 units.

A&S CD TH WI **FA** Lit

Ger 4104. Studies in Genre

Same as WGS 4104.

Exploration of the definition, style, form, and content that characterize a specific genre. Investigation of the social, cultural, political, and economic forces that lead to the formation and transformation of a particular genre. Examination of generic differences and of the effectiveness of a given genre in articulating the concerns of a writer or period. Topics and periods vary from semester to semester. Discussion, readings, and papers in German; some theoretical readings in English. Prerequisite: see headnote. Credit 3 units.

A&S CD TH WI **FA** SP

Ger 4105. Topics in German Studies

Focus on particular cultural forms such as literature, film, historiography, social institutions, philosophy, the arts, or on relationships between them. Course examines how cultural meanings are produced, interpreted, and employed. Topics vary and may include national identity, anti-semitism, cultural diversity, construction of values, questions of tradition, the magical, the erotic, symbolic narrative, and the city. Course may address issues across a narrow or broad time frame. Discussion, readings and papers in German. Prerequisite: see headnote. Credit 3 units.

A&S CD TH WI **FA** SSP

Ger 4106. Studies in Gender

Same as WGS 4106.

Investigation of the constructions of gender in literary and other texts and their sociohistorical contexts. Particular attention to the gendered conditions of writing and reading, engendering of the subject, and indicators of gender. Topics and periods vary from semester to semester and include gender and genre, education, religion, politics, cultural and state institutions, science, sexuality, and human reproduction. Discussion, readings, and papers in German; some theoretical readings in English. May be repeated with different content. Prerequisite: see headnote. Credit 3 units.

A&S SD TH WI

Ger 411. German Language Seminar: History of the German Language

Same as Med-Ren 416.

Treatment of the historical development of German phonology, morphology, syntax, and lexicon. Focus on the emergence of New High German. Examination of the relationship of standard German to its dialects and to other Germanic languages, particularly English. Conducted in German; papers in German. Prerequisite: Ger 302D or the equivalent, or permission of instructor. Credit 3 units.

A&S LA

Ger 414. German Language Seminar: Structure of the German Language

Same as Ling 4651.

Advanced course for undergraduates that enables better understanding of the language and sub-languages of modern German in terms of linguistic theory. Particular attention to semiotics and pragmatics, i.e., to German viewed as a “sign” of human communication, value, interaction. Conducted in German; papers in German. Prerequisite: Ger 302D or the equivalent, or permission of instructor. Credit 3 units.

A&S LA

Ger 497. Independent Work for Senior Honors

Research for an Honors thesis, on a topic chosen in conjunction with the adviser. Emphasis on independent study and writing. Open to students with previous course work in German at the 400 level, an overall 3.0 grade point average, and at least a B+ average in advanced work in German. Prerequisites: senior standing and permission of the undergraduate adviser. Credit 3 units.

Ger 498. Independent Work for Senior Honors

Continuation of Ger 497. Completion of thesis. Quality of the thesis determines whether the student receives credit only or Honors in German. Prerequisite: Ger 497. Credit 3 units.

History

Chair

Hillel J. Kieval

Gloria M. Goldstein Professor of Jewish History and Thought
Ph.D., Harvard University

Endowed Professors

Derek M. Hirst

William Eliot Smith Professor
Ph.D., Cambridge University

Linda J. Nicholson

Stiritz Professor of Women's Studies
Ph.D., Brandeis University

Douglass C. North

Spencer T. Olin Professor in Arts & Sciences (Economics)
Ph.D., University of California–Berkeley

Professors

Iver Bernstein

Ph.D., Yale University

Howard Brick

Ph.D., University of Michigan

Gerald N. Izenberg

Ph.D., Harvard University

David T. Konig

Ph.D., Harvard University

Kenneth H. Ludmerer

M.D., Ph.D., Johns Hopkins University

Tim Parsons

Ph.D., Johns Hopkins University

Richard J. Walter

Ph.D., Stanford University

Associate Professors

Andrea S. Friedman

Ph.D., University of Wisconsin

Ahmet T. Karamustafa

Ph.D., McGill University

Max J. Okenfuss

Ph.D., Harvard University

Mark Pegg

Ph.D., Princeton University

Assistant Professors

Leslie Brown

Ph.D., Duke University

Margaret Garb

Ph.D., Columbia University

Christine Johnson

Ph.D., Johns Hopkins University

Peter Kastor

Ph.D., University of Virginia

Steven Miles

Ph.D., University of Washington

Guy Ortolano

Ph.D., Northwestern University

Nancy Reynolds

Ph.D., Stanford University

Walton O. Schalick III

M.D., Ph.D., Johns Hopkins University

Corinna Treitel

Ph.D., Harvard University

Robert Vinson

Ph.D., Howard University

Lori Watt

Ph.D., Columbia University

Senior Scholar in the Humanities

Steven Hause

Ph.D., Washington University

Adjunct Professor

Steven Zwicker

(English)
Ph.D., Brown University

Adjunct Associate Professors

Mary Ann Dzuback

(Education)
Ph.D., Columbia University

John Nye

(Economics)
Ph.D., Northwestern University

Professors Emeriti

Solon Beinfeld

Ph.D., Harvard University

Henry Berger

Ph.D., University of Wisconsin

Richard Davis

Ph.D., Columbia University

George Hatch

Ph.D., University of Washington

Peter Riesenberg

Ph.D., Columbia University

Laurence A. Schneider

Ph.D., University of California–Berkeley

By training you in the discipline of history, the Department of History helps you develop basic skills with wide application. You learn to organize and interpret data, to write with precision and clarity, to develop logical and convincing arguments, and to combine careful research with creativity. The development of these skills makes a major in history a valuable and rewarding pre-professional program.

The history department offers you the opportunity to study most of the major time periods and geographical areas of interest: the Americas, Europe, Asia, the Middle East, and South Asia. The department is particularly strong in U.S., European, British Empire, and medical history. There are eight U.S. historians, two medical historians, and a number of specialists in Britain, Europe, Africa, and South and East Asia. There are also specialists in African-American and women's history.

As a history major, you also may declare a second major or minor in another department or a cooperating program. With a degree in history, you can do graduate work in history, attend law school, or pursue a career in business, communications, education, government, the travel industry, international agencies, publishing, journalism, and public relations.

The Major: Departmental requirements normally call for you to take two introductory

survey courses out of four options (Western Civilization I and II, American History, and World History). In addition, you are required to take 21 units in advanced-level courses, including at least one course from each of the three undergraduate divisions of the department: developing areas, Europe, and America. All majors must also complete a capstone experience (either a Senior Honors thesis, an advanced seminar, or a faculty-guided independent research project or historical internship) prior to graduation. Although there is no formal language requirement, you may need foreign language or quantitative skills to pursue advanced or graduate work. You should consult with your adviser to determine what is best for your career goals.

The Minor: For a history minor, you must complete 18 units, of which 6 ordinarily are two introductory history surveys. Of the remaining 12 units, 9 must be in advanced-level courses.

Internships: As a history major, you are eligible for an internship at the Missouri Historical Society or at other museums. Opportunities are also sometimes available in the special collections at Olin Library, with local businesses, and at historical sites.

Study Abroad: You are encouraged to participate in various overseas studies programs, which may fulfill up to one-third of the required credits in the major or minor.

Senior Honors: If you have a strong academic record, you may work toward Honors, for which you will be recommended at the end of the sophomore year. You must normally complete two advanced seminars in the junior year, and complete History 399, Senior Honors Thesis and Colloquium, while writing a thesis during your senior year.

Undergraduate Courses

History 101C. Western Civilization

Same as Med-Ren 110C.

This course surveys the development of the Western tradition from its roots at the edge of the Mediterranean world, through religious change and conflict, to the rise of the absolutist state, the beginnings of a consumer culture and what we think of as modern science. The shaping of "Christendom," of "Europe," of "the West," has always been a matter of competition and controversy; we examine not only the complex ways in which cultural strands (Greco-Roman, Judeo-Christian, German and Celtic, Arab and Slav) were woven together but also ways in which others were excluded or suppressed. We ask too, how the resulting amalgam was differentiated from its contemporaries elsewhere on the globe. Introductory course to the major and/or minor. Credit 3 units.

A&S TH FA SSP

History 102C. Western Civilization

This course provides an introduction to modern Europe. The introduction includes coverage of the great events that shaped Europe (such as the French Revolution or the World Wars of the 20th century), the individuals who played great roles (such as Napoleon, Bismarck, or Stalin), and the movements that transformed European civilization (such as industrialization, Marxism, or the emancipation of women.) A special focus of the course, however, is on the elements of everyday life for ordinary people. Was there such a thing as "traditional marriage" and a "traditional family"? What

was life like when most people received 50 percent to 70 percent of their caloric intake from bread and other starches? How does one understand a world in which the average life expectancy at birth was approximately 30 years? What were cities like in an age without sewer systems? Credit 3 units.

A&S TH FA SSP

History 105E. Myths and Monuments of Antiquity

Same as Art-Arch 232E.

A&S CD LA FA AH

History 106I. Freshman Seminar: Topics in Modern Middle East History

See *Course Listings* for current topics. Credit 3 units.

A&S TH

History 1113. Freshman Seminar: Latin America in the 1960s—The Cuban Revolution and Its Influence

As in much of the world, the 1960s were turbulent years in the history of Latin America. The Cuban Revolution of 1959 had a widespread influence that shook the hemisphere and dominated many of the events of the period. In this seminar, we examine the Revolution and its repercussions, particularly as it affected United States-Cuban relations specifically and U.S.-Latin American relations generally. Credit 3 units.

A&S CD TH

History 120. Conflicts in the Middle East: A Historical Perspective

Due to recent current events, the Middle East and its future has become a hotly debated topic. Yet, for the most part, we know very little about its history and the origins of the different conflicts. Beginning with the 20th century, students study the history, society, and culture of the different regions of the Middle East, concentrating on Turkey, Egypt, Israel/Palestine, and Iraq. This discussion-based, interdisciplinary class integrates the readings with film, music, and literature. Open only to students in the Freshman Summer Academic Program. Credit 3 units.

A&S TH FA SSP

History 130. Freshman Seminar: Civil Rights

Same as AFAS 132C.

A&S SD TH

History 131C. Topics in European History: Text and Tradition

Same as Hum 203C.

A&S TH FA SSP

History 132C. Topics in European History: Text and Tradition

Same as Hum 207C.

A&S TH FA SSP

History 156. Freshman Seminar: Shakespeare's England

This course examines certain themes central to our understanding of Shakespeare's England, such as monarchy, order, power and the limits on action, national identity, gender, and family. We read and discuss modern historical scholarship, a range of contemporary sources, and Shakespeare's plays, and the relations among these. Credit 3 units.

A&S TH

History 163. Introduction to the History of the United States

Same as AMCS 163.

This course offers a broad survey of American history, from the era immediately prior to European settlement in the Western Hemisphere to contemporary life in the United States. It introduces students to the critical and analytical skills required for historical scholarship and should be regarded as a prerequisite for courses of a higher number in American history. Introductory course to the major

and/or minor. Credit 3 units.

A&S TH FA SSP

History 164. Introduction to World History

Same as IAS 164.

This course approaches the history of the world through a study of nationalism as a set of ideologies and practices. It examines the emergence of a world that seems so natural to us that we take it for granted: a world of nations. After a brief theological introduction, the course takes up a series of case-studies that range widely over time and space, from England to Vietnam. The lectures and readings focus on the diversity of circumstances under which nationalism has taken shape in different parts of the world. They also underline what these circumstances and manifestations have in common. They emphasize the impact of nationalism as the defining ideology of the modern world. Introductory course to the major and/or minor. Credit 3 units.

A&S TH FA SSP

History 196C. Freshman Seminar: Images of Africa

Same as AFAS 196C.

A&S CD TH FA Lit

History 2011. Nationalism and Identity: The Making of Modern Europe

Same as Focus 201.

A&S TH FA SSP

History 202. Crossing Borders I

Same as IAS 202.

A&S CD SS

History 205I. History of American Radicalism: From the Abolitionists to the Battle of Seattle

Same as Lw St 205I, AMCS 205I.

A general history of radical movements that were intended to challenge varied forms of inequality, domination, exploitation, or violence, and to foster some kind of emancipatory reconstruction of American life and government. With some attention to early forms of artisans' and workingmen's radicalism, as well as the antebellum abolitionist and women's rights movement, we focus on the development and the fate of a modern Left—from the labor, anarchist, socialist, and communist movements through the Black freedom struggle and the New Left of the 1960s, feminism, and beyond. Credit 3 units.

A&S TH FA SSP

History 208I. Introduction to Jewish Civilization

Same as JNE 208F.

A&S TH FA SSP

History 2090. Freshman Seminar: Chinese Diasporas

China has had one of the most mobile populations in world history. This freshman seminar explores migration patterns and networks in the creation of Chinese diasporas in the early modern and modern eras (1500–present). Rather than focus exclusively on the history of China or the Chinese overseas, this course more broadly considers practices and networks that sustained and linked internal and external migrations. Credit 3 units.

A&S TH

History 2091. Freshman Seminar: The City in Early Modern Europe

Same as Med-Ren 2091.

Cities were important political, economic, and population centers in early modern Europe. For its diverse inhabitants, a city functioned as a source of identity and support and as a site for economic and social conflict. Using a wide variety of primary and secondary sources, this class examines how men and women, rich and poor, established citizens, and marginal groups, tried to understand and manage the urban experience. Credit 3 units.

A&S SD TH FA SSP

History 209C. America to the Civil War

The American experience from the age of Columbus to that of Lincoln; development of distinctive American patterns of thought, culture, society, politics, and religion. Topics include efforts to cope with the wilderness; colonial maturity and the development of revolutionary ideology; defining the American character; literature and art for a new republic; the impulses of religion, idealism, and perfectionism. Credit 3 units.

A&S TH FA SSP

History 210. America from the Civil War

Same as AMCS 209.

This course is an overview of American history from the end of the Civil War to the present. Main topics include: Reconstruction, the Industrial Revolution and the rise of big business, Progressivism, American Imperialism and WWII, the 1920s, the Great Depression and the New Deal, WWII and the Cold War, suburbanization, the Civil Rights Movement, Vietnam, and contemporary America. Credit 3 units.

A&S TH FA SSP

History 2110. Digital Humanities: Information, Representation, Analysis, and Modeling

History 214C. Introduction to Islamic Civilization

Same as JNE 210C.

A&S CD TH FA SSP

History 2152. The Theory and Practice of Justice: The American Historical Experience

Same as History 2152, AMCS 2152, Lw St 2152. This introductory course uses historical case studies combined with readings in law, literature, and philosophy to illuminate key episodes where definitions of justice were contested in 19th and 20th century America. Some of the conflicts to be explored include: Civil War era debates over southern secession; whether land and other forms of reparation should be offered to freed people to redress the injustices of racial slavery; the denial of voting rights to women as a case of "taxation without representation;" as well as 20th century-controversies over legal bans on racial intermarriage; free speech versus hate speech in the 1960s and '70s; and recent debates over affirmative action, gay marriage, and a host of other issues. Credit 3 units.

A&S SD TH FA SSP

History 215C. Topics in American History

Same as AMCS 215C.

A survey of major themes that reflect general trends in American history. A lecture and discussion course using both primary and secondary sources to introduce students to significant issues and methods in American history. Open only to first-year students. Enrollment limited. See *Course Listings* for current topics. Credit 3 units.

A&S SD TH FA SSP

History 218C. The Renaissance: Crisis and New Beginning

Same as Med-Ren 318C.

A&S TH

History 220I. Freshman Seminar: Ideas, Personalities, and Politics in Revolutionary Russia

This freshman seminar explores the revolutions that created and ended the Soviet Union. Ideas include: nationalism, socialism, and populism; individuals range from Nicholas II, Rasputin, and Lenin, to Solzhenitsyn, Sakharov, and Gorbachev. Readings, discussion, and short papers. Credit 3 units.

A&S TH FA SSP

History 220H. The History of Modern Social Theory

Same as STA 220.

A&S SS

History 234. The African-American Church in America

The African-American church is one of the older and most significant institutions to be found in the African-American community. Therefore, it is one of the most dominant and prominent foundations affecting the culture of African-American life, at the center of the African-American community. This course attempts to rediscover the intricate nature of the African-American religious experience and the subsequent traditional institutions established by African Americans. Credit 3 units.

FA SSP

History 243. Film and History

Many people today get their history largely from films. Professional historical journals have begun reviewing historical films regularly, and there is a growing literature on the relationship between academic and cinematic history. Historians often criticize historical films for their inaccuracies, yet it seems clear that each medium has its strengths and weaknesses. This course attempts to compare the approaches of film and historical scholarship to the understanding of the past. Credit 3 units.

A&S TH FA AH

History 251F. Religious Minorities of South Asia

Same as *Re St 251F*.

A&S CD TH FA SSP

History 276. St. Louis African-American History

Same as *AFAS 2151*.

A&S SD TH FA SSP

History 2904. East Asia Since 1500

This course seeks to explain the emergence of three of the most dynamic societies in early modern (1500–1800) and modern (1800–present) times: China, Korea, and Japan. In addition to offering an introductory overview of East Asian history, this course provides an alternative view to American and European interpretations of early modern and modern world history. Credit 3 units.

A&S TH FA SSP

History 299. Undergraduate Internship in History

Students receive credit for a faculty-directed and -approved internship. Registration requires completion of the Learning Agreement, which is obtained by the student from The Career Center and must be filled out and signed by The Career Center and the faculty sponsor prior to beginning internship work. Credit should correspond to actual time spent in work activities, for example, 8 to 10 hours a week for 13 or 14 weeks to receive 3 units of credit; 1 or 2 credits for fewer hours. Students may not receive credit for work done for pay but are encouraged to obtain written evaluations about such work for the student's academic adviser and career placement file. Credit variable, maximum 3 units.

FA SSP

History 3002. Independent Work

Permission of the department required. Credit 3 units.

History 3003. Critical Issues in American Environmental History

Same as *AMCS 3003, EnSt 3003*.

This course examines how Americans have transformed their environment as well as how environmental change has shaped American life. Topics include: American's changing attitudes toward nature; the environmental effects of rural and urban development; technological changes and their impacts on the natural world; and the emergence of the conservation and environmental movements. Class lectures, readings, and discussions illustrate the significance of the natural world in the study of American history and provide perspective on

some of the nation's environmental problems today. Credit 3 units.

A&S TH

History 3004. Technology in America

Same as *AMCS 3004, History 3004*.

This course explores the importance of technological change in America's economic, social, and cultural history. We study the innovations with which Americans changed their everyday life as well as the emergence of complex technological systems that structured their experience of the world around them. Lectures and readings emphasize the perspectives of Americans who believed technological advancement promised a better society and Americans who believed new technologies created more problems. The viewpoints of these technology enthusiasts and critics allow the class to examine the ambiguities of technological progress in American history. Credit 3 units.

A&S TH

History 301. Honors Seminar for Sophomore I: Tutorial in History

Same as *JNE 5011, AMCS 3011, AFAS 3021, JNE 3011*.

A small-group reading course for sophomores intending to major in History who have successfully completed two introductory courses. Emphasis on historical literature and method over a broad field within American, European, and non-Western history. The tutorial is neither a research seminar nor a course in historical philosophy, but a reading-discussion course emphasizing historiography, bibliography, critical reviews, and general reading of major historical works. Enrollment limited. See *Course Listings* for current topics. Credit variable, maximum 4 units.

A&S TH FA SSP

History 3012. Modern British History: 1688–2000

This course examines the social and political history of Great Britain from the Glorious Revolution to the present day. Major themes include the forging of a "British" identity, the acquisition of Empire, economics, transition and religious conflict. Credit 3 units.

A&S TH FA SSP

History 302. Honors Seminar for Sophomores II: Tutorial in History

Same as *AMCS 3021, EnSt 302*.

A small-group reading course for sophomores intending to major in History who have successfully completed two introductory courses. Emphasis on historical literature and method over a broad field within American, European, and non-Western history. The tutorial is neither a research seminar nor a course in historical philosophy, but a writing-intensive, reading-discussion course emphasizing historiography, bibliography, critical reviews, and general reading of major historical works. Enrollment limited. See *Course Listings* for current topics. Credit 4 units.

A&S TH FA SSP

History 3021. Introduction to the History and Culture of Ancient Mesopotamia

Same as *JNE 302*.

A&S TH FA SSP

History 303. Major Themes in United States Urban History

Same as *STA 303*.

A&S SS FA SSP

History 3042. Two Renaissance Cities:

Approaches to Early Modern Culture

Same as *Hum 3042, Med-Ren 313*.

This core course explores Renaissance texts, images, and contexts. We compare the experience and the artifacts of two cities, one Italian and one outside Italy, in order to assess the viability of "the Renaissance" as a pan-European cultural label; we note the pressures of urban and court life

on cultural production; and we observe the interaction of intellectual and aesthetic self-confidence with the concerns of politics and patronage. Credit 3 units.

A&S TH FA SSP

History 3043. Renaissance Europe

Same as *Med-Ren 3043*.

Europeans in the Renaissance experienced both tremendous cultural change and restricted social opportunities, as new influences opened the world to a few, while political and economic circumstances limited changes in the social order. This course examines the interaction of society and culture through questions such as: Why did new cultural forms emerge and what impact did they have? What defined people's choices at this moment of cultural change? What tensions were created and how did society try to contain or express them through cultural forms? Topics covered include: the culture of politics and war; humanism, popular culture; medicine; and religion. Credit 3 units.

A&S SD TH FA SSP

History 305. History of Premodern China

Same as *East Asia 305*.

A structured survey of the field, from early Chou feudalism to the great political rebellions of the 19th century. An analysis of Chinese social history is used to account for the general evolution of political institutions and cultural styles; the role of commerce, bureaucratic capabilities, and political ideology is assessed in the qualitative change of relations among gentry, state, and peasant society. Credit 3 units.

A&S TH FA SSP

History 3057. Visual Griots: Exploring Colonial and Post-Colonial Africa through African Film

Same as *AFAS 3057*.

A&S CD TH FA AH

History 3066. The City in the 19th and 20th Centuries

Same as *History 3066, AMCS 3066, Pol Sci 3066*.

This course explores the cultural, political, and economic history of U.S. cities in the 19th and 20th centuries. We focus on New York, Chicago, St. Louis, and Los Angeles, although other cities may be included. Among the topics discussed are immigration, industrialization, race, and gender relations. Credit 3 units.

A&S SD TH FA SSP

History 3072. Cracks in the Republic: Discontent, Dissent, and Protest in America, 1950–1975

Same as *Pol Sci 3072, Lw St 3072, AMCS 308*.

Through primary sources, including films as well as narrative accounts, this course investigates the context, causes, content, and consequences of the political and cultural upheavals in American society between 1950 and 1975. Domestically and internationally, the events of the period were rooted in developments during the preceding years of the late 1940s. Credit 3 units.

A&S SD TH FA SSP

History 307C. Law in American Life I: English and Colonial Foundations to 1776

Same as *AMCS 308C, Lw St 307C, Pol Sci 307C*.

The role of law and legal institutions in the establishment of societies by the various peoples of the New World. Although some attention is paid to Native American, African, French, and Spanish traditions and practices, the basis of the course is the creation of a new Anglo-American legal culture on the fundamental structures and principles of English law. Credit 3 units.

A&S TH FA SSP

History 3091. Poverty and Social Reform in American History

Same as *AMCS 3091, History 3091*.

This course explores the history of dominant ideas

about the causes of and solutions to poverty in American society from the early republic to the end of the 20th century. We investigate changing economic, cultural, and political conditions that gave rise to new populations of impoverished Americans, and to the expansion or contraction of poverty rates at various times in American history. The course focuses primarily on how various social commentators, political activists, and reformers defined poverty, explained its causes, and struggled to ameliorate its effects. We trace the emergence of various government anti-poverty programs and track the effects of government policies and private philanthropy on American society. Credit 3 units.

A&S SD TH FA SSP

History 310C. The Jews in the Ancient World
Same as JNE 301C.

A&S CD TH FA SSP

History 313C. Islamic History: 622–1200

Same as Med-Ren 313C, JNE 313C, Re St 313C. The cultural, intellectual, and political history of the Islamic world, beginning with the prophetic mission of Muhammad and concluding with the Mongol invasions. Credit 3 units.

A&S TH FA SSP

History 314C. Islamic History: 1200–1800

Same as History 5314, JNE 314C, JNE 5314, Lw St 314, Med-Ren 315C, History 3130.

A survey of the major Islamic polities and societies of the Nile-to-Oxus region from 1200 to 1800; their cultures, socioeconomic conditions and historical development. Particular attention is given to the Mamluk and Ottoman Middle East, Safavid Iran, and Mughal India. Credit 3 units.

A&S TH FA SSP

History 3150. The Middle East in the 20th Century

Same as History 3150, IAS 3150, JNE 5150, JNE 3150.

This course surveys the history of the Middle East since World War I. Major analytical themes include: colonialism; orientalism; the formation of the regional nation-state system; the formation and political mobilization of new social classes; changing gender relations; the development of new forms of appropriation of economic surplus (oil, urban industry) in the new global economy; the role of religion; the Middle East as an arena of the Cold War; conflict in Israel/Palestine; and new conceptions of identity associated with these developments (Arabism, local patriotism, Islamism). The geographical focus is on the mashriq—the eastern Arab world (Egypt, the Fertile Crescent, and the Arabian Peninsula) plus Turkey, Iran, and Israel. Much of the contemporary attention to the Middle East is framed as a series of inscrutable crises rooted in primordial religious or ethnic hatreds. In contrast, we examine several such crises through the lens of history, using the analytical themes listed above as entry points. Credit 3 units.

A&S CD TH FA SSP

History 3151. The Palestinian-Israeli Conflict, 1881–Present

Same as JNE 3151, IAS 3151, History 3151.

This class traces the roots of the Palestinian-Israeli conflict back to Europe, Istanbul, and late Ottoman Palestine. During this period, we observe how the Palestinian-Israeli conflict developed as a regional conflict as both these nascent movements took form. The class then moves on to the British mandate period, taking into consideration the major impact the Holocaust had on the conflict and how following Israeli independence, this conflict transformed into a full-fledged Arab-Israeli conflict. The last section covers events in Israel and the Palestinian territories once the land was united following the 1967 war. It addresses the return of Palestinian local nationalism, the rise of the PLO,

and its impact on Israel. Further, it focuses on topics of religion, politics, and society among Israeli and Palestinians, as well as the Oslo Accords and its eventual failure. Credit 3 units.

A&S TH FA SSP

History 3152. The History of Iran from 1501 to the Present

Same as IAS 3152, JNE 3152, History 5152.

In this class we examine the socio-political change and religious movements from Safavid Persia to present day Iran. We discuss the process of institutionalization of Shi'ism in Iran during the Safavid period and the reasons for the fall of the Safavid Empire. During the Qajar period we focus on the increasing contact between Qajar Iran and the Western powers; the introduction of ideas of constitutionalism and Western form of schooling; as well as the debates that surrounded such contacts with the West. Credit 3 units.

A&S TH FA SSP

History 315C. Middle East in Modern Times: 1800 to the Present

Same as Re St 315C, JNE 315C, IAS 315C, History 315, IDEV 315C.

The transformation of the major Middle Eastern polities under domestic as well as Western pressures; nation-building; economic change; and the Arab-Israeli conflict. Credit 3 units.

A&S TH FA SSP

History 3162. Early Modern China: 1350–1890
Same as IAS 3163, ACC 3162, East Asia 3162.

This course examines political, socioeconomic, and intellectual-cultural developments in Chinese society from the middle of the 14th century to 1890. This chronological focus largely corresponds to the last two imperial dynasties, the Ming (1368–1644) and Qing (1644–1911). Theoretically, the course emphasizes such early modern indigenous developments as increasing commercialization, social mobility, and questioning of received cultural values. Initial encounters with the West are covered, but the course concludes before the widespread and radical impact of Western and Japanese imperialism in the 1890s. Credit 3 units.

A&S TH FA SSP

History 316C. Modern China: 1890–Present

Same as East Asia 316C, IAS 316C, History 316.

A survey of China's history from the clash with Western powers in the 1800s to the present day economic revolution. This course examines the background to the 1911 revolution that destroyed the old political order. Then it follows the great cultural and political movements that lead to the Communist victory in 1949. The development of the People's Republic is examined in detail, from Mao to the global economy. Credit 3 units.

A&S TH FA SSP

History 318C. African Urban History

See department. Credit 3 units.

A&S TH FA SSP

History 3190. The Eastern Question: 1815–2002

This course surveys Great Power diplomacy in the Eastern Mediterranean Basin and in the Caucasus from the Congress of Vienna to 9/11. Topics include Russo-Turkish Wars; Balkan Wars of National Liberation; Crimean War; Congress of Berlin; World Wars I and II; Cold War; and Post-1989 regional conflicts. Credit 3 units.

A&S TH FA SSP

History 3191. History of South Asia to the Eve of Modernization

Same as IAS 3191.

One fifth of the world's population lives in South Asia: the modern nations of India, Pakistan, Bangladesh, Sri Lanka, Nepal, Bhutan, Afghanistan, and the Maldives. South Asians practice every major religion and speak scores of dif-

ferent languages. The people who make up this enormous diversity sometimes coexist peacefully, and sometimes they threaten each other with knives and nuclear weapons. In this course, we examine the origins of South Asian civilization, from prehistory to the beginning of colonial rule in the 18th century. We look at the development of religious systems like Hinduism and Buddhism, the arrival of Islam, and relations between the different religious communities. We also examine the creation of the first states and empires in South Asia and take a particularly close look at the Mughal Empire, which was the last and the most sophisticated Indian state before the British conquest of the country. Credit 3 units.

A&S CD TH FA SSP

History 3192. Modern South Asia

Same as ACC 3192, IAS 3192, History 3192, Pol Sci 3192.

This course covers the history of the Indian subcontinent in the 19th and 20th centuries. We look closely at a number of issues including colonialism in India; anti-colonial movements; the experiences of women; the interplay between religion and national identity; and popular culture in modern India. Political and social history are emphasized equally. Credit 3 units.

A&S CD TH FA SSP

History 319C. History of Japan to the Eve of Modernization

Same as IAS 319, East Asia 311C.

Explores the evolution of traditional Japanese society from prehistoric times to the consolidation of the Tokugawa Shogunate. Credit 3 units.

A&S TH FA SSP

History 320C. Modern Japan

Same as East Asia 312C, IAS 324C, History 320C.

This course studies Japan's emergence as a modern society from the Tokugawa period to the present. Credit 3 units.

A&S CD TH FA SSP

History 3212. Special Topics in History: Keble College, Oxford

See department. Credit variable, maximum 10 units.

A&S TH FA SSP

History 321C. Latin America: From Colonialism to Neocolonialism, 1492–1890

Same as Pol Sci 3212, LatAm 321C, IAS 321C, History 321.

A survey of Latin-American history from the discovery of the New World in 1492 to the Spanish-American-Cuban War in 1898. Topics covered include the period of discovery, conquest, and settlement, the establishment of colonial control, the wars of independence, and the attempts to establish modern nation states in the 19th century. Credit 3 units.

A&S CD TH FA SSP

History 322C. Latin America in the 20th Century: Reform or Revolution

Same as IDEV 322C, History 322, IAS 322C, LatAm 322C.

An examination of Latin America in the 20th century, with special emphasis on revolutionary nationalism, industrialization and urbanization, mass participation in politics, and the role of the United States in the area. Credit 3 units.

A&S TH FA SSP

History 3252. History and (Auto)biography from Modern South Africa

Same as Lw St 417, AFAS 3252, IAS 3253, History 3252, AMCS 3252.

This course is an introduction to both the modern history of South Africa and to individual South African lives, some famous, some "ordinary folk." The course begins with a brief survey of major

pre-20th-century themes such as the construction and reconstruction of African states, societies, and ethnicities, Dutch and British settlement and conquest, slavery, the discovery of gold and diamonds, subsequent rapid industrialization and the South African War. Credit 3 units.

A&S CD TH

History 3261. American Economic History

Same as Econ 326.

A&S SS FA SSP

History 3262. The Early Medieval World: 300–1000

Same as Med-Ren 3652, Re St 3262.

A principal theme of this course is the Christianization of Europe. From the emergence of the Christian church in the Roman Empire and the conversion of the emperor Constantine in 312 through the turbulent adoptions of Christianity by different cultures in the early middle ages; the rise of Islam in the 7th century; the Arab conquests of north Africa and southern Europe; and the Byzantine empire, especially in Constantinople. Credit 3 units.

A&S CD TH FA SSP

History 3263. The High Middle Ages: 1000–1500

Same as Med-Ren 3263.

This course begins with the first millennium in the West and ends with the arrival of Europeans in the Americas. We explore issues such as the relationship of popes to kings, of cities to villages, of Jews to Christians, of vernacular literature to Latin, of knights to peasants, of the sacred to the profane. Credit 3 units.

A&S CD TH FA SSP

History 3272. Economic Development of East Asia

In this course, students read historical explanations of both phenomena, and inquire whether they can be fit into a single framework. Students also consider the influence of cultural, institutional, and international factors, among others, on economic growth and development. Credit 3 units.

A&S SS FA SSP

History 3281. Topics in African History: The Political Economy of Health in Africa

See *Course Listings* for current topics. Credit 3 units.

A&S TH FA SSP

History 3300. Methods and Reasoning in the Social Sciences II

Same as STA 330.

A&S SS FA SSP

History 3302. Religion and Science

Same as Re St 3301.

A&S TH

History 3303. History of American Cinema

Same as Film 330.

A&S TH FA AH

History 3321. The Bible in the Jewish Tradition

Same as JNE 327.

A&S TH

History 333. The Holocaust: History and Memory

Same as IA 533, JNE 5331, History 333, IAS 333, EuSt 3331, JNE 3331.

Origins, causes, and significance of the Nazi attempt to destroy European Jewry within the context of European and Jewish history. Related themes: the Holocaust in literature; the psychology of murderers and victims, bystanders and survivors; contemporary implications of the Holocaust for theology and politics. Credit 3 units.

A&S SD TH FA SSP

History 334C. History of Jews in Christian Europe to 1789

Same as History 5334, Re St 334C, JNE 334C, JNE 5334, Med-Ren 334C, History 334.

The position of the Jews in relation to church and state; organization and self-government of the Jewish community; movements of Jewish spirituality (Kabbalah, German and Polish Hasidism); divisions within Jewish society; and the background of emancipation and enlightenment. Credit 3 units.

A&S CD TH FA SSP

History 335C. The Jews in the Modern World

Same as History 335, IAS 3350, EuSt 3350, JNE 535C, JNE 335C, Re St 335C.

This course offers a survey of the Jewish experience in the modern world. We begin with the European Enlightenment and the formation of the modern state and end with American and Israeli settings at the close of the 20th century. The cultural, social, and political lives of Jews have undergone tremendous transformations and dislocations over this time—a period marked by innovation, tragedy, and success. Among the themes that we explore in depth are: the campaigns for and against Jewish “emancipation”; acculturation and religious reform; Jewish life in the Russian empire and in Eastern Europe; the rise of political and racial anti-Semitism; mass migration and the formation of American Jewry; varieties of Jewish national politics; Jewish-Gentile relations between the World Wars; the destruction of European Jewry; the emergence of a Jewish nation-state; and Jewish culture and identity since 1945. Credit 3 units.

A&S CD TH FA SSP

History 336C. History of the Jews in Islamic Lands

Same as Re St 336C, JNE 336C, History 336C, IA 536, JNE 536C.

The legal status of Jews under Islam; the impact of the Moslem conquest and Abbasid rule on the Jewish community of Babylonia; the flourishing Jewish civilization in Moslem Spain; the nature of Mediterranean Jewish society in the High Middle Ages; Jewish life in 16th-century Ottoman Turkey. Credit 3 units.

A&S TH FA SSP

History 3402. Money and Morals in the Age of Merchant Capital

Same as Med-Ren 3402, Lw St 3401.

Between the late medieval period and the 18th century, Europe underwent an economic transformation and expansion that produced both global dominance and the economic organization of the modern age. These developments were not immediately or universally seen as beneficial, however, and we also examine the ambivalence and moral suspicion surrounding commerce and the figure of the merchant in early modern Europe. Credit 3 units.

A&S TH FA SSP

History 3403. Europe Between the Wars: 1919–1939

A survey of European history between the wars. It stresses the distinctive modern conflicts of the period, particularly those resulting from World War I and leading to World War II. Considerable attention is given to the development of the Soviet system, but the major emphasis is on the rise of fascism, Nazism, and other forms of right-wing authoritarianism, which are studied in the broader European context. There is also extended examination of the Spanish Republic and the internationalization of the Spanish Civil War. Credit 3 units.

A&S TH FA SSP

History 3413. Women in Early Modern Europe

Same as Med-Ren 3413, WGS 3413.

From the Renaissance to the Enlightenment, European women experienced tremendous change as Europe witnessed religious upheaval, economic retrenchment, political consolidation, and intellectual revolution. However, many of the core ideas about women’s role and status remained remarkably stable during this period, and women continually struggled to create opportunity for themselves. We examine both the changing and unchanging nature of women’s lives through sources such as conduct manuals for women, biographies about women from different economic, social, and religious backgrounds, and the works of female authors. Credit 3 units.

A&S SD TH FA SSP

History 341C. Ancient History: The Roman Republic

Same as Classics 341C.

A&S TH FA SSP

History 342C. Ancient History: The Roman Empire

Same as Classics 342C.

A&S TH FA SSP

History 343C. Europe in the Age of Reformation

Same as Re St 343C, Med-Ren 343C.

At the beginning of the 16th century, Europe was torn apart by the theological, social, and political upheaval created by Martin Luther’s challenge to the Roman Catholic Church. We begin this course by examining the late medieval history of dissent and the social and religious environment that made the Reformation possible. Through the writings of some of the major reformers and apologists for the Catholic Church, we analyze the doctrines and the tactics of the principal branches of Protestantism and the Catholic Church’s response. We conclude by assessing the social and political impact of the Reformation. Credit 3 units.

A&S CD SD TH FA SSP

History 3440. The Social World of Early Christianity

Same as Re St 3440.

From its very beginning, Christianity confronted pressing social issues, many of which still challenge us today. In this course, we examine a selection of these topics in the hope not only of understanding the historical development of Christian social practice and doctrine, but also of evaluating the “solutions” articulated by the early church. To this end, we complement our readings in the primary sources with essays drawn from the contemporary social sciences. Credit 3 units.

A&S TH FA SSP

History 3441. Introduction to European Studies

Same as IAS 344.

A&S CD TH

History 3450. Modern Germany

What does it mean to be German? How should Germany fit into Europe? What problem does the German past pose for today? These questions structure our survey of the forces that have shaped German history since 1800. After examining the multiplicity of German states that existed in 1800, we identify unification in 1871. We then turn to a study of modern Germany in its various forms, from the Empire through the Weimar Republic and Third Reich, to post-war division and reunification. One major focus is the continuities and discontinuities of German history, particularly with regard to the historical roots of Nazism and the issue of how far the two post-war Germanys broke with the past. Credit 3 units.

A&S TH FA SSP

History 3456. Greek History: Archaic and Classical*Same as Classics 345C.***A&S TH FA SSP****History 345A. The Scientific Revolution***Same as Biol 345A.***A&S NS FA NSM****History 346C. Greek History: The Age of Alexander***Same as Classics 346C.***A&S CD TH FA SSP****History 347. Darwin and Evolutionary Controversies***Same as Biol 347.***A&S NS WI FA NSM****History 3470. Gender and Citizenship***Same as WGS 347.***A&S TH****History 348. Europe in the Age of Imperialism: 1870–1940***Same as IAS 348, EuSt 348.*

Europe at the height of its power and influence. The expansion of European control in Africa and Asia, international relations, and the problem of war and peace. The social tensions in mature industrial societies and the particular characteristics of the major European states—England, France, Germany, and Russia—and some of the smaller countries. Credit 3 units.

A&S TH FA SSP**History 349. Europe in the 20th Century: 1914–1945***Same as Pol Sci 3491, EuSt 349, IAS 349, IDEV 349.*

This course looks at World War I and its impact on European society; the Russian Revolution and the rise of the Soviet Union; the Versailles settlement and the diplomacy of the interwar years; fascism in Italy; national socialism in Germany; and the origins and course of World War II. Credit variable, maximum 4 units.

A&S TH FA SSP**History 3491. Europe in the 20th Century: 1945–2000***Same as EuSt 3491.*

This course is an introduction to political, social and cultural developments in Europe from 1945 to the present. It investigates the reconstruction of Europe following the devastation of the Second World War and the principles upon which this reconstruction was based. Topics include: the post-war settlement following WWII; the division of Germany; the consolidation of the communist and the capitalist power blocs and the beginning of the Cold War; political and economic reconstruction in Western Europe and Stalinization in Eastern Europe; and the path toward the formation of the European Community. Credit variable, maximum 4 units.

A&S TH FA SSP**History 3508. The Crusades: Cross–Cultural Perspectives***Same as Re St 3508, Hum 3508, Med-Ren 3508.*

Traditionally, the study of the Crusades in the Western world has focused almost exclusively on the European Christian view of events. But in recent years, a more complete picture has begun to emerge of the long series of conflicts between Christians and Muslims in the Holy Land. This course looks broadly at the history and evolving significance of the Crusades from a variety of perspectives—Christian, Muslim, Jewish, and Byzantine. We begin at the end of the 11th century with the birth of the crusading impulse, do some intense reading of the primary sources concerning the First and Third Crusades, work our way through the later and increasingly unsystematic at-

tempts by the Christians to recover the movement's glorious past, and end with a look at materials from the post-9/11 world that demonstrate the persistent meaning of the Crusades for modern geopolitics. Credit 3 units.

A&S TH FA SSP**History 352. England in the 17th Century**

A century that saw two political revolutions, the “scientific revolution,” and the beginnings of the “commercial revolution” was a period of crisis and change. Yet old structures of power and belief proved resilient. Focus on the causes and limits of change; readings in the works of the kings, thinkers, revolutionaries, and those who experienced rather than shaped authority. Credit 3 units.

A&S TH FA SSP**History 3522. History of Medicine in the Middle Ages: In Syknesse and in Helthe***Same as Med-Ren 3522.*

This course is for History majors and pre-health professions students. It examines the institutions of medieval medicine as well as social reactions to diseases and the lives of patients and practitioners. Credit 3 units.

A&S TH FA SSP**History 3531. Early Modern England**

Around 1500, England was an overwhelmingly agrarian society dominated by crown and aristocracy; by 1700, political power had been redistributed by revolution, while commercialization, “science” and empire-building were well under way. Through lecture and discussion, and through readings in a variety of autobiographical and other writings, including some of the great works of literature, we examine how contemporaries sought to shape, or to come to terms with their world. Credit 3 units.

A&S TH FA SSP**History 3532. Faith and Power in Early Modern England**

This course examines the often explosive relations between religious faith and political power in 16th- and 17th-century England: a time of the conquest of Ireland; the burning of martyrs; the hanging of witches, and puritan experiments in New and old England. It explores the painful process by which a general commitment to religious unity and coercion eroded to allow space to the individual conscience. Credit 3 units.

A&S TH FA SSP**History 354. Victorian Britain**

A survey of British history from the 1830s to the modern period, with an emphasis on society and politics. Credit 3 units.

A&S TH FA SSP**History 355. 20th-Century Britain***Same as EuSt 355, IAS 355.*

The United Kingdom of Great Britain and Ireland entered the 20th century as an economic and political superpower; after enduring civil war, two world wars, de-industrialization, and the loss of its empire, however, it ended the century on very different terms. This seminar examines, explains, and attempts to characterize this process, focusing upon two seemingly contradictory themes: (1) the tendency of historians, politicians, and other analysts to read this period as an age of national decline, and (2) the improvements to the lives of the vast majority of Britons. The format includes both lecture and discussion; evaluation is based upon a combination of essays, participation, and a final exam. Credit 3 units.

A&S TH FA SSP**History 3552. Modern France Since 1870***Same as IAS 3552, EuSt 3552.*

This course is a survey of French history from the Franco-Prussian War to today. We cover such major topics as: the war of 1870–1871; the Paris

Commune; the establishments of a democratic republic; the Dreyfus affair; the battle between church and state; the women's rights campaign; industrialization and socialism; World War I; the populist front; the fall of France; Vichy and the resistance; the fourth Republic and decolonialization; de Gaulle and the republic; and the European Union. Emphasis is on political and social history. Credit 3 units.

A&S TH FA SSP**History 3553. French Revolution to Napoleon III***Same as EuSt 3553, IAS 3553.*

The focus of this course is on the French Revolution of 1789–1799 and France under Napoleon Bonaparte, but the topics discussed begin with the crisis of the French monarchy at the end of the Old Regime and end with the reign of the last French monarch, Emperor Napoleon III. Credit 3 units.

A&S TH FA SSP**History 356C. 20th-Century Russian History***Same as IAS 356C, Russ St 356C, EuSt 356.*

A survey of Russian history from 1900 to the present. The course emphasizes the Russian Revolutions at the beginning and end of the century; Stalinism; de-Stalinization; and post-communist society. Much attention is given to the assumptions and conclusions of schools of historical analysis: Marxist, totalitarianism, Kremlinologist, and revisionist. Credit 3 units.

A&S TH FA SSP**History 3584. From Freud to Postmodern and Feminist Psychoanalysis: A History of Psychoanalytic Ideas***Same as Hum 3584, MLA 5116, History 3584.*

This course traces the development of psychoanalysis from Freud's original positions in the early 20th century to the most recent innovations in the psychoanalytic theory and practice of the 21st century. Credit 3 units.

A&S TH FA SSP**History 359. Topics in European History: Women in Modern European History, 1700–2000***Same as Med-Ren 338, IAS 359, EuSt 359C, WGS 359C.*

This course examines the radical transformation in the position and perspective of European women since the 18th century. The primary geographic focus is on Britain, France, and Germany. Topics include: changing relations between the sexes; the emergence of mass feminist movements; the rise of the “new woman;” women and war; and the cultural construction and social organization of gender. We look at the lives of women as nurses, prostitutes, artists, mothers, hysterics, political activists, consumers, and factory hands. Sources include novels, political treatises, films, and memoirs. Credit 3 units.

A&S CD TH FA SSP**History 3598. The First World War and the Making of Modern Europe***Same as EuSt 3598, IAS 3598.*

The World War I ushered our age into existence. Its memories still haunt us and its aftershocks shaped the course of the 20th century. The Russian Revolution, the emergence of new national states, Fascism, Nazism, World War II, and the Cold War are all its products. Today, many of the ethnic and national conflicts that triggered war in 1914 have resurfaced. Understanding the First World War, in short, is crucial to understanding our own era. This course examines the war—its causes, course, and consequences—through a variety of primary sources, including memoirs, films, and diplomatic documents. We also attend to the many approaches scholars have taken to the war and consider the intense debates sparked by their

interpretations. Credit 3 units.

A&S TH FA SSP

History 3604. Science, Religion, and the Humanities since Darwin

Credit 3 units.

A&S TH FA SSP

History 3608. Science and Society Since 1800

This course surveys selected topics and themes in the history of modern science from 1800 to the present. Emphasis is on the life sciences, with some attention to the physical sciences. Lectures place scientific developments in their historical context and the discussions focus on the analysis of key primary sources drawn from the period in question. Credit 3 units.

A&S TH FA SSP

History 3632. The American Frontier: 1776–1848

Same as AMCS 363.

This course examines the nation's shifting frontier from independence through the Mexican-American War. It considers people and places in flux as their nationality, demography, and social order underwent dramatic changes. This course makes use of an extensive electronic archive of primary sources including period documents, historic maps, and contemporary artwork. Students examine a selection of these materials each week and are asked to consider how they confirm, reject, or expand on the ideas they encounter in published scholarship. This archive makes particular use of materials in Olin Library's Special Collections as well as other area archives. Credit 3 units.

A&S SD TH FA SSP

History 365. The New Republic: The United States, 1776–1850

Same as Lw St 365, AMCS 365.

A survey of American history from the eve of the Revolution to the eve of the Civil War. Topics covered include: the Revolution and its little anticipated and ambiguous legacies; the rise of democracy; the starkly paradoxical "marriage" of slavery and freedom, each expanding by leaps and bounds; the creation of much of the America that we know; mass political parties; sustained capitalist growth; individualistic creeds; formalized and folkloric racism; technological innovation; literary experimentation; distinctively American legal, scientific, and religious cultures; and the modern movements of labor, feminism, and African-American empowerment. Credit 3 units.

A&S TH FA SSP

History 3650. The American Presidency: 1789–Present

Credit 3 units.

FA SSP

History 3651. The British Empire in India and Africa

The history of the British Empire in the 19th and 20th centuries through its development in India and Africa. Connections between empire and commerce, the role of Christian missions in imperial expansion, the politics of empire, the relationship between imperial outposts and the home country, the cultural interaction between the colonial and indigenous populations, and the process of decolonization. Credit 3 units.

A&S TH FA SSP

History 3652. Cultural Order and Change

Same as STA 365.

A&S SS FA SSP

History 366. Civil War and Reconstruction: 1848–1877

Same as History 366, AMCS 366.

The Civil War and Reconstruction from the perspective of the individuals who made the choices of the era; the groups that helped shape the actions of individuals; and the historians, novelists, film-

makers, and social movements that have struggled over the meaning and legacy of the bloody conflict. Credit 3 units.

A&S SD TH FA SSP

History 3660. Narratives of Discovery

This course examines Europe's encounter with the newly discovered lands and peoples of Africa, Asia, and America through the writings of the travelers themselves. We read stories of exploration and conquest, cultural and commercial exchanges, religious visions, and cannibal practices as told by Marco Polo, Christopher Columbus, Hernan Cortes, Ludovico Varthema and Jean de Lery, among others. Topics studied include: the world of the explorers; the development of colonial discourses and practices; and the strategies used to handle the difficult questions of eyewitness authority, political legitimacy, and European cultural hegemony. Credit 3 units.

A&S TH

History 367. Modern America: 1877–1929

Same as AMCS 367, Lw St 367.

The rise of industrial America: the social conflicts, cultural shifts, political responses, and world status occasioned by industrial development in the United States, from Reconstruction to World War I. Key concerns include labor, race, and women's suffrage; popular culture; the bohemian avant garde; consumerism; progressive reform; imperialism and the impact of World War I. Credit 3 units.

A&S TH FA SSP

History 368. Modern America Since 1929

Same as AMCS 368, History 368.

This course offers an intensive survey of U.S. history since World War I, concentrating on key turns in the development of American life: social and political strains of the 1920s as part of the "new era" commenced by the Great War; responses to the Great Depression and the construction of a limited welfare state in the 1930s and 1940s; the rise of Cold War anticommunism in foreign and domestic affairs in the wake of World War II; the advent of a new period of social reform and disruptive protest in the 1950s and 1960s; the turn toward the political right since the 1970s; and the aftermath of the Cold War. Credit 3 units.

A&S TH FA SSP

History 3680. The Cold War, 1945–1991

Same as AMCS 3680, IAS 3680, Pol Sci 3680.

This course presents an assessment of the Cold War from the perspective of its major participants, where possible using primary documents and recently released archival sources. Topics include: the origins of the Cold War in Europe and Asia; the Korean War; the Stalin regime; McCarthyism and the Red Scare; the nuclear arms race; the conflict over Berlin; Cold War film and literature; superpower rivalry in Guatemala, Cuba, Vietnam, Africa, and the Middle East; the rise and fall of detente; the Reagan years and the impact of Gorbachev; the East European Revolutions; and the end of the Cold War. Credit 3 units.

A&S TH FA SSP

History 3712. Art and Culture in America's Gilded Age

Same as Art-Arch 3712.

A&S TH FA AH

History 372C. Law in American Life: 1776 to the Present

Same as Pol Sci 372C, STA 372C, Lw St 372C, AMCS 372C.

A history of the role (and rule) of law in American life since the founding of the republic on principles of equal justice under law. The course examines "law in action" as well as of "law on the books" through the following questions: How was the English legal heritage adopted, rejected, or Americanized? What were the legal terms and realities of labor—free, unfree, and slave? How did

law support or attack racialized slavery and inequality? How did the revolution in law affect the family, sexuality, and gender roles? How have popular and vigilante notions of "justice" clashed with formal legal institutions? How has law affected economic growth and the operation of the marketplace? How have legal institutions responded to modern medicine, urbanization, industrialization, professional sports, and organized crime? What remedies has law provided for those suffering personal injury or property loss? What has been the impact of popular culture on the American understanding of law and legal institutions? Credit 3 units.

A&S SD TH FA SSP

History 373. History of United States: Foreign Relations to 1914

Same as AMCS 3730, IAS 3731.

The development of the United States from colony to hemispheric empire and to the threshold of world power. Investigation of historical traditions with particular attention to domestic influences. Credit 3 units.

A&S TH FA SSP

History 374. History of United States Foreign Relations: 1914–1950

Same as AMCS 374.

Impact of world conflict, revolution, and domestic political-economic developments on the global expansion of American interests, ideology, and power from the Great War to the eve of the Korean struggle. Credit 3 units.

A&S TH FA SSP

History 3741. History of United States: Foreign Relations Since 1950

Same as IDEV 374, History 3741, AMCS 3741, IAS 3741, Pol Sci 3741.

Analysis of the causes, burdens, and consequences of American world supremacy in an age of nuclear power and revolutionary challenge. Credit 4 units.

A&S TH FA SSP

History 3751. Women Since 1945: Women in the United States

Same as WGS 3751, AMCS 3751.

A comparative survey of United States and British women's history from the 19th century to the present, focusing on suffrage, work, legal advances, family, sexuality, and citizenship. Credit 3 units.

A&S SD TH FA SSP

History 3752. Women in U.S. History: U.S. Women's History in the 20th Century

Same as AMCS 3753, Lw St 3752, WGS 407.

This course provides an introduction to the history of women in the United States. We analyze from a multicultural perspective women's experiences of historical processes, their role in the making of history, and the ways in which gender has shaped the lives of both women and men. Specific topics to be addressed include: conquest and frontiers; family and religion in colonial America; industrialization and women's work; the sexual politics of slavery and freedom; the gendered nature of American politics; and women's participation in social movements of the 19th and 20th centuries. Credit 3 units.

A&S SD TH FA SSP

History 3754. Topics in Women's History: African-American Women

Same as AFAS 3752.

A&S TH FA SSP

History 3755. Topics in Women's History: U.S. Women's History from 1869 to the Present

This course examines women's social, political, cultural, and economic status in the United States since 1869. In this class, we pay special attention to the changing ideological foundation for women's roles. We investigate how the social and

economic transformations that accompanied industrialization and urbanization influenced women's lives and look closely at the effects of race, class, ethnicity, and region on women's experiences. We explore how women used their defined roles to create positions of influence in American society and thereby overcame constraints they faced in achieving social and political equity. Credit 3 units.

A&S TH

History 3811. Islam in Africa

Same as Re St 347.

A historical survey of the spread and assimilation of Islam in sub-Saharan Africa. Primary topics include the initial introduction of Islam, the formulation of Swahili culture, the medieval Islamic states of the Sahel, Sufism, the West African Jihads, the spread of Islam during Africa's colonial period and Islam in South Africa. Credit 3 units.

A&S CD TH FA SSP

History 382C. The American School

Same as Educ 301C.

A&S SD TH FA SSP

History 383. American Culture and Society Since 1945

Same as Pol Sci 3991, STA 3602, AMCS 383.

A study of major trends in social organization, everyday life, popular culture, and the arts in the United States from the end of World War II to the 1990s. Topics include: race relations; family structure; gender norms; sexuality; religion; generational and class divisions; urban and suburban life; entertainment; and consumer practices. Credit 3 units.

A&S TH FA SSP

History 385. Topics in American History

See department for current topics. Credit 3 units.

A&S TH FA SSP

History 3852. American Urban History I

See department for current topics. Credit 3 units.

A&S TH FA SSP

History 3853. History of Electronic Media

Same as Film 350.

A&S TH

History 3855. Sex, Violence, and Family Values in the Age of Shakespeare

This course analyzes a cluster of social, gender and sexual attitudes and assumptions in the increasingly urbanized and centralized world of early-modern England. Using Shakespeare's plays as primary source-material, the class examines such themes as gender transgression, aggressive wives, undutiful children, honor and the feud, patrician and plebeian violence. Credit 3 units.

A&S TH FA SSP

History 3872. The History of Modern Britain

Same as EuSt 3872, Med-Ren 3872, IAS 3872.

This course is a survey of the major institutions that have shaped the history of modern Britain over the past 300 years. Some of the topics we explore include: the pressures of agricultural and industrial revolution; parliamentary government and the role of a monarchy in an increasingly democratic society; the acquisition and dismantling of empire in Asia and Africa; and the relation of church and state. Credit 3 units.

A&S TH FA SSP

History 3874. An Embarrassment of Riches: 19th-Century Britain

Same as IAS 3874, EuSt 3874.

This course examines the embarrassment of riches that characterized British society, culture, and politics in the 19th century: "riches" because it was in this period that Britain emerged as the world's wealthiest superpower, "embarrassment" because

the same period witnessed the discovery of extreme poverty and malnutrition among its own population. Weekly topics include: the Napoleonic Wars; the Industrial Revolution; democratic reforms to Parliament; imperialism in south Asia and east Africa; the rise of science and evolutionary thought; struggles on behalf of workers' education, women's rights, and Irish independence; and major contributions to Victorian culture. The course entails lectures, films, readings, and discussion; evaluation is based upon a combination of participation and written essays. Credit 3 units.

A&S TH FA SSP

History 3878. Britain and its Empire from 1688 to 1870

Same as EuSt 3878, IAS 3878.

This course is an introduction to the history and culture of modern Britain and Ireland. We see how this damp archipelago off the northwestern coast of Europe extended its reach across the seas and throughout the world. The expansion of English power throughout the British Isles—and of British power throughout the world—was made possible by a combination of political stability, unifying nationalism, and economic might, and we trace these developments from the assertion of Parliamentary supremacy in 1688 to the apex of Victorian civilization in 1870. Along the way we follow these Britons as they forged a nation-state, cobbled together an empire, launched the Industrial Revolution, faced off against George Washington and Napoleon Bonaparte, and took a few steps toward democracy. Credit 3 units.

A&S TH FA SSP

History 387C. Upon These Shores: African-American History, 1500–1864

Same as AMCS 390C, AFAS 390C, Lw St 387C.

An overview of African-American history, culture, and traditions from pre-colonial Africa through the end of the Civil War. Recurring themes in the history of blacks in North America are explored: origins and evolution of scholarship and methodologies; significance of the diaspora; slavery; religious ethos; the search for community; the impact of gender on identity and philosophy; black resistance to slavery; emancipation; and political empowerment. Credit 3 units.

A&S SD TH FA SSP

History 388C. For Freedom's Sake: African-American History Since Emancipation

Same as Pol Sci 388, STA 361C, Lw St 388C, AFAS 391C, AMCS 389C, Pol Sci 388.

This course introduces students to the major themes of African-American history; the changing meanings of freedom; the advances and setbacks in the struggle for equality; the impact of class and gender on racial identity; and black social and political activism. The course covers the time periods from emancipation to the present, including Reconstruction, the Jim Crow era, the great migration, the Civil Rights movement, the Black Nationalist period, and contemporary politics. Credit 3 units.

A&S SD TH FA SSP

History 3891. East Asia Since 1945: From Empire to Cold War

Same as IAS 3891, East Asia 3891.

This course examines the historical forces behind the transformation of East Asia from war-torn territory under Japanese military and colonial control into distinct nations ordered by Cold War politics. We begin with the 1945 dismantling of the Japanese empire and continue with the emergence of the People's Republic of China, the Republic of China (Taiwan), the two Koreas, and Vietnam, all of which resulted from major conflicts in "post-war" Asia. We conclude with a look at East Asia in the post-Cold War era. Credit 3 units.

A&S CD TH FA SSP

History 3908. Ideas, Personalities, and Politics in Revolutionary Russia: Writing-Intensive Seminar

Same as Russ St 3908.

This course explores the revolutions that created, and ended, the Soviet Union. Ideas include: nationalism, socialism, and populism; individuals range from Nicholas II, Rasputin, and Lenin, to Solzhenitsyn, Sakharov, and Gorbachev. Credit 3 units.

A&S TH WI

History 392C. Exile: Jews, Literature, and History

Same as JNE 339C.

A&S CD TH

History 394C. African Civilization to 1800

Same as AFAS 321C.

A&S CD TH FA SSP

History 395C. African Civilization: 1800 to Modernity

Same as AFAS 322C.

A&S CD TH FA SSP

History 398. Advanced Reading Seminar

Amplifies and expands on the themes and factual material in upper-level history courses. Taken in conjunction with 300-level history courses. One class session a week to discuss additional readings. Credit 1 unit.

A&S TH FA SSP

History 399. Senior Honors Thesis and Colloquium: Writing-Intensive Seminar

Prerequisites: Satisfactory standing as a candidate for Senior Honors and permission of thesis director. Credit variable, maximum 6 units.

A&S TH WI FA SSP

History 39F8. Gender and Sexuality in 1950s America: Writing-Intensive Seminar

Same as AMCS 397, WGS 3988.

Historians have recently begun to reconsider the dominant view of the 1950s as an era characterized by complacency and conformity. In this writing-intensive seminar we use the prism of gender history to gain a more complex understanding of the intricate relationship between conformity and crisis, domesticity and dissent that characterized the 1950s for both women and men. Credit 3 units.

A&S SD TH WI

History 39G9. American Culture and Politics Since 1945: Writing-Intensive Seminar

In this course, students learn about the major trends in American cultural history from the end of World War II to the 1990s. In particular, the course focuses on the complex relationship between American culture and politics in the Cold War era. We examine: how American culture reflected, contested, and shaped America's emergence as a global superpower; domestic anti-communism; the growth of a mass consumption economy; generational conflict; changing gender expectations; the rise of protest movements around the 1960s; and the conservative drift of the nation since the 1970s. Materials are drawn from primary sources, including film, music, literature, and social criticism, as well as from secondary sources. Credit 3 units.

A&S TH WI

History 39H8. Internal Empire: The Unification of Britain: Writing-Intensive Seminar

The establishment and the costs of English hegemony over the British Isles. Political and cultural aggression, religious conflict, and social and economic development all contributed to identity formation, whether in the triumphant metropolitan core or in the embittered Celtic periphery. Credit 3 units.

A&S TH WI

History 39J8. Mapping the Early Modern

World: Writing-Intensive Seminar*Same as Med-Ren 3910.*

Societies use maps not just to see the world, but also to assign meaning and order to space: both nearby spaces and spaces on the other side of the world. In this writing-intensive seminar, we study how maps were created, circulated, and interpreted between the 16th and 18th centuries, when Europeans came into contact with new regions throughout the world and reshaped their own backyards through the rise of the modern state and the development of national identity. Credit 3 units.

A&S TH WI**History 39K8. The Many Enigmas of Thomas Jefferson: Writing-Intensive Seminar***Same as AMCS 392.*

Who was Thomas Jefferson, and why has his reputation undergone so many changes? Why has this hero of abolitionists and a man hated by slaveholders become a figure condemned today for being a slaveholder with an African-American mistress? How did an apostle of small government and states' rights become the patron saint of the New Deal and the Democratic Party, and then an inspiration for anarchists? Why have examinations of his public "greatness" and study of his ideas shifted to scrutiny and criticism of his private lapses? Credit 3 units.

A&S TH WI**History 39S8. Rivers: A Comparative Approach to Chinese and World History: Writing-Intensive Seminar***Same as East Asia 398, IAS 398.*

This course uses rivers as geographical frames of reference to address a variety of issues, including physical and social mobility, agriculture and commerce, the state, environmental history, and construction of cultural meanings. Each week begins with a focus on the West River, which flows through two provinces in southern China. Readings on the West River are matched with readings that address similar topics but focus on other important rivers in the world. These rivers may include but are not necessarily limited to the following: Mekong, Irrawaddy, Ganges, Tigris, Euphrates, Nile, Niger, Rhine, Danube, Volga, Mississippi, and Amazon. The temporal focus is approximately 1500–1900, a period that witnessed the zenith of rivers as modes of transportation and commerce. This is a writing-intensive course with a heavy emphasis on revising earlier drafts of written work. Credit 3 units.

A&S TH WI**History 39X9. To Russia and Return: Travel, Literature, and History: Writing-Intensive Seminar***Same as IAS 399, Russ St 39X9, EuSt 399.*

For 300 years, scholars have relied upon the accounts of eye-witness travelers to make Russia less mysterious. One famous traveler was responsible for the idea of despotic tsars, others deemed the Muscovy "rude and barbarous," while still another shaped the end of Russian serfdom. This writing-intensive seminar introduces students to the full sweep of modern Russian history through readings in selected travelers and scholarship based on them. Students eventually research the traveler of their choice. Discussion, library research, oral reports, and a final paper. Prior course work on Russia not required. Credit 3 units.

A&S TH WI**History 4000. IPH Thesis Prospectus Workshop***Same as Hum 401.***A&S** TH**History 4001. Field Work in Historical and Archival Professions**

A fieldwork project under the direction of a member of the Department of History. Normally

planned and undertaken in conjunction with an established museum or archival internship program, this work may be done independently. Credit variable, maximum 6 units.

A&S TH **FA** SSP**History 4002. Directed Field Work: Historical and Archival Professions**

A fieldwork project under the direction of a member of the Department of History. Normally planned and undertaken in conjunction with an established museum or archival internship program, this work may be done independently. Credit variable, maximum 6 units.

A&S TH **FA** SSP**History 4004. Gender, Culture, and Identity in America***Same as WGS 401.***A&S** SD TH **FA** SSP**History 4020. Jerusalem, The Holy City***Same as JNE 4020.***A&S** CD SD TH**History 4021. Identity: From Individual Crisis to Collective Politics**

What does it mean to say that we have, or that we seek, an identity? We seem to need to define ourselves as something, to be able to know "who we are." The psychoanalyst Erik Erikson, who coined the famous concept of "identity crisis" half a century ago, suggested that individual identity becomes a problem when the materials from which we normally construct it, parental identifications and cultural beliefs, come into conflict. Credit 4 units.

A&S TH**History 4033. Race, Sex, and Sexuality: Concepts of Identity***Same as WGS 403.***A&S** SD SS **FA** SSP**History 4051. Diaspora in Jewish and Islamic Experience***Same as JNE 405.***A&S** TH**History 4063. Spanish Symbiosis: Christian, Moors, and Jews***Same as Span 406.***A&S** CD TH **FA** Lit SSP**History 4153. Society and Politics in British India***Same as IAS 4153.*

This course focuses on colonial society and anti-colonial movements in British India; nationalism and popular culture; race and gender; and the movement for Pakistan. Credit 3 units.

A&S SD TH **FA** SSP**History 4154. Post-Colonial South Asia: Nations, Cultures, and Identities***Same as IAS 4154.*

In-depth look at the cultural and political dilemmas posed by the end of colonial rule in India and Pakistan. We investigate the effects of the nation-state upon society and the individual in this part of the world, examine how nationhood is manifested in politics and popular culture, and ask whether there are alternative ways of expressing identity in the modern world. Credit 3 units.

A&S SD TH**History 4156. Europe and the Second World War***Same as IAS 4156, EuSt 4156.*

World War II with its catastrophic consequences was perhaps the most central event in 20th-century European history. It not only ended the era of European predominance, but it resulted in what might even be called the self-destruction of Europe. In this seminar, crucial questions of that development are discussed, concerning the path

leading to war, the beginning of the European war in 1939, and the consequences of the Nazi attack on the Soviet Union in 1941. Credit 3 units.

A&S TH**History 416. Messianic Movements and Ideas in Jewish History***Same as Re St 416.*

Survey of messianism as a central force in Jewish history, stressing both theoretical implications and concrete manifestations. Credit 3 units.

A&S TH **FA** SSP**History 417. Topics in African History: Middle Passages—African Americans and South Africa***Same as AFAS 417.***A&S** CD TH**History 4191. The Politics of the Body in the Writings of Andrew Marvell***Same as Med-Ren 4191, LH 419, E Lit 4191.*

In the 17th century, English men and women were witness to some of the most determined high-level debauchery on record: they also and simultaneously heard the swellings of apocalypticism amid the angry rhetoric of revolution. Andrew Marvell—poet, politician and pamphleteer—is famous for transcending that sordid and inflamed world in his pastorals, but at every turn of a remarkable political and literary career he centered his polemics, his political meditations, as well as his cool lyrics, on the body and its discomforts—his own and others'. Credit 3 units.

A&S TH**History 419B. History of Pan-Africanism: The Birth and Evolution of a Revolutionary Idea***Same as AFAS 419.***A&S** TH**History 4210. Christians and Muslims in the Mediterranean World, 1100–1650***Same as Re St 4210, JNE 4210.*

The medieval and early modern Mediterranean was the crossroads of empire, trade, learning, and faith. This course examines how the diverse countries in this region handled questions of religious difference, cultural encounter, and political and economic rivalry from the Crusades to the flourishing of the Ottoman Empire and the 17th-century revolutions in politics and knowledge. Topics covered include: religious disputes and dialogue; the treatment of religious minorities; diplomacy and war; trade; slavery; and cultural influences. Credit 4 units.

A&S TH**History 4214. A Tale of Two Cities: The Growth and Structure of Chicago and St. Louis***Same as AMCS 4210.***A&S** TH**History 4222. Special Topics in History: Keble College, Oxford**

Credit variable, maximum 10 units.

FA SSP**History 4231. Western Economic History***Same as Econ 423.***A&S** SS **FA** SSP**History 4261. Thought and Society in Late Imperial China: 1600–1911***Same as East Asia 426.***A&S** TH **FA** SSP**History 4273. Topics in the History of Developing Areas: The Middle East***Same as JNE 4272.*

See department. Credit 4 units.

A&S TH **FA** SSP**History 4274. Palestine, Israel, and the Arab-Israeli Conflict**

This course examines the history of the Arab-Israeli conflict from the mid-19th century to the

present. Topics include: Palestine in the late Ottoman period; the development of modern Zionism; British colonialism and the establishment of the Palestine Mandate; Arab-Jewish relations during the Mandate; the growth of Palestinian nationalism and resistance; the establishment of the state of Israel and the dispersion of the Palestinians in 1948; the Arab-Israeli wars; both Palestinian uprisings; and the peace process. Credit 3 units.
A&S TH

History 428. Topics in the History of Developing Areas II

Same as LH 428, Span 439.

See department. Credit variable, maximum 3 units.

A&S TH FA SSP

History 4280. History of Urban Schooling in the United States

Same as Educ 4280.

A&S TH

History 4288. Higher Education in American Culture

Same as Educ 4288.

A&S TH FA SSP

History 4290. History of Modern American Social Theory

Same as STA 4290.

A&S TH FA SSP

History 4293. History and Social Theory

Same as MLA 4293, AMCS 4293, STA 4293.

An advanced reading course for upper-division undergraduates and graduate students that explores the uses of modern social theory in historical inquiry. In this course, students read some basic texts of Karl Marx, Max Weber, and Emile Durkheim as well as recent historical studies that rely in some respects on their work. Credit 3 units.

A&S TH FA SSP

History 4322. The Later Roman Empire: From Constantine to Justinian

Same as Classics 442.

A&S TH

History 4412. The British Empire in Cross-Cultural Perspective, 1800–1970

Same as EuSt 4412, IAS 4412, IA 4412.

In the past two centuries, British imperialists spread their political, economic, and cultural institutions around the world. Historians have viewed this process as the “modernization” of Africa and Asia through the introduction of Western culture and technology, but in reality, British imperialism mixed and diffused the various cultures of the Empire around the globe. Britain was the primary political force, but British imperialists could govern non-Western subjects only by co-opting local support and adapting institutions. Therefore Africans and Asians influenced the domestic institutions and culture of the Empire and even Britain itself. Credit variable, maximum 4 units.

A&S TH FA SSP

History 442. European Intellectual History: 1789–1890

Same as IAS 442, Lw St 442, STA 466, EuSt 442, LH 442.

The development of modern rationalist individualism out of the French and Industrial Revolutions, its extension in Romanticism and Hegelian thought, and the reactions of modern ideologies (liberalism, conservatism, nationalism, and socialism), Romantic individuality, the conflicted responses to industrialization and modernity, liberal culture, Marxism, the aesthetic reaction, and Nietzsche. Credit variable, maximum 4 units.

A&S TH FA SSP

History 4422. History, Memory, and Collective Identities

Same as Comp Lit 4422, STA 4422, IAS 4422.

Do social groups have a “memory”? What do we

mean when we talk about “history and memory”? How is the past “remembered” in social settings, and what role do these remembrances play in the construction and transmission of identity? These are some of the questions that frame this course. Students read from cognitive psychology, history, social thought, autobiography, and fiction texts. Credit 4 units.

A&S TH FA SSP

History 443. European Intellectual History: 1890–1930

Same as History 443A, IAS 443, STA 443, EuSt 443, LH 491.

This course explores the crises in individualist and nationalist thought and culture in the years before and after World War I, focusing on the turn toward subjectivity, irrationalism and relativism. Topics include: the emergence of irrationality in political and social thought; the rise of psychoanalysis; the birth of modernism in painting, music, and literature; relativism in philosophy and the social sciences; the crisis of World War I; the beginnings of Fascist and Nazi ideology; and the emergence of existentialism. Credit variable, maximum 4 units.

A&S TH FA SSP

History 444. European Intellectual History: 1930–2000

Same as LH 444, EuSt 444, STA 4662, IAS 444.

This course is an exploration of European thought and culture from the intellectual and artistic response to Nazism in the 1930s to the postmodernism of the present. Topics include: art and political commitment before and after World War II; existentialism in France; the intellectual responses to the Cold War, such as the theory of totalitarianism; the “Critical Theory” of the Frankfurt School and the rise of Marxist humanism; the student movements of 1968; the critique of technological society; structuralism and post-structuralism; contemporary feminist theory; and postmodernism. Credit variable, maximum 4 units.

A&S TH FA SSP

History 4442. The Jewish Experience in Eastern Europe

Same as IAS 4442, Russ St 4442, EuSt 4442, JNE 4442.

A study of Jewish culture, society, and politics in Poland-Lithuania, Hungary, the Czech lands, Russia, Romania, and the Ukraine, from the 16th century through the 20th century. Among the topics covered are: economic, social, and political relations in Poland-Lithuania; varieties of Jewish religious culture; Russian and Habsburg imperial policies toward the Jews; nationality struggles and anti-Semitism; Jewish national and revolutionary responses; Jewish experience in war and revolution; the mass destruction of East-European Jewish life; and the transition from Cold War to democratic revolution. Credit 3 units.

A&S CD TH FA SSP

History 4443. Jews and the City: Urban Dimensions of Modern Jewish Experience

Same as JNE 4443, EuSt 4443, IAS 4443.

This course examines the spatial, material, and cultural geographies of Jewish life in the modern metropolis from the ghetto of Venice to the streets of Spinoza’s Amsterdam; from the boulevards of late-19th-century Paris and the Viennese Ringstrasse to the bustling port of Odessa; from the heartland of traditional European Jewish culture in the Russian Pale of Settlement to the new lands of promise of New York’s Lower East Side and the sand-swept streets of modern Tel-Aviv. Credit 3 units.

A&S CD TH

History 4446. European Social History: 1750–1930

Same as IAS 4446, EuSt 4446.

This course examines both the old social history (which focused on social classes and “the social

question”) and the newer social history of the Annales School (which stresses the social conditions of everyday life). Most of the semester is spent surveying selected topics of the new social history, such as demography, marriage and the family, sexuality and reproduction, diet and cuisine, drink and drugs, disease and public health, and topics in material culture such as housing. Credit 3 units.

A&S TH

History 447. Origin and Development of Freud’s Thought: 1886–1939

An intensive analysis of the development of Freud’s thought from the beginning of psychoanalysis to his last writings. We look at the Viennese and broader European contexts, but the main focus is on Freud’s own texts. Credit 3 units.

A&S TH FA SSP

History 4481. Race Politics in 19th- and 20th-Century America

Same as AFAS 448.

A&S SS FA SSP

History 448C. Russian History to the 18th Century

Same as IDEV 448C, Russ St 448C, Re St 448C. Medieval Russian history is in turmoil: Ukrainians charge the Russians with stealing their history; new perspectives from world history have fundamentally altered our understanding of the Viking age and of Russia’s infamous “Tatar Yoke”; Ivan the Terrible has lost his demonic appearance, and the hapless Romanovs before Peter the Great are now praised as the most successful of all early-modern monarchs. Topics include: Kievan politics, society and religion; the Mongol world; the rise of Moscow; consolidation and empire; religious crisis; and the dramatic first contacts with the West. Credit variable, maximum 4 units.

A&S TH FA SSP

History 449C. Imperial Russia

Same as EuSt 449, Russ St 449C, IAS 449C.

The Russian tsars, from Peter the Great to Nicholas II, built the empire that became the Soviet Union. Now that the U.S.S.R. is gone, historians focus not only on the governance of the Russians but also on the fate of scores of nationalities ruled by them. This course also explores the changing reputation of Russia’s rulers, especially of the women rulers of the 18th century, the rise of an intelligentsia committed to radical reform, the fate of millions of serfs, and the government’s efforts to steer a path between Muscovite traditions and a dynamic West. Credit variable, maximum 4 units.

A&S TH FA SSP

History 4562. Science and Empire

Credit 3 units.

A&S TH

History 457. Topics in European History I

See *Course Listings* for current topics. Credit 3 units.

A&S TH FA SSP

History 4580. Topics in British History: Beyond the Beatles—Britain in the 1960s

Same as IAS 4580, EuSt 4580.

This seminar examines one corner of the vast international upheaval associated with “The Sixties,” focusing on British society, culture, and politics from 1956–1970—that is, from the break-up of the Empire to the break-up of the Beatles. Other topics include: the Cold War; the Campaign for Nuclear Disarmament; student activism and the New Left; commonwealth immigration; second-wave feminism; the troubles in Northern Ireland; labor and industrial relations; and major developments in literature, film, and theater, as well as the conservative political resurgence that has subsequently characterized British politics. The

course consists of lectures, films, readings, and discussions. Credit 3 units.

A&S TH

History 459. Topics in European History

See *Course Listings* for current topics. Credit variable, maximum 3 units.

A&S TH FA SSP

History 460. Topics in European History IV

See *Course Listings* for current topics. Credit 4 units.

A&S TH FA SSP

History 4631. Topics in English Literature and History: The 17th Century

Same as *E Lit 4631*.

A&S TH FA Lit

History 4651. Postcolonial Theory and Society

Same as *STA 465*.

A&S SS FA SSP

History 4653. Cultural Patriarchy

Same as *LH 4653*.

A&S TH FA SSP

History 4680. Cities in Asia

Same as *IAS 468*.

A&S TH

History 4681. Topics in Literature and History: The Age of Lincoln—America in the 1850s

Same as *E Lit 4681, LH 465*.

This seminar is an interdisciplinary examination of the culture and politics of America in the critical watershed decade before the Civil War. The course explores how a range of writers, some avowedly literary, others more decidedly political, advanced their versions of America in the larger culture, at a time when all things American—democracy, religious destiny and nationality itself—were becoming profoundly problematic. Credit 4 units.

History 4689. American Intellectual History to 1865

Same as *AMCS 4689, Pol Sci 4689*.

This course presents an overview of American intellectual history from the early 17th century and the founding of the first English settlements in North America to the mid-19th century and the American Civil War. Credit 3 units.

A&S TH

History 469. American Intellectual History Since 1865

Same as *STA 469, AMCS 470*.

This course provides an overview of major trends and figures in the history of American intellectuals from the end of the Civil War to the present. Topics covered include: pragmatism; the emergence of professional social science; differing reactions to the growth of a corporate-dominated mass production and mass consumption society; intellectuals' involvement with radical and reform movements from progressivism to the New Left; the efforts of intellectuals to theorize ethnic and racial diversity and discrimination; reactions to mass culture; and postmodernism. We study a variety of American intellectuals, including William James, John Dewey, W.E.B. DuBois, Thorstein Veblen, Jane Addams, Margaret Mead, C. Wright Mills, Thomas Kuhn, and Richard Rorty. Credit 4 units.

A&S TH

History 4693. East Asian Feminism

Same as *East Asia 469*.

A&S SD TH

History 4743. Imagining the West

Same as *Art-Arch 4743*.

A&S TH FA AH

History 4751. Intellectual History of Feminism

Same as *WGS 475*.

A&S TH FA Lit

History 4752. American Culture: Traditions, Methods, and Visions

Same as *AMCS 475*.

A&S TH

History 4771. Topics in Religious Studies: Popular Chinese Religion

Same as *Re St 476*.

A&S TH FA AH Lit

History 481. History of Education in the United States

Same as *Educ 481*.

A&S TH FA SSP

History 4821. Theory and Methods in Literature and History

Same as *Hum 405*.

A&S TH

History 4833. Topics in African History

See *Course Listings* for current topics. Credit 3 units.

A&S TH

History 4841. Core Seminar in East Asian Studies: East Asia in Scholarly Literature

Same as *East Asia 484*.

A&S CD TH WI FA SSP

History 4842. The Japanese Empire in Asia, 1874–1945

Same as *East Asia 4842, ACC 4842, IAS 4842*.

This course examines the expansion of the Japanese Empire in Asia from 1874–1945, focusing on Japan's acquisition of neighboring territory and the subsequent building of colonies in Taiwan, Korea, and Manchuria. The course explores the concepts of imperialism and colonialism, how they functioned in East Asia, and how they intersect with other major developments in Asia, including ideas of civilization and race, the formation of the nation, and the growth of capitalism. Topics include: the role of women in Japanese imperialism; the overlap of militarism and colonialism; and the experiment of the puppet state of Manchukuo. Credit 3 units.

A&S CD TH

History 4844. Women and Confucian Culture

This course explores the lives of women in East Asia during a period when both local elites and central states sought to Confucianize society. The course focuses on Ming (1368–1644) and Qing (1644–1911) China, but also examines these issues in two other early modern East Asian societies: Yi/Choson (1392–1910) Korea and Tokugawa (1600–1868) Japan. Assigned reading primarily consists of historical monographs and articles produced in the last decade. Course readings are designed to expose students both to a variety of theoretical approaches and to a wide range of topics, including: women's property rights; the medical construction of gender; technology, power, and gender; and state regulations on sexuality. Credit 4 units.

A&S TH FA SSP

History 487. Topics in American History: African-American Intellectual History

Same as *WGS 487, History 487*.

This course traces the changing nature of African-American thought, examine the competing traditions and intellectual tensions that have shaped African-American ideas, and focus on the complex relationships between those ideas and the larger contexts of American social, political, and intellectual life. Credit variable, maximum 4 units.

A&S TH FA SSP

History 4872. Colonial Cities and the Making of Modernity

Same as *IAS 4872, JNE 4872, URST 4872*.

Massive urban growth has been a central result of the incorporation of many areas—both central and

peripheral—into the global economy in the 19th and 20th centuries. As such, scholars have long theorized urbanization as a key component of modernity, but they have usually done so by looking at urbanization and modernization from the perspective of the West. This course investigates the character of cities in the colony and then uses these empirical and analytical entry points to examine critically some theories of modernity. The geographic focus of the course is primarily on cities in the Middle East, North Africa, and South Asia. Our questions include: What role(s) did the urban play in creating modernity in the colony? How did local histories and contexts modify the experience of modernity and the specific developments of cities? What technologies of power characterize modernity in urban spaces? How might we redefine modernity from a theoretical perspective when it is viewed primarily from the colony rather than the metropole? Is it useful to think, as some scholars have suggested, of alternative or multiple modernities? Credit 3 units.

A&S CD TH FA SSP

History 488. Topics in American History: Thorstein Veblen and His America

Same as *STA 4888, AMCS 488*.

This course examines the work of Thorstein Veblen, iconoclastic economist and radical social critic, along with the social, cultural, and political context of his career from the 1890s to the 1920s. Besides examining a number of Veblen's key works, we study the currents of science, philosophy, and social thought that influenced him; his stance toward liberalism, socialism, labor, and progressive reform; his impact on cultural criticism; and the development of the social sciences in the United States. Credit 4 units.

A&S TH FA SSP

History 4890. Advanced Seminar: Latin America and the United States in the 20th Century

Same as *AMCS 4890, IAS 4892, LatAm 4890*.

Social, economic, and political relations between Latin America and the United States in the 20th century. Emphasis on internal developments that help to explain international interaction. Topics include: United States expansionism; Latin-American nationalism; the Good Neighbor Policy; revolution in Mexico and Cuba; intervention in Central America; and issues involving drugs and free trade. Credit 4 units.

A&S TH FA SSP

History 4891. Advanced Seminar: Topics in Modern Chinese Literature: History, Memory, and Identity

Same as *Chinese 489*.

A&S TH FA Lit

History 4892. Advanced Seminar: Oral History

Same as *AFAS 4892, AMCS 4892*.

This is a course about how we remember and represent the past. In a small discussion-based setting, students grapple with issues and themes in oral and public history in America. We look at the ways in which both individuals and institutions organize the past in the stories they tell. Students look at a range of locations where memory and history continually intersect: the individual, the family, the neighborhood, the church and synagogue, the museum, the monument, the historic site, the theme park, the classroom, film and television. Credit 4 units.

A&S TH FA SSP

History 4893. Advanced Seminar: Protests of the 1950s, '60s, and '70s

Same as *AMCS 4893*.

A research seminar concerning the history of protest movements that emerged and flourished in the United States from the 1950s to the 1970s, including the civil rights, peace, New Left, Black

Power, antiwar, feminist, Chicano, Native American, environmentalist, and gay and lesbian movements. The ideologies, practices, organization, evolution, and repression of these social movements are all matters of concern. Credit 4 units.
A&S TH FA SSP

History 4894. Advanced Seminar: The United States in Vietnam: Origins, Developments, and Consequences

Same as Pol Sci 464, IAS 4894, AMCS 4894, IA 4894.

This course focuses on America's involvement in Vietnam from the era of French colonialism through the collapse of U.S. intervention. Special attention to political, military, economic, and cultural aspects, as well as to international relationships, and the significance of the experience and subsequent developments upon both American and Vietnamese societies. Credit 4 units.
A&S TH FA SSP

History 4900. Advanced Seminar: Intellectual Revolution in 20th-Century China

Same as IAS 4900, STA 468.

This seminar focuses on the turbulent intellectual history of China from the China-Japan war of 1895 to the Japanese invasion of China in 1937. Expressions of China's political and social upheavals introduced in literary, philosophic, and scholarly texts in English translation. Key issues are: China's cultural relations with Europe and America; the evolution of Chinese nationalism; the formulation of a "new culture" for China; the emergence of socialism and communism; and the role of the new intelligentsia. Credit 4 units.
A&S TH FA SSP

History 4903. Advanced Seminar: The Age of Lincoln

See department. Credit 4 units.

A&S TH FA SSP

History 4905. Advanced Seminar: Issues in the History of American Medicine

Same as AMCS 4905.

This seminar examines major issues and themes in the history of American medicine. Specific topics include: the changing image of the physician; professional authority; and the rise in the status of the medical profession during the past 100 years. Credit 4 units.

A&S TH FA SSP

History 4907. Advanced Seminar: Women and Social Movements in the United States

Same as WGS 4908, Lw St 4907, WGS 4908.

In this course we examine U.S. women's participation in diverse movements during the 19th and 20th centuries, ranging from suffrage and feminism, to the labor movement, civil rights activism, and conservative and queer movements. Among the questions we ask: How does the social and political position of different groups of women shape their participation in social movements? Why are certain social movements successful, and how do we define success? What does looking at women's experience in particular tell us about social movements in general? Credit 4 units.
A&S SD TH FA SSP

History 4910. Advanced Seminar: Modern Chinese Science and Technology

Scientific and technological development has been a constant concern among China's great reformers and revolutionaries. The drive to gain parity with the West's and Japan's scientific and technological prowess has been complicated by the desire of China to avoid dependence as well as pollution by Western values that might accompany science and technology. Credit 4 units.

A&S TH FA SSP

History 4914. Advanced Seminar: Time of Trial, 1665–1668

Amid growing excitement—new science was taking hold even as 1666 seemed to promise the apocalypse—London's great plague of 1665 ushered in a series of disasters. In 1666 the City burned, in 1667 England suffered its greatest naval disaster ever, while the royal court dissolved into a welter of sexual corruption. This seminar studies the ways in which England negotiated the unnerving social, cultural, religious, and epistemological challenges of these years. Credit 4 units.

A&S TH FA SSP

History 4916. Advanced Seminar: Democracy in Latin America

Same as IAS 4916, LatAm 4916.

See department. Credit 4 units.

A&S TH FA SSP

History 4917. Advanced Seminar: Islamic History

Same as JNE 4917.

See department. Credit 4 units.

A&S TH FA SSP

History 4918. Advanced Seminar: Sexuality in America

Same as AMCS 4954, WGS 4918.

Does sex have a history, and if so, how can we study it? This seminar examines important themes in the history of sexuality: the relationship between sexual ideologies and practices; racial hierarchy and sexuality; the policing of sexuality; construction of sexual identities and communities; and sexual politics at the end of the century. We also spend time discussing theoretical approaches to the history of sexuality, as well as methodological issues, including problems of source and interpretation. Credit 4 units.

A&S TH FA SSP

History 4919. Advanced Seminar: European Women's History

This seminar emphasizes recent scholarship and debates in European women's history. Credit 4 units.

A&S TH FA SSP

History 4920. Advanced Seminar: American Education

Same as Educ 440.

A&S SD TH FA SSP

History 4921. Advanced Seminar: Modern Japanese History

Same as IAS 4921, East Asia 4903.

See department. Credit 4 units.

A&S TH FA SSP

History 4923. Advanced Seminar: Communist China

Same as East Asia 4923, IAS 4925.

This seminar explores the historical and social science literature that has shaped our understanding of the origins and development of Chinese Communism. Complementing this literature are translated samples of primary materials from policy documents, political philosophy, historical scholarship, and fiction. Credit 4 units.

A&S TH FA SSP

History 4927. Advanced Seminar: Law and Culture in America from 1607–1776

Same as AMCS 4927.

See department. Credit 4 units.

A&S TH FA SSP

History 4928. Advanced Seminar: Reading the Body Politic in Early Modern England

Same as LH 4928.

This course explores the work of containment done by a figure of speech, and also its disruptive potential. It also analyzes the implications of the

dismemberment of the supreme body natural, that of King Charles I, in revolution. Credit 4 units.

A&S TH FA SSP

History 4930. Advanced Seminar in History: The Transformation of West European Societies, 1960–1990

Same as IAS 4930, EuSt 4930.

There is a growing consensus among historians and social scientists that Western societies experienced a crucial period of change in the last decades of the 20th century. While the post-war period of economic reconstruction and accelerated industrial growth came to an end, everyday life altered, traditional certainties were challenged, and a new debate on social values was started. This seminar discusses these developments with a comparative view on West European societies and by combining macro-economic and macro-social approaches with insights into the spheres of individual experience. Credit 4 units.

A&S TH

History 4932. Advanced Seminar: Japanese Foreign Relations

Same as East Asia 4932, IAS 4932.

This seminar explores the priorities and policy-making institutions that have shaped Japan's modern foreign relations. Credit 4 units.

A&S TH WI FA SSP

History 4933. Advanced Seminar: Africans and Britons in the Empire, 1787–1914

The 19th century in Britain opened with great popular campaigns based on a straightforward appeal to a common humanity, which brought about abolition of the British slave trade and slavery in the empire. At the same time in Africa, Britons and Africans joined in a genuine partnership, the object of which was to evangelize the continent, and religious ties were complemented by growing cooperation in business and commercial affairs. Credit 4 units.

A&S TH FA SSP

History 4934. Advanced Seminar: The British Empire in Cross-Cultural Perspective, 1800–1970

Same as WGS 4934, EuSt 4934, IAS 4934.

This seminar examines the complex dynamics of and responses to British imperialism. Credit 4 units.

A&S TH FA SSP

History 4937. Advanced Seminar: From World War to Cold War: America, 1943–1960

Same as AMCS 4937.

The United States enjoyed global supremacy during and after World War II, but not without challenges and crises at home and abroad. This seminar identifies and seeks to understand these developments, how Americans confronted them with what consequences, and how historians have interpreted the period. Credit 4 units.

A&S TH FA SSP

History 4941. Advanced Seminar: The Inquisition in Europe, Asia, and Latin America, 1200–1700

Same as Med-Ren 4941.

This seminar studies the history of the Inquisition from its beginnings in southern France in the first half of the 13th century up to the investigations undertaken by Dominicans and Franciscans in 17th-century Mexico and Peru. Along the way the seminar focuses upon other inquisitions in Europe (especially those made in Italy, Spain, and Germany), and the hunt for heresy in Goa and the Philippines. This seminar reads inquisitional manuals (books on how to conduct an inquisition) and original inquisitional documents (the records of the trials and interrogations). Consequently, the history of heresy and witchcraft, as understood by

people in the past and historians in the present, is discussed. Credit 4 units.

A&S TH FA SSP

History 4942. Advanced Seminar: Anti-Semitism

Same as Re St 486.

An analysis of anti-Semitism as a historical force, focusing primarily on Europe in the 19th century and first half of the 20th century. Credit 4 units.

A&S TH FA SSP

History 4944. Advanced Seminar: Modernism and Masculinity

Same as LH 493.

The premise for this seminar is that the modernist movement, in the arts, literature, painting, music, and aesthetic theory that arose between 1890 and 1914 gives strong evidence of a crisis in traditional masculine identity. This is reflected in such themes as: anxiety about sexuality; the "demonic woman;" degeneration and the need for physical/spiritual regeneration; and the ambivalent exploration of homosexuality. We look back at possible historical connections between a pervasive sense of loss of masculine autonomy and power in modernist work, and political and social developments such as the rise of socialist, populist, and women's movements and the increasing medical and legal concern with "deviancy;" all of which threatened upper-class male authority during the period. Credit 4 units.

A&S TH FA SSP

History 4945. Advanced Seminar: Modern Black America

Same as AMCS 4945.

Credit 4 units.

A&S TH FA SSP

History 4946. Advanced Seminar: "The Federalist" and Its Critics

Same as Pol Sci 4946, Lw St 4946, AMCS 4946.

The texts and contexts of the political debates surrounding the writing and ratification of the U.S. Constitution, concentrating on the 85 "Federalist" essays composed by Alexander Hamilton, James Madison, and John Jay under the collective pseudonym of "Publius." Written after the Philadelphia Constitutional Convention in 1787 for the purpose of urging ratification in New York, the Federalist papers demonstrate the power (and limits) of ideas and provide an ideal subject for the historical study of a text in context. For that reason, this course studies the interaction of political philosophy and the practical realities of politics. We examine the political experiences of the men who drafted these essays, the intellectual traditions they drew on, the persuasive rhetorical strategies they used, and the creativity of their product. Finally, we seek to assess the lasting impact of "The Federalist" in the American political and Constitutional tradition. Credit 4 units.

A&S TH FA SSP

History 4947. Advanced Seminar: World and Comparative History in Theory and Methods

This seminar is an introduction to the methods and theoretical assumptions that historians have used to study global interactions between peoples, cultures, and nations. Topics include: world systems and other theoretical models; the Atlantic, Mediterranean, and Indian Ocean worlds; global and regional trade; imperialism; diaspora studies; ecological exchange; and evangelical religions. Credit 4 units.

A&S TH FA SSP

History 4951. Advanced Seminar: The Civil Rights Movement

Same as Lw St 4951, AFAS 4952, AMCS 4950, AMCS 4951, URST 4951.

Research seminar with focus on historiography and various aspects of the institution of slavery in

the American South. Prerequisite: see headnote. Credit 4 units.

A&S SD TH FA SSP

History 4952. Advanced Seminar: Modern British History

The seminar is devoted to the consideration of new interpretations of such questions as political reform, the industrial revolution, the status of women, and imperialism in 19th-century Britain. Credit 4 units.

A&S TH

History 4959. Advanced Seminar: Modern Japan

Same as East Asia 4959.

See department. Credit 4 units.

A&S TH

History 4961. Advanced Seminar: Africa and Britain, 1800–1970

This seminar examines African and British perspectives on the colonial enterprise. Co-taught by a specialist in British history and an Africanist historian, it adopts a comparative approach to the study of both the ramifications of British imperialism in Africa and Africa's impact on metropolitan Britain. Credit 4 units.

A&S TH FA SSP

History 4962. Advanced Seminar: African-American History

See department. Credit 4 units.

A&S TH FA SSP

History 4967. Advanced Seminar: Migration and Travel in China, 1500–1900

Same as IAS 4967, East Asia 4967.

Despite the growing importance of native-place identities during the late Imperial era, China had an increasingly mobile population. This course examines the movement of people in China approximately from 1500 to 1900, including voluntary and forced migration, travel associated with trade, travel for civil service examinations and official postings, exile, urban sojourning, religious pilgrimages, and touring. In addition, this course focuses on relations between locals and sojourners or migrants, as well as the perceived dangers that geographic mobility posed for the state and the social order. Readings include both historical studies and translated primary sources such as travel accounts, diaries, and poetry. Credit 4 units.

A&S TH

History 4968. Advanced Seminar: War, Society, and Identity: The European Novel of the 1920s

Same as EuSt 4968, Hum 4968, IAS 4968.

The 1920s saw the publication (or writing) of a disproportionately large number of the great novels of the 20th century, including James Joyce's *Ulysses*, Virginia Woolf's *Mrs. Dalloway*, and *To the Lighthouse*, Thomas Mann's *Magic Mountain*, Robert Musil's *The Man Without Qualities*, Herman Hesse's *Steppenwolf*, and the last volume of Marcel Proust's *In Search of Time Past*. All of these novels reflect the impact of World War I, and many introduce, for the first time in history, self-conscious explorations of the idea of identity. Clearly, the war and its aftermath caused an immense upheaval in the previously unquestioned sources of selfhood and made personal identity a problem instead of a given. The seminar examines these issues through a number of the decade's novels. Credit 4 units.

A&S TH

History 4971. Advanced Seminar: Selected Topics in Anglo-American Legal History

Same as Law 703A, AMCS 4971.

A research and writing seminar on a specific topic chosen by the student. The course introduces students to the scholarship on the history of law and examines certain key cases or questions as exam-

ples of the field and its potential. Credit variable, maximum 4 units.

A&S TH FA SSP

History 4972. Advanced Seminar: The Japanese Empire in Asia, 1874–1945

This course examines the expansion of the Japanese Empire in Asia from 1874 to 1945, focusing on Japan's acquisition of neighboring territory and the subsequent building of colonies in Taiwan, Korea, and Manchuria. We explore the concepts of imperialism and colonialism, how they functioned in East Asia, and how they intersect with other major developments in Asia, including ideas of civilization and race, the formation of the nation, and the growth of capitalism. Topics include: the role of women in Japanese imperialism; the overlap of militarism and colonialism; and the experiment of the puppet state of Manchukuo. Credit 4 units.

History 4973. Advanced Seminar: Criminals, Lunatics, Rebels, and Colonialism

Same as IAS 4973, Lw St 4973.

This seminar examines the definitions of crime, rebellion, sickness, and insanity in Europe and in India, and looks closely at the connections between incarceration and colonial rule. We ask whether Foucault's analysis of punishment is applicable to colonized societies, where race was a constant factor in the relationships between the rulers and the ruled. We also look at how Indians responded to new systems of punishment, treatment, and control: whether they were simply punished, treated, and controlled, or whether they co-opted the institutions to serve their own needs. Credit 4 units.

A&S TH FA SSP

History 4974. Gender, Property, and Law in American Society

Same as WGS 4974, Lw St 4974, AMCS 4974.

This course aims to explore the intersections of gender relations, work and property in law, custom, and culture from the colonial period to the late 20th century. We read a wide range of articles and books, all of which in some way address the relationships among gender ideologies, social practices, and property relations in American society. Credit 4 units.

A&S TH FA SSP

History 4976. Advanced Seminar: The American Trauma: Representing the Civil War in Art, Literature, and Politics

Same as AMCS 497, Art-Arch 4976.

This seminar is an interdisciplinary examination of how Americans represented the Civil War during and after the titanic conflict, with special attention given to the period between 1865 and 1915. The course explores how painters, novelists, photographers, sculptors, essayists, journalists, philosophers, historians, and filmmakers engaged the problems of constructing narrative and reconstructing national and individual identity out of the physical and psychological wreckage of a war that demanded horrific sacrifice and the destruction of an enemy that could not be readily dissociated from the self. Thomas Eakins, Walt Whitman, Herman Melville, the Jameses (William and Henry), Mark Twain, Augustus St. Gaudens, Kate Chopin, W.E.B. DuBois, Frederick Douglass, Henry Adams, Mary Chesnut, Charles Chesnut, George Barnard, and Alexander Gardner are some of the figures to be considered. Credit 4 units.

A&S TH

History 4982. Advanced Seminar: Women and Confucian Culture in Early Modern East Asia

Same as East Asia 4982, ACC 4982, WGS 4982, IAS 4982.

This course explores the lives of women in East Asia during a period when both local elites and

central states sought to Confucianize society. We focus on Ming (1368–1644) and Qing (1644–1911) China, but also examine these issues in two other early modern East Asian societies: Yi/Choson (1329–1910) Korea and Tokugawa (1600–1868) Japan. Credit 4 units.
A&S TH

History 4986. Advanced Seminar in History: European History

Same as IAS 4986, EuSt 4986.
 See department for details. Credit 4 units.
A&S TH

History 4987. Advanced Seminar: Antislavery — The Legal Assault on Slavery in St. Louis
Same as Pol Sci 4987, Lw St 4987, AFAS 4893, AMCS 4987.

This seminar begins with a survey of the legal and constitutional arguments made against slavery in English and American courts since the 1600s and examines the culture and tactics of antislavery as it emerged in Antebellum America, as well as the meaning of the Dred Scott decision. On that basis, students research a particular freedom suit from the online manuscript court records of the St. Louis Circuit Court. Credit 4 units.
A&S SD TH

History 4988. Advanced Seminar: The French Revolution

Same as IAS 4988, EuSt 4988.
 This is an advanced seminar open to both upper-division undergraduates and to graduate students. It functions as both an advanced readings seminar and as a research paper colloquium. As a readings seminar, students cover major scholarly debates on different aspects of the French Revolution. Other topics for the seminar include such issues as: the revolution and women; the reign of terror; and the Vendean civil war. As a research colloquium, each student undertakes research on an important aspect of the revolution and presents a paper to the seminar. Credit 4 units.
A&S TH

History 4990. Advanced Seminar: History of the Body

Same as WGS 4990.
 Do bodies have a history? Recent research suggests that they do. Historians have tapped a wide variety of sources—including vital statistics, paintings and photographs, hospital records, and sex manuals—to reconstruct changes in how humans have conceptualized and experienced their own bodies. We explore this exciting new field of research, with particular attention to the intersection of European cultural history and history of medicine since 1500. Topics include: the history of sexuality and sexology; women and self starvation; medical anatomy and evolving constructs of the body in sickness and health; physical culture and its relation to modern nationalism; and changing notions of beauty and fashion. Credit 4 units.
A&S SD TH

History 4991. Advanced Seminar: Fascism in Europe Between the Wars

The notion “fascism” continues to be controversial. Was there a “generic” fascism present in European countries between the wars? Or should the term be confined to the original Italian phenomenon? How far can Italian fascism and Nazism be compared? This seminar puts these questions into a comparative view. Topics include: early theories of fascism; the rise and structure of the fascist movements; the seizures of power in Italy and Germany; the role of racism and anti-Semitism; violence and war. Moreover, recent historiographi-

cal tendencies focusing on cultural aspects of fascism are also discussed. Credit 4 units.

A&S TH

History 4992. Advanced Seminar: Foucault, Habermas, and Liberal Humanism

Michel Foucault is frequently depicted as the most powerful late-20th century critic of Enlightenment humanism, and of its political form, liberal individualism. Jurgen Habermas, arguably contemporary Europe’s most important living philosopher, has been their most ardent and sophisticated philosophical defender, and in consequence, a sharp critic of Foucault. This seminar, through extensive reading in the works of both, explores the debate between the two over what Habermas has called “the project of modernity.” We analyze the premises of Foucault’s critique and Habermas’ efforts to establish a viable philosophical and sociological foundation for a genuinely deliberative democracy in a culturally diverse world. A main focus of concern is the definitions and problems of selfhood within each of the two bodies of thought. Credit 4 units.

A&S TH

History 4997. Advanced Seminar: Individual and Society in Revolutionary China

Same as IAS 4997, East Asia 4997.
 The history of China in the past 120 years has been a history of continuous revolution. Milestones of that revolutionary history include the reform of 1898, the demise of the Qing dynasty, the founding of the Republic of China, the founding of the People’s Republic, and the Post-Mao transformation, as well as the dramatic political changes that created sweeping social, economic, and cultural changes. Credit 4 units.

History 4998. Advanced Seminar: Heresy and Holiness in the Middle Ages

Same as Re St 4998, Med-Ren 4998.
 This seminar studies the history of heresy in the Middle Ages from 300 to 1600. It begins in the late Roman empire by investigating Gnosticism and Manichaeism, moves to the Byzantine empire to look at heresies such as Paulicianism and Bogomilism, then shifts the focus to the apparent rise of heresy in Western Christendom in the 11th century, before studying the great medieval heresies that flourished, were persecuted, and disappeared, between the 12th and 16th centuries. Among the heresies to be studied are the famous “Cathars”—a diverse group of heretics that it should be noted, never went by that name—against whom the Albigensian Crusade (the first holy war sanctioned by the papacy against other Christians) was launched in 1208 and the reason for the first inquisitions into heretical depravity. Credit 4 units.

A&S TH

History 4999. Advanced Seminar: Introduction to Comparative Civilizational Analysis: United States, China, and Japan

Same as IAS 4998, STA 4999, Pol Sci 4999, East Asia 4999.
 This course provides an introduction to the Weberian tradition of comparative civilization analysis. Our goal is to clarify the ways in which the cultural and structural dimensions of social organization are interwoven, in a way that allows us to better understand divergences in the structure and dynamics of economy, state, and society across civilizations. Credit 4 units.

A&S TH

History 500. Independent Work

Prerequisite: permission of the chair of the department. Credit variable, maximum 6 units.

Institutional Social Analysis

Director

Itai Sened, Professor
 (Chair, Department of Political Science)
 Ph.D., University of Rochester

Professors

Lee Benham
 (Economics)
 Ph.D., Stanford University

John Drobak
 George Alexander Madill
 Professor of Law
 (Law)
 J.D., Stanford University

Steven Fazzari
 (Economics)
 Ph.D., Stanford University

Jack Knight
 Sidney W. Souers Professor of Government
 (Political Science)
 Ph.D., University of Chicago

Jackson Nickerson
 (Business)
 Ph.D., University of California–Berkeley

Douglass C. North
 Spencer T. Olin Professor in Arts & Sciences
 (Economics)
 1993 Nobel Laureate in Economic Sciences
 Ph.D., University of California–Berkeley

Associate Professors

John V. Nye
 (Economics)
 Ph.D., Northwestern University

Sunita Parikh
 (Political Science)
 Ph.D., University of Chicago

Paul Rothstein
 (Economics)
 Ph.D., University of California–Berkeley

Andrew Sobel
 (Political Science)
 Ph.D., University of Michigan

Gautam N. Yadama
 (Social Work)
 Ph.D., Case Western Reserve University

Assistant Professor

Margaret Brown
 (Anthropology)
 Ph.D., Washington University

Visiting Lecturer

Elizabeth Wilner
 (Political Science)
 Ph.D., Washington University in St. Louis

The Minor: The Institutional Social Analysis Minor is an interdisciplinary program that allows you to learn about fundamental institutions such as property rights, markets, social norms, and constitutional democracy. You will also learn about the key role that

these institutions play in economic development and political governance.

With a minor in Institutional Social Analysis, you will take courses in different departments, although all courses share a conceptual orientation (a focus on institutions) and a commitment to interdisciplinary social science.

For the minor you are required to take a total of 15 units of credit, of which at least 12 must be outside the department of your major. Courses for the ISA minor cannot be double-counted toward your major or any other minor. Each student pursuing the minor must receive credit for two of the following four core courses unless she/he receives a waiver from the administrator of the program:

General Studies 2292. Ideas, Institutions, and Economics

Pol Sci 333B. Individual, Family, and Community

Econ 426. Economic Systems in Theory and Practice

Pol Sci 4621. Politics and the Theory of Games

Research Experience: After completing two of the above core courses, students are encouraged to apply to participate in a research project with a faculty adviser. Students are chosen on the basis of their academic record and appropriateness of their research project. Once chosen, students are expected to devote at least 10 hours per week to their research and will receive three hours of credit for this course.

Undergraduate Courses

ISA 160B. Introduction to Cultural Anthropology

Same as Anthro 160B.
A&S CD SD SS FA SSP

ISA 2292. Ideas, Institutions, and Economics
Same as GeSt 2292.

A&S SS

ISA 3103. Constitutional Politics in the United States

Same as Pol Sci 3103.
A&S SS FA SSP

ISA 326. American Economic History

Same as Econ 326.
A&S SS FA SSP

ISA 333. Individual, Family, and Community

Same as STA 301B.
A&S SD SS FA SSP

ISA 342B. Elections and Reform

Same as Pol Sci 342B.
A&S SS FA SSP

ISA 353. Economics of the Law

Same as Econ 353.
A&S SS FA SSP

ISA 369. Politics of International Trade

Same as Pol Sci 369.
A&S SS WI FA SSP

ISA 373. International Political Economy

Same as Pol Sci 373.
A&S SS FA SSP

ISA 400. Research Experience in Institutional Social Analysis

Same as Pol Sci 400.

After completing two courses in the minor in Institutional Social Analysis, students may apply to participate in a research program with the participation of a faculty supervisor. Students are chosen on the basis of their academic record and the appropriateness of the research project as well as availability and interest of faculty members in the proposed project. Up to 10 students are selected each year. Students are expected to devote at least 10 hours per week for research. There is also a possibility of continuing the participation past the first semester as a paid research collaborator. Prerequisite: Approval of faculty adviser and coordinator of the ISA program. Credit 3 units.

ISA 426. Economic Systems in Theory and Practice

Same as Econ 426.
A&S SS FA SSP

ISA 4261. Systems of Inequality

Same as Anthro 4261.
A&S SD SS WI FA SSP

ISA 4503. Order, Diversity, and Rule of Law

Same as Pol Sci 4503.
A&S SD SS WI FA SSP

ISA 452. Industrial Organization

Same as Econ 452.
A&S SS FA SSP

ISA 458. Theory of Property Rights

Same as Econ 458.
A&S SS FA SSP

ISA 4621. Politics and the Theory of Games

Same as Pol Sci 4621.
A&S SS FA SSP

ISA 471. Development Economics

Same as Econ 471.
A&S SS

ISA 4761. Politics of International Finance

Same as Pol Sci 4761.
A&S SS FA SSP

ISA 4792. Globalization and National Politics

Same as Pol Sci 4792.
A&S SS FA SSP

ISA 480. Growth and Development

Same as Pol Sci 480.
A&S SS FA SSP

Interdisciplinary Project in the Humanities (IPH)

Director

Joseph F. Loewenstein, Professor
(English)
Ph.D., Yale University

Participating Faculty, 2006–08

Jami Ake, Lecturer
(English, Women and Gender Studies)
Ph.D., Indiana University

Carroll Balot, Lecturer
(English, Women and Gender Studies)
Ph.D., Duke University

Ryan K. Balot, Associate Professor
(Classics)
Ph.D., Princeton University

Pamela Barmash, Associate Professor
(Hebrew Bible and Biblical Hebrew)
Director, Jewish, Islamic, and Near Eastern Studies
Ph.D., Harvard University

Lara Bovilsky, Assistant Professor
(English)
Ph.D., Duke University

Eric Brown, Associate Professor
(Philosophy)
Ph.D., University of Chicago

Elizabeth Childs, Associate Professor
(Art History and Archaeology)
Ph.D., Columbia University

John J. Clancy, Adjunct Professor
(American Culture Studies, Engineering and Policy)
Ph.D., Washington University

Dennis Des Chene, Professor
(Philosophy)
Ph.D., Stanford University

Gerald Early
Merle Kling Professor of Modern Letters
(American Literature, African-American Culture)
Ph.D., Cornell University

Matt Erlin, Assistant Professor
(German)
Ph.D., University of California–Berkeley

Cathleen A. Fleck, Scholar in Residence
(Art History and Archaeology)
Ph.D., Johns Hopkins University

Gerald N. Izenberg, Professor
(History)
Ph.D., Harvard University

Ahmet Karamustafa, Associate Professor
(History, Religious Studies)
Ph.D., McGill University

Max J. Okenfuss, Associate Professor
(History)
Ph.D., Harvard University

George Pepe, Professor
(Classics)
Ph.D., Princeton University

Carl Phillips, Professor
(English, African and African American Studies)
M.A., Boston University

Wolfram Schmidgen, Assistant Professor
(English)
Ph.D., University of Chicago

Michael Sherberg, Associate Professor
(Italian)
Ph.D., University of California–Los Angeles

Lynne Tatlock
Hortense and Tobias Lewin Distinguished Professor in the Humanities
(German)
Ph.D., Indiana University

The Interdisciplinary Project in the Humanities (IPH) is a rigorous program for highly motivated students whose interests lead them beyond traditional academic categories. The major, which normally leads to a degree with honors, combines an introductory core—a concentrated study of texts central to the European and American philosophical, religious, and literary traditions—with an area of concentration: an advanced sequence of courses and research tailored to the special interests of each student in the program. For students pursuing concentrations in American intellectual history, in the European avant garde in the 20th century, or in Renaissance political thought (to take three among many possible examples), the introductory core provides a crucial foundation for advanced interdisciplinary work; the core also provides a useful background for students undertaking comparative concentrations—for example, in Buddhist, Christian, and Muslim mystical literature, or in the influence of Russian fiction in East Asia.

All students in the major learn to write and speak clearly and flexibly; they get broad exposure to a range of canonical texts; they are trained in the historical and formal analysis of those and other texts; they become skilled in at least one foreign language; and they get considerable experience in independent research. Their work in the humanities bridges disciplines and fosters in them the two interpretive skills of contextualization and criticism. Students in the program will be well-prepared for a range of graduate programs in the humanities, for professional careers in law and public service, and for the vital work of critical citizenship and adult intellectual discovery.

The Major: Students typically enter the core program in the freshman year, but generally not later than the fall of the sophomore year. The core consists of either five courses in the program in Text and Tradition or three courses in the Text and Tradition program in combination with a FOCUS program in the humanities. (The current FOCUS offerings in the Humanities include Cuba: From Colonialism to Communism; the Medieval and Renaissance Culture program; Nationalism and Identity: The Making of Modern Europe; Writers as Readers; and the FOCUS course on Presidential Rhetoric.)

Students in the core program may apply for admission to the major during the sophomore year by submitting a portfolio of two or three essays.

Once admitted to the program, each student designs, in consultation with the IPH faculty, a program of advanced course work in an area of concentration. In the second semester of the sophomore year, students will enroll in an upper-level course in social or political history or in the history of a literary or other aesthetic form (e.g., the novel, opera) or of some institution or cultural practice (e.g., history of science or history of philosophy); in this semester they also undertake their first sustained research projects under the mentorship of a member of the IPH faculty.

In the junior year, students take a cluster of two courses addressing a single historical period from the perspective of different disciplines. In the spring semester, they complete a writing-intensive Junior Colloquium and participate in a group thesis tutorial and a thesis-related course in anticipation of their capstone project. In April, students seeking Honors take the written and oral comprehensive exam.

In the senior year, students take the Theory and Methods seminar (fall) as well as the capstone colloquium (spring); in addition, they complete and present their capstone project under the mentorship of a member of the IPH faculty. By the middle of their senior year, students will take at least one 400-level Textual and Historical (TH) course in a foreign language in order to secure their foreign-language competency.

Areas of Concentration

Many students will develop their own special areas of concentration. Recent concentrations have included Modernism and Politics, Moslem Ethics and Jurisprudence, Philosophy of Education, and the History of the Novel. Some students will pursue concentrations that reflect the long-standing research interests of a number of faculty in the humanities. Among these latter, fully-developed concentrations are the tracks in Renaissance Studies and Literature and History.

Students in the Renaissance Studies track enroll either in Text and Tradition or in the Renaissance FOCUS program during their first year; they also enroll in the core course in Renaissance Studies, Two Renaissance Cities (Med-Ren 313), usually during their sophomore year. They have a wide range of courses from which to construct their period-specific cluster; as they develop their senior project, they are able to work closely with faculty from several different departments who make up Washington University's active group of Renaissance scholars. Students in the Renaissance concentration are strongly encouraged to begin work on a second foreign language so that they have some experience both with Greek or Latin and one of Western Europe's modern vernaculars.

Students in the Literature and History track are expected to complete 9 units of course work in history and 9 units in litera-

ture; most will satisfy the bulk of this requirement in the course of completing their sophomore history course, their junior period cluster, their advanced foreign language course, and their thesis and thesis-related courses.

The Minor: Text and Tradition

Text and Tradition is a minor open to first-year and sophomore students in the College of Arts & Sciences by special registration. It provides a compact, orderly sequence of five courses. In this program you read, reflect on, and analyze, both orally and in writing, the basic texts of Western literary, philosophical, scientific, and political culture.

If you are majoring in a science, the Text and Tradition minor gives you a firm grounding in the humanities. All courses in the program fulfill distribution requirements, and one of the teachers offering a course in the program also serves as your adviser. You fulfill the requirements of the program by completing five of the eight courses, usually by the end of your sophomore year. This satisfies the requirements for an interdisciplinary minor in Text and Tradition.

Undergraduate Courses

Hum 201A. Text and Tradition: Puzzles and Revolutions

We study issues in the philosophy of science in the context of several prominent revolutionary episodes from the history of science. These episodes may include the "Copernican revolution," the "Darwinian revolution," the birth of modern chemistry with the discovery of oxygen, or the making of the atomic bomb, among others. One or two research papers, one or two exams, and active participation in class discussions are required. Preference given to Text and Tradition and IPH students. Credit 3 units.

A&S TH **FA** NSM

Hum 201B. Text and Tradition: The Great Economists

Examination of the great economic thinkers, the problems they sought to solve, the historically conditioned assumptions that they bring to their work, and the moral issues they raise. The class reads from the works of Adam Smith, Ricardo, Malthus, Marx, Veblen, Keynes, Schumpeter, Galbraith, and others as well as commentary from Heilbrunner. These readings are paired with selected texts on the social and moral issues of their times. Open only to participants in Text and Tradition. Credit 3 units.

A&S TH

Hum 201C. Text and Tradition: Classical Literature

As we study some of the most influential of ancient works, we address the basic questions of liberal education. Why ought the classics be read in the first place? How is it that Western culture has come to value certain fundamental questions, even to the point of encouraging opposition? Texts include selections from the Old Testament, Homer, Aeschylus, Sophocles, Virgil, Ovid, Petrarch, Montaigne, and Shakespeare. Preference given to Text and Tradition and IPH students. Credit 3 units.

A&S TH **FA** Lit

Hum 203C. Text and Tradition: Early Western History

Same as History 131C.

A selected survey of the political and moral thought of Europe from the rise of Athenian

democracy to the Renaissance, with emphasis on analysis and discussion of writers such as Thucydides, Plato, Aristotle, St. Augustine, Castiglione, and Machiavelli. The course aims to introduce students to basic texts in the intellectual history of Western Europe, understood both as products of a particular time and place and as self-contained arguments that strive to instruct and persuade. The texts are simultaneously used to chart the careers of such fundamental notions as liberty, virtue, and justice. Preference given to Text and Tradition and IPH students. Credit 3 units.

A&S TH FA SSP

Hum 204. Darwin and the Modern Ache

D.H. Lawrence reminds us how exciting and instructive it can be to watch the way our fictions take in a new cultural idea as important as Darwinism; as the theory shocks our defenseless bodies, our literature reacts with fresh forms and consciousness that enable us to feel the wound of moral, metaphysical, psychological, biological insecurity and humiliation without becoming merely helpless readers and carriers of our pain. We still feel longings for a creation by design in a post-Darwinian world shaped by thinkers most responsive to evolutionary theory, Nietzsche, Freud, Marx. This semester we study some modern texts most sensitive and susceptible to what Hardy calls the "modern ache" of Darwin's thought, of Ibsen, Hardy, Conrad, Strindberg, Kafka, D.H. Lawrence, and Robert Frost. Preference given to Text and Tradition and IPH students. Credit 3 units.

A&S TH

Hum 205C. Text and Tradition: The Emergence of the Modern Mind: Modern Literature

Through a wide sampling of Western literary works, the course explores themes and tones characteristic of the rise of modern consciousness from the Renaissance forward: we trace debates on aesthetics, the transformation of autobiography, writers' persistent distrust of books, and their relentless assaults on perversions of cultural idealism. Books by such authors as Cervantes, Diderot, Rousseau, Goethe, Balzac, Dostoevsky, Twain, Freud, Kafka, and Beckett. Preference given to Text and Tradition and IPH students. Credit 3 units.

A&S TH FA SSP

Hum 206. The Idea of America

Credit 3 units.

Hum 207C. Text and Tradition: The Rise of the European State

Same as History 132C.

A course in European history and thought since 1600 that addresses two themes: the search for a moral code, and the legitimate role of the state. Both are ancient inquiries, but they acquired important and novel interpretations in the West after the Reformation and the gunpowder revolution, and the rise of the modern statecraft grounded in both. One uniquely Western approach to these questions was the search for the primitive or "natural" situation of mankind, and readings in this genre provide some of the texts for the course. Parallel to presentation of the political history of modern Europe, such writers may be discussed as Locke from the 17th century, Montesquieu and Rousseau from the 18th, Marx and Darwin from the 19th, and the writings of anthropologists and philosophers from the 20th. Preference given to Text and Tradition and IPH students. Credit 3 units.

A&S TH FA SSP

Hum 209. Scriptures and Scripturalism

Same as JNE 2091.

Certain books, "sacred scriptures," have shaped human culture in powerful and complex ways. Religious communities believe that Scriptures are ancient texts that are ever-flowing sources of time-

less truths. We do close readings of crucial Scriptural texts and explore how they are interpreted and why they have had such a profound impact on human communities, in social organization and the behavior of individuals, in literature, art, and politics. This year the course focuses on the canonical texts of Judaism, Christianity, and Islam. Preference given to Text and Tradition and IPH students. Credit 3 units.

A&S CD TH

Hum 301. Sophomore Research Tutorial

A practical introduction to research in the humanities. Students develop and complete a project in a research area of possible long-term interest. Credit variable, maximum 3 units.

A&S TH

Hum 3042. Two Renaissance Cities: Approaches to Early Modern Culture

Same as History 3042.

A&S TH FA SSP

Hum 305. The Cultural History of the Robot

This course surveys the history of the desire to perfect or eliminate what is most human through the creation of artificial men and women. Familiar questions—Can robots feel? Can we tell who is a robot?—will be considered alongside the traditional use of robots to understand or emblemize justice, sin, progress and modernity, self-awareness or simplicity, indifference, virtuosity, authorship, invention, and art itself. Examples are drawn from both fictional and real robots in literature and in film. Likely texts include: Homer, Hesiod, Spenser, Descartes, Hobbes, Vaucanson, Villiers de l'Isle-Adam, Shelley, Hoffmann, Capek, Filisberto-Hernandez, Lem, Lang, and Scott. This course is intended primarily for sophomores considering a major in the Interdisciplinary Project in the Humanities. Freshmen will be considered by permission of the instructor. Credit 3 units.

Hum 310. An Intellectual History of Sex and Gender

Same as WGS 3101, Comp Lit 3101.

An interdisciplinary examination of the aesthetics, ideologies, and politics of sexuality and gender identity in European and American history. The course is structured through consideration of the following topics: Ancient Greek philosophy, the late medieval image of Christ, the Early Modern English stage, the French Enlightenment, Victorian domesticity, and the women blues singers of the Harlem Renaissance. Authors include Plato, Julian of Norwich, Christine de Pizan, Shakespeare, Diderot, de Graffigny, Harriet Martineau, Charlotte Brontë, and Zora Neale Hurston, among others. Credit 3 units.

A&S SD TH

Hum 311. Sophomore Honors Tutorial I: Science, Religion, and the Humanities Since Darwin

Hum 3508. The Crusades: Cross-Cultural Perspectives

Same as History 3508.

A&S TH FA SSP

Hum 3584. From Freud to Postmodern and Feminist Psychoanalysis: A History of Psychoanalytic Ideas

Same as History 3584.

A&S TH FA SSP

Hum 401. IPH Thesis Prospectus Workshop

Same as History 4000, Re St 4000, WGS 4011.

Credit variable, maximum 3 units.

A&S TH

Hum 402. Senior Honors Thesis

Independent research for undergraduate Honors, to be supervised by a faculty member. Student chooses topic and hands in a final paper of at least 45 pages. Credit variable, maximum 1 unit.

Hum 403. Senior Thesis Tutorial

Credit variable, maximum 3 units.

Hum 405. Theory and Methods in the Humanities

Same as History 4821, LH 482, E Lit 469, E Lit 466.

This course familiarizes advanced undergraduate and graduate students with some of the basic issues in humanistic study. It follows the conversations between Marxist, psychoanalytical, anthropological, historicist, and linguistic approaches. Our work highlights the boundaries between these fields and identify incursions across them. Some of the questions that animate our discussions are: What does truth mean in the humanities? What is an object of study and how does one go about identifying it? Is it useful to view the past as a strange country? What is interpretation and what are its procedures? Preference given to Text and Tradition and IPH students. Credit 3 units.

A&S TH

Hum 450. IPH Junior Colloquium: Interdisciplinary Topics in the Humanities

Credit 3 units.

A&S TH WI

Hum 455. IPH Senior Colloquium: Interdisciplinary Topics in the Humanities

Credit 3 units.

Hum 4968. Advanced Seminar: War, Society, and Identity: The European Novel of the 1920s

Same as History 4968.

A&S TH

A&S Requirements for College of Arts & Sciences students (for more information, see page 27).

CD = Cultural Diversity

LA = Languages and the Arts

NS = Natural Sciences and Mathematics

QA = Quantitative Analysis

SD = Social Differentiation

SS = Social Sciences

TH = Textual and Historical Studies

WI = Writing-Intensive Course

FA Requirements for College of Art students (for more information, see page 305).

AH = Art History

Comp = English Composition

Lit = Literature

NSM = Natural Sciences or Mathematics

SSP = Social Sciences or Philosophy

International and Area Studies

Director, Undergraduate and Overseas Programs

Priscilla Stone, Adjunct Associate Professor (IAS, Anthropology)
Ph.D., University of Arizona

Director

James V. Wertsch
Marshall S. Snow Professor in Arts & Sciences
(Anthropology, IAS, Education)
Ph.D., University of Chicago

Core Faculty

Seth Graebner, Assistant Professor (Romance Languages and Literatures, IAS)
Ph.D., Harvard University

Steven C. Hause, Senior Scholar in the Humanities
Co-Director, European Studies (History, IAS)
Ph.D., Washington University

Andrew Mertha, Assistant Professor (Political Science, IAS)
Ph.D., University of Michigan

Mabel Morana

William H. Gass Professor in Arts & Sciences
Director, Latin American Studies (Romance Languages and Literatures, IAS)
Ph.D., University of Minnesota
Ph.D., University of Chicago

Derek Pardue, Assistant Professor (Anthropology, IAS)
Ph.D., University of Illinois, Urbana-Champaign

Ignacio Sanchez Prado, Assistant Professor (Romance Languages and Literatures, IAS)
Ph.D., University of Pittsburgh

Lori Watt, Assistant Professor (History, IAS)
Ph.D., Columbia University

Affiliated Faculty

John R. Bowen
Dunbar–Van Cleve Professor in Arts & Sciences
(Anthropology)
Ph.D., University of Chicago

James L. Gibson
Sidney W. Souers Professor of Government (Political Science)
Ph.D., University of Iowa

John O. Haley
Wiley B. Rutledge Professor of Law (Law)
LL.B., Yale University; LL.M., University of Washington

Robert E. Hegel
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Sidney W. Souers Professor of Government (Political Science)
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Rosa May Distinguished University Professor in the Humanities (German and Comparative Literature)
Ph.D., Indiana University

Hugh J. MacDonald
Avis Blewett Professor of Music (Music)
Ph.D., University of Cambridge

Charles R. McManis
Thomas and Karole Green Professor of Law (Law)
J.D., Duke University

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Hortense and Tobias Lewin Distinguished University Professor in the Humanities
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Ph.D., Stanford University

David L. Browman
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Ph.D., Harvard University

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Laurence A. Schneider
(History)
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James C. Shih
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Eugene B. Shultz, Jr.
(Engineering and Policy)
Ph.D., Illinois Institute of Technology

The International and Area Studies (IAS) major offers a broad, interdisciplinary approach to understanding the world, while also exploring the richness and diversity of its many cultures. One hallmark of our era is the complex relationship between globalization and local differences. New technologies and worldwide markets connect us to people, ideas, and products throughout the globe, yet we still have strong attachments to local languages, cultures, and social norms. Globalization has brought great prosperity to the highly industrialized nations of Asia, Europe, and North America, yet it has also increased pressures on nations still attempting to develop in Africa, Asia, Latin America, and the Middle East. The IAS program examines these tensions by combining a focus on contemporary international issues

with a study of the histories and cultures of particular areas of the world.

IAS offers a wide selection of courses in a variety of disciplines. Faculty members who participate in the program are specialists both in their disciplines and in their geographic areas of concentration. While the major presently offers four areas of concentration, the program also has depth in African and Middle Eastern Studies as well as courses on the history of South Asia.

The IAS major combines well with a second major or a minor in a discipline such as anthropology, economics, history, languages and literatures, or political science. The major provides excellent preparation for many careers in both public and private sectors, including academia, law, government, and business, as well as work with international service organizations.

The Major: There are presently four tracks available to IAS majors, offering concentrations in International Studies, East Asian Studies, European Studies, or Latin American Studies. All four tracks require you to take two introductory courses (Crossing Borders I and II), for a total of 6 credits. Majors selecting the International Studies or European Studies track must also take IAS 200 for 1 credit; majors in the East Asian Studies track must take one core civilization course for 3 credits (East Asia 223, 226, or 227); and majors in the Latin American Studies track must take Lat Am 165 for 3 credits. All majors must take an additional 18 units in advanced-level courses appropriate to their concentrations. At least 3 units must be at the 400 level and must be earned on campus or in Washington University courses taught abroad. Depending on the concentration, the 18 units must include courses representing at least three different disciplines. The East Asian Studies track also requires students to balance an emphasis on China or Japan with at least one course in the other area. Students whose primary major is IAS must complete a capstone experience (by writing a Senior Honors thesis, presenting a senior project, or successfully completing a specially designated 400-level course), and all majors must satisfy a language requirement by successfully completing the first four semesters of instruction (or the equivalent) in a foreign language appropriate to the concentration. In the East Asian Studies concentration, no more than 6 credits in advanced language study may be counted toward the major, at the discretion of the adviser.

The Minor: As with the IAS major, there are four tracks available to IAS minors. All minors are required to complete a minimum of 15 graded credits appropriate to their concentration, including at least 9 units at the 300 and 400 level, and must satisfy a language requirement by successfully completing the first 4 semesters of instruction (or the equivalent) in a foreign language appropriate to the concentration. In the East Asian Studies concentration, some credits earned through advanced-level language study may be applied toward the minor at the discretion of the adviser. At the introductory level, students declaring a minor in the International

Studies track must complete either Crossing Borders I or II; minors in the East Asian Studies track must choose from Crossing Borders I or II or Japanese, Chinese, or Korean Civilization; minors in the European Studies track must choose from Crossing Borders I or II or Introduction to European Studies; and minors in the Latin American Studies track must choose from Crossing Borders I or II or Survey of Latin American Culture. No more than 3 credits may be from directed readings, research, or internships.

Internships: As an IAS major, you are encouraged to participate in internships with an international focus. Some lower division credit for internships may be available in IAS credit, provided that you are granted prior approval.

Study Abroad: You are also encouraged to study abroad in one of Washington University's overseas programs during your junior year or the summer. Some credit for courses taken abroad may be applied to the major or minor.

Senior Honors: If you have a strong academic record, you may apply to work toward Honors by writing an Honors thesis during your senior year.

Undergraduate Courses

IAS 1501. Seminar for the International Leadership Program

This seminar, which is restricted to and required of participants in the International Leadership Program, is a continuation of the fall IAS 1502 course. Credit 1 unit.

IAS 1502. Seminar for the International Leadership Program

This seminar, which is restricted to and required of participants in the International Leadership Program, is a companion to either of the two core ILP fall courses. Included in this seminar is a focus on basic skill development (oral and written communication), special events such as guest speakers in various international fields, and career development sessions. Credit 1 unit.

IAS 160. World Politics and the Global Economy

Same as Pol Sci 160.

Using the events of the 20th century as a backdrop, this seminar introduces major approaches, questions, and controversies in the study of global political-economic relations. Students examine the building blocks of world politics, the sources of international conflict and cooperation, and the globalization of material and social relations. This course is restricted to freshmen in the International Leadership Program. Credit 3 units.

A&S SS

IAS 164. Introduction to World History

Same as History 164.

A&S TH FA SSP

IAS 165C. Survey of Latin-American Culture

Same as Lat Am 165C.

This class is an introduction to contemporary Latin-American politics and cultures. At the end of the semester, students are able to recognize some of the main issues in Latin-American politics, history, and culture and develop research tools to approach the study of Latin America. The class begins with an overview of Latin-American history, then explores both current political issues and different dimensions of Latin American cultures. The political topics include: violence in contemporary Colombia, Cuba after the fall of the

Berlin Wall, the question of Southern Cone dictatorships, the Zapatismo movement in Mexico, and the debates on Latin-American immigration to the United States. Cultural topics include the role of intellectuals in Latin America, pop and rock music, contemporary film, gender issues, and the distinction between popular and media culture. This class is required of IAS majors in the Latin-American Studies track. Credit 3 units.

A&S CD TH FA SSP

IAS 170. Is There a Global Culture?

The Seattle protestors and other opponents of globalization have made a great deal of the idea that a standardized, commercialized, and United States-dominated culture is supplanting local cultures around the world. This, they assert, will make the world into a boring place in which local artists are squashed by nondescript cultural products distributed by an all-powerful American commercial machine. This course questions whether any such thing is happening and suggests that there are far more interesting ways of considering what "global culture" might be. It helps provide you with the skills in cultural observation and interpretation necessary for informed leadership in the globalizing world. This course is restricted to freshmen in the International Leadership Program. Credit 3 units.

A&S SS

IAS 180. International Development

This course addresses critical issues in international development through immersion in actual contemporary case studies. Examples of case studies, which vary from year to year, include land redistribution in Zimbabwe, guest workers in Europe, oil and violence in Latin America, and family planning in China. Each case is explored through interactive learning, with teams of students proposing and debating development plans. This is the core spring course for the International Leadership Program and is required of and restricted to ILP students. Credit 3 units.

A&S SS

IAS 200. Introduction to International and Area Studies

An introduction to some of the key themes and approaches within international and area studies, with a focus on the interplay of global and local forces. The course features case studies from diverse world regions given by guest lecturers from International and Area Studies faculty, as well as a discussion of broader trends in the contemporary world system. Required of majors in International and Area Studies in the International Studies and European Studies tracks, optional for others. Credit 1 unit.

A&S SS FA SSP

IAS 202. Crossing Borders I

Same as Pol Sci 2022, AMCS 2021, Pol Sci 2022, History 202.

This course is an introduction to the International and Area Studies major from the viewpoint of the social sciences. We examine what it means to cross borders, including the geographical borders of territorial nation-states, but also the conceptual borders of class, culture, the rural urban divide, and the premodern-modern continuum. Students, as nascent social scientists, learn the analytical skills and study ethical issues necessary for evaluating the world around them. Depending on the instructor, the class emphasizes overall scientific method or work through historical case studies to achieve these goals. IAS majors considering a junior year abroad should enroll freshman or sophomore year. Credit 3 units.

A&S CD SS

IAS 203. Crossing Borders II

Same as AMCS 2031.

This course explores the idea of "crossing bor-

ders” in literature, film, and their cultural contexts. We explore ethnic and economic conflicts, nationalist projects, and cultural imperialism and resistance in the interactions between cultural objects (texts and other works of art) and their contexts. Because we approach these topics from the perspective of the humanities, we spend some time introducing students to the basic premises and methodologies of inquiry in cultural studies. This course is required of all IAS majors. IAS majors considering a junior year abroad should enroll freshman or sophomore year. Credit 3 units.
A&S CD TH

IAS 213. International Conflict and Conflict Resolution

Same as Pol Sci 2131.

This course explores a number of past and present international conflicts with a view to understanding how and why they began and developed, how they became “internationalized,” and what is being done to resolve them. Students take part in hypothetical conflict resolution activities by researching particular conflicts and offering ideas for resolving them to the group. Priority is given to International Leadership Program students. Credit 3 units.
A&S SS FA SSP

IAS 223. Korean Civilization

Same as ACC 223.

A&S CD TH

IAS 226C. Japanese Civilization

Same as ACC 226.

A&S CD SD TH FA SSP

IAS 227C. Chinese Civilization

Same as ACC 227.

A&S CD SD TH

IAS 250. Internships in International and Area Studies

This course is designed as a venue to grant credit to IAS students who actively obtain an internship and are NOT paid for the experience. Before work begins, the student and faculty sponsor must agree on a final written project on which the student will be evaluated. Course may be taken only one time. Credit 3 units.

IAS 300. Independent Study

Prerequisite: Permission of the chair of the International and Area Studies program. Credit 3 units.

IAS 3032. Western Thought and Contemporary Social Problems

Same as STA 3032.

A&S SS FA SSP

IAS 305. Music of the African Diaspora

Same as Music 3021.

A&S CD TH FA AH

IAS 3050. Greater Central Asia in Crisis

Same as Anthro 305B.

A&S CD SS

IAS 3053. Anthropology of Tibet and the Himalayas

Same as Anthro 3051.

A&S SS FA SSP

IAS 3054. China in Social and Cultural Perspective

Same as Anthro 3052.

A&S SS

IAS 3057. Visual Griots: Exploring Colonial and Post-Colonial Africa through African Cinema

Same as AFAS 3057.

A&S CD TH FA AH

IAS 306. Modern Jewish Writers

Same as Comp Lit 306.

A&S TH FA Lit

IAS 3060. East Asia since 1500

Same as History 3060.

A&S TH

IAS 3061. Between Submission and Power: Women and Family in Islam

Same as WGS 306.

A&S CD SS FA SSP

IAS 306B. Africa: Peoples and Cultures

Same as Anthro 306B.

A&S CD SS FA SSP

IAS 3081. Topics in Asian-American Literature: Identity and Self-Image

Same as E Lit 308.

A&S SD TH FA Lit

IAS 3090. Chinese Thought

Same as Re St 309.

A&S CD TH WI

IAS 3092. Indigenous Peoples and Movements in Latin America

Same as Anthro 3092.

A&S CD SD SS

IAS 3093. Anthropology of Modern Latin America

Same as Anthro 3093.

A&S SS

IAS 3094. Politics of the European Union

Same as Pol Sci 3093.

A&S SS

IAS 3095. The Confucian Traditions

Same as Re St 3091.

A&S TH

IAS 3101. Ancient Civilizations of the New World

Same as Anthro 310C.

A&S CD TH FA AH

IAS 3111. Family, Kinship, and Marriage

Same as Anthro 3111.

A&S SS FA SSP

IAS 3131. Russian Politics

Same as Pol Sci 3131.

A&S SS FA SSP

IAS 3132. Introduction to Comparative Arts

Same as Comp Lit 313E.

A&S TH FA Lit

IAS 3134. The AIDS Epidemic: Inequalities, Ethnography, and Ethics

Same as Anthro 3134.

A&S SS

IAS 3140. Topics in Latin America History and Politics

Same as Pol Sci 3140.

A&S SS

IAS 3150. The Middle East in the 20th Century

Same as History 3150.

A&S CD TH FA SSP

IAS 3151. The Palestinian–Israeli Conflict, 1881 to the Present

Same as History 3151.

A&S TH FA SSP

IAS 3152. The History of Iran from 1501 to the Present

Same as History 3152.

A&S TH FA SSP

IAS 315C. The Middle East in Modern Times, 1800 to the Present

Same as History 315C.

A&S TH FA SSP

IAS 3163. Early Modern China: 1350–1890

Same as History 3162.

A&S TH FA SSP

IAS 316C. Modern China: 1890 to the Present

Same as History 316C.

A&S TH FA SSP

IAS 319. History of Japan to the Eve of Modernization

Same as History 319C.

A&S TH FA SSP

IAS 3191. History of South Asia to the Eve of Modernization

Same as History 3191.

A&S CD TH FA SSP

IAS 3192. Modern South Asia

Same as History 3192.

A&S CD TH FA SSP

IAS 320B. Politics of the Arab World

Same as Pol Sci 320B.

A&S SS FA SSP

IAS 3210. Scandinavian Cinema—Nordic Light

Same as Film 321.

A&S CD TH FA AH

IAS 321C. Latin America: from Colonialism to Neocolonialism, 1492–1890

Same as History 321C.

A&S CD TH FA SSP

IAS 322C. Latin America in the 20th Century: Reform or Revolution

Same as History 322C.

A&S TH FA SSP

IAS 3243. A User’s Guide to Japanese Poetry

Same as Japan 324.

A&S LA

IAS 324C. Modern Japan—Japan since 1868

Same as History 320C.

A&S CD TH FA SSP

IAS 3250. French Film Culture

Same as Film 325.

A&S TH

IAS 3253. History and (Auto)biography from Modern South Africa

Same as History 3252.

A&S CD TH

IAS 3254. Vote for Pedro: A Critical Look at Youth and Popular Cultures

Same as Anthro 3254.

A&S SS FA SSP

IAS 3260. Race, Class, and Gender: Cultural Readings of Brazil and Its Cities

Same as Lat Am 3260, Anthro 3260.

Cities are spectacles of humanity. In Brazil, the construction and management of its metropolitan areas have been intended as a showcase of modernity and cultural development for the outside world (especially Europe and later the United States) to see. Brazilian cities are also the settings and results of intense social relationships. In this course we try to understand the relationship between spatial design and socio-cultural identity through particular discussions of (im)migration, globalization, architecture, history, and ideology. In our conversations about São Paulo, Rio de Janeiro, Brasília, Salvador, and Porto Alegre, we come to understand that places are always social and thus necessitate an analysis of race, class, gender, and sexuality. Credit 3 units.
A&S SS

IAS 3263. Democratic Politics in Eastern and Central Europe

Same as Pol Sci 3253.

A&S SS FA SSP

IAS 326B. Latin-American Politics

Same as Pol Sci 326B.

A&S SS FA SSP

IAS 3273. Introduction to Israel Studies*Same as JNE 3273.***A&S TH****IAS 327B. African Politics***Same as Pol Sci 327B.***A&S SS FA SSP****IAS 3280. Political Intolerance in World Politics***Same as Pol Sci 3280.***A&S SS****IAS 3282. Sexuality in Africa***Same as AFAS 3282.***A&S CD SS FA SSP****IAS 3291. History of German Cinema***Same as Film 328.***A&S TH****IAS 3292. Topics in Politics: Modern South Asian Politics***Same as Pol Sci 3292.***A&S SS FA SSP****IAS 3293. Religion and Society***Same as Anthro 3293.***A&S SS FA SSP****IAS 329F. Religion, Ritual, and Worldview***Same as Anthro 329F.***A&S SS FA SSP****IAS 3300. Introduction to the Study of Hispanic Literature***Same as Span 330C.***A&S TH FA Lit****IAS 3301. Topics in Chinese Literature and Culture***Same as Chinese 330.***A&S CD TH****IAS 3313. Women and Islam***Same as Anthro 3313.***A&S CD SS FA SSP****IAS 3316. Masterpieces of 19th-Century Russian Literature***Same as Russ 331C.***A&S SD TH FA Lit****IAS 332. Topics in Politics: Constitutionalism and Democracy***Same as Pol Sci 3321.***A&S SS****IAS 3321. Topics in Film Studies: Italian Cinema***Same as Ital 332.***A&S TH FA AH Lit****IAS 3322. Brave New Crops***Same as Anthro 3322.***A&S SS FA NSM****IAS 3323. The Classical Voice in Japanese Literature***Same as Japan 332C.***A&S CD TH FA Lit****IAS 332B. Environmental and Energy Issues***Same as Pol Sci 332B.***A&S SS FA SSP****IAS 333. The Holocaust: the Experience of European Jewry***Same as History 333.***A&S SD TH FA SSP****IAS 3330. Economics of the European Union***Same as Econ 333.***A&S SS****IAS 3331. The Modern Voice in Japanese Literature***Same as Japan 333C.***A&S CD TH FA Lit****IAS 3332. Culture and Health***Same as Anthro 333.***A&S SS FA SSP****IAS 3333. The Art and Archaeology of Japan and Korea***Same as Art-Arch 3333.***A&S TH FA AH****IAS 3350. The Jews in the Modern World***Same as History 335C.***A&S CD TH FA SSP****IAS 3351. Spanish-American Literature I***Same as Span 335C.***A&S CD TH FA Lit****IAS 3352. Topics in Italian Cinema: Pier Paolo Pasolini: Ideology, Sexuality, Representation***Same as Ital 334.***A&S TH FA AH****IAS 336. China Under Revolution and Reform***Same as Pol Sci 3361, East Asia 3363.*

This course examines the political evolution of the Chinese state during the 20th century. Although we cover the late Qing Dynasty and the Nationalist era, the main focus is on the People's Republic of China from 1949 to the present. The course is divided into three parts. The first traces the political history of China over the past century, with particular emphasis on China under Mao (1949–1976) and the reform era under Deng Xiaoping and Jiang Zemin (1978–present). The second part looks at the mechanics of the Chinese state, in particular, its governing apparatus, including the government, the Chinese Communist Party (CCP), and the People's Liberation Army (PLA). The third part of the course looks at several contemporary “hot button” issues, using information from earlier sections of this course to analyze these issues in an in-depth, scholarly fashion. Topics may include China's one-child policy, cross-strait relations with Taiwan, structural economic reform, the environment, state-society relations, and Chinese foreign policy. Credit 3 units.

A&S CD SS**IAS 3360. The Floating World in Japanese Literature***Same as Japan 336.***A&S CD SD TH FA Lit****IAS 3361. Spanish-American Literature II***Same as Span 336C.***A&S CD TH FA Lit****IAS 339. Myth and Society***Same as Anthro 339F.***A&S CD SS FA SSP****IAS 3390. 20th-Century Russian Literature and Culture***Same as Russ 339C.***A&S CD TH FA Lit****IAS 3391. Karma and Rebirth***Same as Re St 3391.***A&S CD TH FA SSP****IAS 3392. Topics in South Asian Religions: Tantric Traditions of South Asia***Same as Re St 3392.***IAS 3393. Exile: Jews, Literature, and History***Same as JNE 339C.***A&S CD TH****IAS 3394. Topics in South Asian Religions: Veda and Vedanta***Same as Re St 3394.***A&S TH****IAS 339F. Topics in South Asian Religions: Yoga Traditions***Same as Re St 339F.***A&S CD TH FA SSP****IAS 3400. History of World Cinema***Same as Film 340.***A&S CD TH FA AH****IAS 3401. Chinese Art and Culture***Same as Art-Arch 3401.***A&S CD TH FA AH****IAS 3402. German Literature and the Modern Era***Same as German 340C.***A&S CD TH FA Lit****IAS 3410. Literature of Early and Imperial China***Same as Chinese 341.***A&S CD SD TH FA Lit****IAS 3411. Problems of Political, Legal, and Social Ethics***Same as Phil 341.***A&S TH****IAS 342. Literature of Modern and Contemporary China***Same as Chinese 342.***A&S CD SD TH FA Lit****IAS 3420. The Archaeology of Ancient China***Same as Art-Arch 3420.***A&S TH FA AH****IAS 342B. Elections and Reform***Same as Pol Sci 342B.***A&S SS FA SSP****IAS 343. Text, Memory, and Identity***Same as Educ 343, Anthro 3431, STA 343.*

This course explores issues of collective memory and identity through the study of texts such as national myths and official histories taught in schools. The focus is on texts themselves and how they are produced (e.g., by the state, popular culture) and consumed. The course has two components, methodological and analytical. In the first, we read a number of theoretical works devoted to definitions of the text from a historical and structural point of view. In the second, we analyze various key works that have played a crucial role in the formation of communities of memory and identity and the borders that separate them. The course is comparative, multidisciplinary, and international in its scope. Credit 3 units.

A&S TH**IAS 344. Introduction to European Studies***Same as EuSt 344, History 3441.*

This course focuses on Europe since 1945, but it uses a historical approach to discuss the experiences, traditions, and ideas that have created contemporary European civilization. Students spend the final weeks examining the European Union, but most of the semester is spent on topics that reveal the nature of European civilization. Topics include demography, religion, human rights, economic traditions, varieties of parliamentary government, labor and democratic socialism, and minority cultures and diversity. The approach used is the analysis and discussion of historical texts and documents; these materials are not limited to the contemporary era but stretch across several centuries. Course is highly recommended for IAS students in the EuSt track. Credit 3 units.

A&S CD TH**IAS 348. Europe in the Age of Imperialism: 1870–1940***Same as History 348.***A&S TH FA SSP****IAS 349. Europe in the 20th Century, 1914–1945***Same as History 349.***A&S TH FA SSP****IAS 350. Israeli Culture and Society***Same as JNE 350.***A&S CD SD TH FA SSP**

IAS 3500. The 19th-Century Russian Novel*Same as Russ 350C.*

A&S SD TH WI FA A Lit

IAS 3501. Politics, Economics, and Welfare*Same as Econ 350.*

A&S SS FA SSP

IAS 3541. Shamans, Sages, and Saints: An Introduction to Korean Religion*Same as Re St 354.*

A&S CD TH

IAS 3543. The Quest for Racial Reconciliation*Same as AFAS 3542.*

A&S TH FA SSP

IAS 355. 20th-Century Britain*Same as History 355.*

A&S TH FA SSP

IAS 3552. Modern France Since 1870*Same as History 3552.*

A&S TH FA SSP

IAS 3553. Revolution and Empire: Modern France to 1870*Same as History 3553.*

A&S TH FA SSP

IAS 3560. Topics in Politics: The Politics of Security in East Asia*Same as Pol Sci 3561.*

A&S SS

IAS 356C. 20th-Century Russian History*Same as History 356C.*

A&S TH FA SSP

IAS 357B. Gender Politics in Global Perspective*Same as Pol Sci 357B.*

A&S SS FA SSP

IAS 3580. Modern Near Eastern Literatures*Same as Comp Lit 358C.*

A&S TH FA Lit

IAS 3581. Chinese Art and Culture*Same as Art-Arch 3580.*

A&S TH FA AH

IAS 359. Topics in European History: Women in Modern European History, 1700–2000*Same as History 359.*

A&S CD TH FA SSP

IAS 3598. The First World War and the Making of Modern Europe*Same as History 3598.*

A&S TH FA SSP

IAS 360. Directed Readings in International and Area Studies

These courses are designed to offer a greater breadth for IAS majors in disciplines that typically require prerequisites at the advanced level. To be granted credit toward the IAS major, students must complete additional work as determined by the instructor. Credit 3 units.

A&S TH

IAS 361. Culture and Environment*Same as Anthro 361.*

A&S SS FA SSP

IAS 3612. Population and Society*Same as Anthro 3612.*

A&S SS

IAS 362. Introduction to Russian Civilization*Same as Russ St 362, EuSt 362, Russ 362.*

Overview of main currents and developments in Russian culture from early records to present, with individual research and term paper in topic of student's choosing. Folk arts and traditions as well as "high" art, architecture, music, literature, film. Key themes: "dual belief;" "Tatar yoke," legacy of "Europeanization" of Russia under Peter the Great, flowering of arts in the last half of the 19th

century into the Soviet period, continuing the quest to define national identity. Are the radical changes taking place in Russia today a complete break with the past or a reemergence of certain cultural constants? Knowledge of Russian not required. Sophomore standing or above. Credit 3 units.

A&S TH

IAS 365. Theater Culture Studies III: Melodrama to Modernism*Same as Drama 365C.*

A&S TH FA Lit SSP

IAS 366. Women in Film: From the Silent Feminists to *Thelma and Louise**Same as Film 366.*

A&S SD TH

IAS 367. Seminar on Emerging Democracy and Civil Society

This course examines theoretical and policy issues that arise in emerging democracies and civil societies. The role of the state, nongovernmental organizations, and cultural and historical forces are examined. The course provides a conceptual foundation for discussing these issues and also focuses on case studies in the emergence of democracy and civil society. The course is held in a seminar format in which students are expected to be active contributors. Part of Washington University's Summer Program in Tbilisi, Georgia. Credit 3 units.

A&S SS

IAS 368. Applied Research on Emerging Democracy and Civil Society

This is a practice-based research course on issues that arise in emerging democracies and civil societies. Students are required to participate in a practice setting, such as an internship, as part of the course requirement. In addition, they meet regularly with the instructor to discuss conceptual issues and submit a term paper analyzing the setting in which they worked. Part of Washington University's Summer Program in Tbilisi, Georgia. Credit 3 units.

A&S SS

IAS 3680. The Cold War: 1945–1991*Same as History 3680.*

A&S TH FA SSP

IAS 369. Topics in Public Policy*Same as Pol Sci 369.*

A&S SS WI FA SSP

IAS 372. Topics in International Politics: Global Political Economy*Same as Pol Sci 372.*

A&S SS FA SSP

IAS 373. International Political Economy*Same as Pol Sci 373.*

A&S SS FA SSP

IAS 3731. History of United States: Foreign Relations to 1914*Same as History 373.*

A&S TH FA SSP

IAS 3741. History of United States: Foreign Relations Since 1950*Same as History 3741.*

A&S TH FA SSP

IAS 374F. Sufism: God's Friends in Islam*Same as Re St 376F.*

A&S TH FA SSP

IAS 375. Screening the Holocaust*Same as Film 375.*

A&S TH FA AH

IAS 3750. Topics in Russian Culture*Same as Russ 375, EuSt 3750, Russ St 375.*

Selected fiction, poetry, memoiristic literature, and journalism from the medieval period to the current

war in Chechnya, with forays into pictorial arts and film; all considered in cultural and historical context. Key episodes in stories that have defined and redefined national identity in conflict with other peoples; shifting paradigms of heroism; militant provocations and profound arguments for pacifism; literary conventions, clichés, and meta-physical abstractions. All readings in translation. Credit 3 units.

A&S TH WI

IAS 3772. International Political Economy*Same as Econ 377.*

A&S SS FA SSP

IAS 3781. Topics in Politics: Israeli Politics*Same as Pol Sci 3781.*

A&S CD SS FA SSP

IAS 3782. Topics in Comparative Politics: Terrorism and Political Science*Same as Pol Sci 3782.*

A&S SS

IAS 3802. Sacred Shrines and Holy Places*Same as Re St 3802.*

A&S CD TH FA SSP

IAS 3831. Art in the Age of Revolution, 1789–1848*Same as Art-Arch 3831.*

A&S TH FA AH

IAS 3833. Realism and Impressionism*Same as Art-Arch 3833.*

A&S TH FA AH

IAS 3838. Modern Art in Fin-de-Siècle Europe, 1880–1907*Same as Art-Arch 3838.*

A&S TH WI FA AH

IAS 385. Cultural Difference*Same as French 385.*

A&S TH FA SSP

IAS 3872. The History of Modern Britain*Same as History 3872.*

A&S TH FA SSP

IAS 3874. An Embarrassment of Riches: 19th-Century Britain*Same as History 3874.*

A&S TH FA SSP

IAS 3878. Britain and Ireland from 1688 to 1870*Same as History 3878.*

A&S TH FA SSP

IAS 3891. East Asia Since 1945: From Empire to Cold War*Same as History 3891.*

A&S CD TH FA SSP

IAS 394C. African Civilization to 1800*Same as AFAS 321C.*

A&S CD TH FA SSP

IAS 395C. African Civilization: 1800 to the Present*Same as AFAS 322C.*

A&S CD TH FA SSP

IAS 398. Rivers: a Comparative Approach to Chinese and World History, 1500–1900*Same as History 3958.*

A&S TH WI

IAS 399. To Russia and Return: Travel, Literature, and History*Same as History 39X9.*

A&S TH WI

IAS 400. Independent Study

Prerequisite: Permission of the chair of the International and Area Studies program. All tracks. Credit variable, maximum 3 units.

IAS 402. The Meaning of National Security in the 21st Century

Same as Pol Sci 4024, STA 4061, Russ St 402.
The 21st century has brought with it new challenges to national security. Standard assumptions about nations and the borders that separate them have been brought into question, and one of the results of this is that the very meaning of national security is undergoing change. Instead of threats to security coming from outside national boundaries, they now often exist within and across borders. This course focuses on contemporary ideas about these issues. It includes a brief overview of current discussions of national security, but it is primarily devoted to examining the conceptual resources we have for making sense of national security in a new world. Credit 3 units.

A&S SS

IAS 4030. Speak Out! Contending Perspectives on Global Issues

Same as Pol Sci 4031.

A&S SS WI

IAS 4031. East Asian Educational Policy

Same as Educ 4034, East Asia 4031.

East Asia's current educational policies viewed in historical and philosophical perspective, providing a solid background in traditional Asian educational formation, and the global content of educational policies in East Asia. Credit 3 units.

A&S CD TH FA SSP

IAS 4032. Gender and Labor Politics in East Asia

Same as Anthro 4031.

A&S SS FA SSP

IAS 4040. Germany Today

Same as German 404.

A&S CD TH FA SSP

IAS 4041. Islam and Politics

Same as Anthro 4041.

A&S CD SS FA SSP

IAS 405. Political Anthropology

Same as Anthro 405.

A&S CD SD SS FA SSP

IAS 4050. Diaspora in Jewish and Islamic Experience

Same as JNE 405.

A&S TH

IAS 4051. Democracy and Society

Same as Pol Sci 405.

A&S SS FA SSP

IAS 406. Social Thought and Analysis Topics Seminar: Immigration and Heritage

Same as STA 405.

A&S SS FA SSP

IAS 4064. Current Issues in Contemporary Chinese Politics

Same as Pol Sci 4064.

A&S SS

IAS 4090. Gender, Sexuality, and Change in Africa

Same as AFAS 409.

A&S SD SS WI FA SSP

IAS 4134. The Aids Epidemic: Inequalities, Ethnography, and Ethics

Same as Anthro 4134.

A&S SS

IAS 4140. Readings in Classical Chinese Philosophy

Same as Chinese 414.

A&S CD TH

IAS 4153. Colonial South Asia: Society and Politics in British India

Same as History 4153.

A&S SD TH FA SSP

IAS 4154. Post-Colonial South Asia: Nations, Cultures, and Identities

Same as History 4154.

A&S SD TH

IAS 4156. Europe and the Second World War

Same as History 4156.

A&S TH

IAS 417. Topics in African History: Middle Passages: African Americans and South Africa

Same as AFAS 417.

A&S CD TH

IAS 418. Victorian Literature 1830–1890

Same as E Lit 418.

A&S TH FA Lit

IAS 419. History of Pan Africanism: The Birth and Evolution of a Revolutionary Idea

Same as AFAS 419.

A&S TH

IAS 4192. Tragedy and Farce in African Francophone Literature

Same as French 4192.

A&S TH FA Lit

IAS 420. Islam, Immigrants, and the Future of European Culture

Same as JNE 4201.

Coming from Turkey, North and West Africa, Pakistan, and elsewhere, Muslim immigrants in Europe are changing what it means to be a European. In the process, they have brought questions of cultural identity into the international media. Examining literature, the press, and secondary studies, this writing-intensive course studies the ways in which national governments and institutions have chosen to deal with the arrival of large numbers of Muslims as permanent residents. We consider what the various controversies and prejudices surrounding their presence mean for the future of European culture. Such issues as citizenship, assimilation, the right to cultural difference, and the use of cultural and religious symbols are among our major interests. No foreign language background is assumed. Priority is given to IAS majors for this WI course. Credit 3 units.

A&S TH WI

IAS 4231. Western Economic History

Same as Econ 423.

A&S SS FA SSP

IAS 4232. Contemporary Issues in Latin America

Same as Pol Sci 4231.

A&S SS FA SSP

IAS 424. Topics in Comparative Politics: Non-Formal Politics

Same as Pol Sci 424.

A&S SS FA SSP

IAS 4242. Social Movements

Same as Anthro 4242.

A&S CD SD SS FA SSP

IAS 425. Senior Project Seminar

In this course, students undertake supervised research as part of their capstone experience, which may take the form of a senior project or an honors thesis. Seniors who choose to do their capstone experience in International and Area Studies enroll for this course in the spring semester. Students who are writing an honors thesis are encouraged to enroll in at least one independent study course prior to this as well. At the end of the semester, all students participate in a workshop in which they present the results of their projects and discuss the implications of their work for future research. All tracks. Credit variable, maximum 3 units.

A&S SS

IAS 4253. Researching Fertility, Mortality, and Migration

Same as Anthro 4253.

A&S SS WI

IAS 4260. Latin American Theater

Same as Span 426.

A&S SD TH FA AH

IAS 4261. Economic Systems in Theory and Practice

Same as Econ 426.

A&S SS FA SSP

IAS 4272. Topics in Comparative Politics

Same as Pol Sci 4271.

A&S SS WI FA SSP

IAS 428. Topics in Comparative Politics: Separatist Politics

Same as Pol Sci 428.

A&S SS WI

IAS 4280. Spanish-American “Traditional” Novel

Same as Span 4281.

A&S SD TH FA Lit

IAS 4281. Comparative Political Parties

Same as Pol Sci 4281.

A&S SS FA SSP

IAS 4282. Political Ecology

Same as Anthro 4282.

A&S SS FA SSP

IAS 4284. The New Sicilian School

Same as Ital 428.

A&S TH FA Lit

IAS 430. Latin-American Essay

Same as Span 430.

A&S TH FA Lit

IAS 431. Latin-American Poetry I

Same as Span 431.

A&S TH FA Lit

IAS 4322. Topics in Comparative Politics: Current Controversies in South Asian Politics

Same as Pol Sci 432.

A&S SS FA SSP

IAS 4323. Latin-American Poetry II

Same as Span 432.

A&S TH FA Lit

IAS 4324. Divergent Voices: 20th-Century Italian Women Writers

Same as Ital 432.

A&S SD TH WI FA Lit

IAS 4330. Literature of the Italian Enlightenment

Same as Ital 433.

A&S TH WI FA Lit

IAS 4335. Topics in Comparative Politics: States and Markets in Comparative Perspectives

Same as Pol Sci 4335.

A&S SS FA SSP

IAS 4342. Political Safeguards of Federalism

Same as Pol Sci 4342.

A&S SS FA SSP

IAS 4351. Cultural History

Same as STA 435.

A&S SS FA SSP

IAS 4352. Open Economy Macroeconomics

Same as Econ 435.

A&S SS FA SSP

IAS 4353. The Political Economy of the European Union

Same as Pol Sci 4353.

A&S SS FA SSP

- IAS 4362. Local Genders, Global Transformations**
Same as Anthro 4362.
A&S SS FA SSP
- IAS 4370. Global Feminisms**
Same as WGS 437.
A&S SS
- IAS 4371. Caffé, Cadavers, Comedy, and Castrati: Italy and the Age of the Grand Tour**
Same as Ital 437.
- IAS 441. Social Statistics I**
Same as STA 441.
A&S SS FA SSP
- IAS 4412. The British Empire in Cross-Cultural Perspective, 1800–1970**
Same as History 4412.
A&S TH FA SSP
- IAS 442. European Intellectual History: 1789–1890**
Same as History 442.
A&S TH FA SSP
- IAS 4422. History, Memory, and Collective Identities**
Same as History 4422.
A&S TH FA SSP
- IAS 443. European Intellectual History: 1890–1930**
Same as History 443.
A&S TH FA SSP
- IAS 4432. Politics of Post-Soviet Countries (Commonwealth of Independent States)**
Same as Pol Sci 4432.
A&S SS FA SSP
- IAS 444. European Intellectual History, 1930–2000**
Same as History 444.
A&S TH FA SSP
- IAS 4442. The Jewish Experience in Eastern Europe**
Same as History 4442.
A&S CD TH FA SSP
- IAS 4443. Jews and the City: Urban Dimensions of Modern Jewish Experience**
Same as History 4443.
A&S CD TH
- IAS 4446. European Social History: 1750–1930**
Same as History 4446.
A&S TH
- IAS 4450. Japanese Fiction**
Same as Japan 445.
A&S CD TH WI FA Lit
- IAS 446. The Japanese Theater**
Same as Japan 446.
A&S CD SD TH FA Lit
- IAS 4470. Japanese Film**
Same as Japan 447.
A&S TH FA Lit
- IAS 4471. Spanish-American Women Writers I**
Same as Span 4471.
A&S SD TH FA Lit
- IAS 4472. Spanish-American Women Writers II**
Same as Span 4472.
A&S SD TH FA Lit
- IAS 448. Japanese Poetry**
Same as Japan 448.
A&S TH FA Lit
- IAS 4493. Diasporas and Transnationalism**
Same as Anthro 4493.
A&S SS FA SSP
- IAS 449C. Imperial Russia**
Same as History 449C.
A&S TH FA SSP
- IAS 4513. Contemporary Issues in the Developing World**
Same as Anthro 4513.
A&S SS FA SSP
- IAS 4517. Anthropology and Development**
Same as Anthro 4517.
A&S SS WI
- IAS 4533. Narratives of Fear: Violence in Latin-American Literature**
Same as Span 4533.
A&S TH FA Lit
- IAS 456. Business, Government, and the Public**
Same as Econ 456.
A&S QA SS FA SSP
- IAS 4580. British History: Beyond the Beatles—Britain in the 1960s**
Same as History 4580.
A&S TH
- IAS 459. Major Film Directors**
Same as Film 458.
A&S TH
- IAS 460. Postmodern Narratives in Latin America**
Same as Lat Am 460.
This course analyzes some critical and theoretical texts on modernity/postmodernity as well as representative novels and films of the post-boom era that illustrate the topics of urban violence, sexuality, and marginality in several Latin-American countries. Credit 3 units.
A&S TH
- IAS 462. Latin America and the West**
Same as Lat Am 462.
From the perspective of postcolonial theory, the course covers different aspects related to Latin America's cultural history, from the Discovery to the present. Some of the issues discussed in class are: the colonial encounter; Baroque culture and the emergence of Creole societies in the "New World," the connections between Enlightenment and nationalism, as well as the interweaving of "coloniality" and modernity. Prerequisite: Lat Am 165C Survey of Latin American Culture or an advanced level course on Latin America. Credit 3 units.
A&S TH
- IAS 465. Post-Colonial Theory and Society**
Same as STA 465.
A&S SS FA SSP
- IAS 467. The Chinese Theater**
Same as Chinese 467.
A&S CD SD TH FA AH
- IAS 468. Cities in Asia**
Same as Art-Arch 4683, East Asia 4681, History 4680.
This course encourages students to gain familiarity with historical issues involved in understanding cities in East, South, and Southeast Asia. In the context of a seminar setting, students read and discuss various works of scholarship by historians, archaeologists, anthropologists, art and architectural historians, and others, on city design, growth, social milieu, and representation. Indigenous urban traditions, colonial environments, and the question of modernity and the city in the 20th century are all examined. Then, having gained an understanding of the sorts of primary and visual sources that can be utilized to explore the history of cities in Asia, students create their own work of urban history by selecting a topic to present in class and to form the subject of a research paper. Credit 3 units.
A&S TH
- IAS 469. East Asian Feminisms**
Same as East Asia 469.
A&S SD TH
- IAS 4700. Readings in Chinese Literature**
Same as Chinese 470.
A&S TH FA Lit
- IAS 4710. Topics in Modern Arabic Literature in Translation: Modern Arabic Narratives: Self, Society, and Culture**
Same as Arab 471.
A&S TH FA Lit
- IAS 4711. Topics in Japanese Culture**
Same as East Asia 471.
A&S TH FA SSP
- IAS 4712. Topics in Religious Studies: Gender and Religion in China**
Same as Re St 4711.
A&S TH FA SSP
- IAS 4730. Political Economy of Multinational Enterprises**
Same as Pol Sci 4730.
A&S SS
- IAS 4731. Global Political Economy**
Same as Pol Sci 4731.
A&S SS FA SSP
- IAS 4752. Topics in International Politics: Terrorism and Guerrilla War in International Perspective**
Same as Pol Sci 475.
A&S SS FA SSP
- IAS 4753. International Trade**
Same as Econ 475.
A&S SS FA SSP
- IAS 476. Reading Seminar in Chinese Traditional Fiction**
Same as Chinese 476.
A&S TH FA Lit
- IAS 4760. Topics in Religious Studies: Chinese Popular Religion**
Same as Re St 476.
A&S TH FA AH Lit
- IAS 4761. Politics of International Finance**
Same as Pol Sci 4761.
A&S SS FA SSP
- IAS 479. Reading Seminar in Modern Chinese Literature**
Same as Chinese 479.
A&S CD TH FA Lit
- IAS 4790. Seminar in Religious Studies: Engendering Religious Studies**
Same as Re St 479.
A&S SD TH
- IAS 4791. Topics in Politics: Political Economy of Development**
Same as Pol Sci 4791.
A&S SS FA SSP
- IAS 4792. Globalization and National Politics**
Same as Pol Sci 4792.
A&S SS FA SSP
- IAS 480. Topics in International Politics: Growth and Development**
Same as Pol Sci 480.
A&S SS FA SSP
- IAS 4801. Reading Seminar in Popular Literature and Culture: Writing Stories in Late Imperial China**
Same as Chinese 480.
A&S TH FA Lit
- IAS 481. Reading Seminar in Religion and Chinese Literature**
Same as Chinese 481.
A&S TH FA Lit

IAS 4816. Art and Culture in Fin-de-Siècle Europe*Same as Art-Arch 4816.***A&S TH FA AH****IAS 482. Reading Seminar in Gender and Chinese Literature***Same as Chinese 482.***A&S TH FA Lit****IAS 484. Core Seminar in East Asian Studies:***Same as East Asia 484.***A&S CD TH WI FA SSP****IAS 4842. The Japanese Empire in Asia, 1874–1945***Same as History 4842.***A&S CD TH****IAS 4862. Exoticism and Orientalism in 19th-Century Art***Same as Art-Arch 4862.***A&S TH FA AH****IAS 4864. Exoticism and Primitivism in Modern Art***Same as Art-Arch 4864.***A&S TH FA AH****IAS 4872. Colonial Cities and the Making of Modernity***Same as History 4872.***A&S CD TH FA SSP****IAS 4882. Anthropology and Public Health***Same as Anthro 4882.***A&S SS FA SSP****IAS 489. Topics in Modern Chinese Literature***Same as Chinese 489.***A&S TH FA Lit****IAS 4892. Advanced Seminar in History: Latin America and the United States in the 20th Century***Same as History 4890.***A&S TH FA SSP****IAS 4894. Advanced Seminar in History: The United States in Vietnam: Origins, Developments, and Consequences***Same as History 4894.***A&S TH FA SSP****IAS 4900. Advanced Seminar in History: Intellectual Revolution in 20th-Century China***Same as History 4900.***A&S TH FA SSP****IAS 4910. Topics in Islam: Conceptualizing Islam***Same as Re St 490.***A&S TH****IAS 4912. The Nativist Dimension in Modern Japanese Culture***Same as East Asia 4911.***A&S TH****IAS 4916. Advanced Seminar in History: Democracy in Latin America***Same as History 4916.***A&S TH FA SSP****IAS 4918. Postmodernism***Same as Ital 491.***A&S TH WI****IAS 4920. The Italian Detective Novel***Same as Ital 492.***A&S TH WI FA Lit****IAS 4921. Advanced Seminar in History: Modern Japanese History***Same as History 4921.***A&S TH FA SSP****IAS 4925. Advanced Seminar in History: Communist China***Same as History 4923.***A&S TH FA SSP****IAS 4927. Reading Seminar: Women in Chinese History***Same as East Asia 4924.***A&S TH FA SSP****IAS 4930. Advanced Seminar in History: The Transformation of Western European Societies, 1960–1990***Same as History 4930.***A&S TH****IAS 4932. Advanced Seminar in History: Japanese Foreign Relations***Same as History 4932.***A&S TH W FA SSP****IAS 4934. Advanced Seminar in History: British Empire in Cross-Cultural Perspective, 1800–1970***Same as History 4934.***A&S TH FA SSP****IAS 4967. Advanced Seminar in History: Migration and Travel in China***Same as History 4967.***A&S TH****IAS 4968. Advanced Seminar in History: War, Society, and Identity: the European Novel of the 1920s***Same as History 4968.***A&S TH****IAS 4973. Advanced Seminar in History: Criminals, Rebels, Lunatics, and Colonialism***Same as History 4973.***A&S TH FA SSP****IAS 4982. Advanced Seminar in History: Women and Confucian Culture in Early Modern East Asia***Same as History 4982.***A&S TH****IAS 4986. Advanced Seminar in History: European History***Same as History 4986.***A&S TH****IAS 4988. Advanced Seminar in History: the French Revolution***Same as History 4988.***A&S TH****IAS 4997. Advanced Seminar in History: Individual and Society in Revolutionary China***Same as History 4997.***IAS 4998. Advanced Seminar in History: Introduction to Comparative Civilizational Analysis: United States, China, and Japan***Same as History 4999.***A&S TH****IAS 500. Independent Study**

Prerequisites: senior standing and permission of the chair of the International and Area Studies program. Credit variable, maximum 3 units.

Jewish, Islamic, and Near Eastern Studies

**Director and Associate Professor of Hebrew Bible and Biblical Hebrew
Pamela Barmash**(Asian and Near Eastern Languages and Literatures)
Ph.D., Harvard University**Endowed Professors****John R. Bowen**

Dunbar–Van Cleve Professor in Arts & Sciences

(Anthropology)

Ph.D., University of Chicago

Hillel J. Kieval

Gloria M. Goldstein Professor of Jewish History and Thought

(History)

Ph.D., Harvard University

Professors**Lois Beck**

(Anthropology)

Ph.D., University of Chicago

Robert L. Canfield

(Anthropology)

Ph.D., University of Michigan

Gerald N. Izenberg

(History)

Ph.D., Harvard University

Joseph Schraibman

(Romance Languages)

Ph.D., University of Illinois at Urbana–Champaign

Associate Professors**Nancy E. Berg**

(Asian and Near Eastern Languages and Literatures)

Ph.D., University of Pennsylvania

Ahmet T. Karamustafa

(History and Religious Studies)

Ph.D., McGill University

Fatemeh Keshavarz Karamustafa

(Asian and Near Eastern Languages and Literatures)

Ph.D., University of London

Timothy H. Parsons

(History and African and African American Studies)

Ph.D., Johns Hopkins University

Jack Shapiro

(Mathematics)

Ph.D., City University of New York

Assistant Professors**Cathleen Fleck**

Scholar in Residence

Ph.D. in Art History, Johns Hopkins University

Martin Jacobs

(Asian and Near Eastern Languages and Literatures; Jewish, Islamic, and Near Eastern Studies)
Ph.D. and Habilitation, Free University of Berlin

Erin McGlothlin

(Germanic Languages and Literatures)
Ph.D., University of Virginia

Nancy Reynolds

(History)
Ph.D., Stanford University

Nargis Virani

(Asian and Near Eastern Languages and Literatures)
Ph.D., Harvard University

Lecturers**Housni Bennis**

Ph.D. candidate, Washington University
Lecturer in Arabic Language

Giore Etzion

(Asian and Near Eastern Languages and Literatures)
M.A., University of Michigan

Hanaa Kilany

Ph.D., University of Pennsylvania
Lecturer in Arabic Language

Rami J. Pinsberg

(Asian and Near Eastern Languages and Literatures)
M.Ed., University of Missouri–St. Louis

Roschanack Shaery

(Persian)
Ph.D., University of Chicago

Mohammad Warsi

(Asian and Near Eastern Languages and Literatures)
Ph.D. Aligarh Muslim University
Southeast Asian Languages and Literatures

Professors Emeriti**Henry W. Berger**

(History)
Ph.D., University of Wisconsin

Victor T. Le Vine

(Political Science)
Ph.D., University of California–Los Angeles

Joseph R. Rosenbloom

(Jewish, Islamic, and Near Eastern Studies)
D.H.L., Hebrew Union College

Patty Jo Watson

Edward Mallinckrodt Distinguished
University Professor
(Anthropology)
Ph.D., University of Chicago

Jewish, Islamic, and Near Eastern Studies is an interdisciplinary program whose purpose is to explore the historical experience, literary, religious, and cultural expression, and political and material life of the Jewish, Islamic, and Near Eastern civilizations. Whether you favor the study of language, literature, religion, history, or politics, you will find in our courses a way to deepen your appreciation of these complex and diverse soci-

eties and cultures. You will also be encouraged to explore the interaction of Jews and Muslims with neighboring societies and cultures in the Middle East, Europe, North Africa, and other parts of the world.

Our majors and minors have gone on to do many things after graduation. Many have entered professional schools in such fields as law, education, the ministry or rabbinate, and communal or social work. Others have gone on to do graduate work in either Jewish or Islamic studies or in related disciplines. Still others have combined their interest in Jewish, Islamic, and Near Eastern Studies with careers in business, medicine, or scientific research. All have found the major to have been an intellectually and emotionally rewarding experience and an important component of their overall development.

The Major: Students will select one of two tracks: Jewish and Near Eastern Studies or Islamic and Near Eastern Studies. To complete a major in Jewish, Islamic, and Near Eastern Studies, a student must fulfill the following basic requirements:

- For Jewish and Near Eastern Studies: two years of Hebrew language.
- For Islamic and Near Eastern Studies: two years of Arabic language or Persian language.
- For all majors: JNE 208F (Introduction to Jewish Civilization) and JNE 210C (Introduction to Islamic Civilization).

In addition, you must complete 21 units in the major at the 300 level or above, which includes:

- For Jewish and Near Eastern Studies: a minimum of 3 units in the Islamic experience.
- For Islamic and Near Eastern Studies: a minimum of 3 units in the Jewish experience.
- For all majors: a combined capstone course/senior seminar (normally 3 units).
- For all majors: of the remaining 15 units, students are strongly encouraged to take at least one course in history, one in literature or cultural studies, and one in religious studies.

The Minor: Students wishing to minor in Jewish, Islamic, and Near Eastern Studies must complete 15 units in at least five courses, one of which must be JNE 208F, Introduction to Jewish Civilization, or JNE 210C(Q), Introduction to Islamic Civilization.

At least nine units must be earned in courses at the 300 level or above. A maximum of 6 credit hours from language courses (Arabic, Hebrew, Persian) can be applied toward the minor. Please note that because 9 of the 15 units need to be at the 300 level or beyond for the minor, and because we also require either Islamic civilization or Jewish civilization, this means that a student normally can apply 3 credits of first- or second-year language at most, and then possibly 3 more credits from higher language courses subject to the approval of his/her adviser.

A maximum of 3 units of lower-level course work and 3 units of advanced course work (300 level and above) may be applied

toward the JINES minor from study abroad or at another university. Credit will only be awarded to those courses that have been approved by Washington University. No more than *three (3)* units may be taken in Independent Study (JNE 500). Courses taken Pass-Fail may *not* count toward the minor. **Study Abroad:** Students majoring in Jewish, Islamic, and Near Eastern Studies are encouraged to participate in the Washington University Overseas Studies program. The University currently sponsors a preapproved program of study at the Hebrew University in Jerusalem that can accommodate both tracks of the JINES major. Study abroad options (which may require approval on a case-by-case basis) also exist for London (University College), Dublin (Trinity College), Prague (CET Academic Programs), Cairo (American University in Cairo), and Beirut (American University of Beirut). A maximum of 9 units of advanced course work (300 level and above) may be applied toward the JINES major from study abroad or courses taken at another university. Credit will only be awarded those courses that have been approved by the JINES study abroad adviser.

Senior Honors: Jewish, Islamic, and Near Eastern Studies majors who have a cumulative GPA of 3.5 or higher after six semesters are eligible to apply for candidacy for departmental senior honors. Once they receive departmental approval, candidates must satisfactorily complete a senior honors thesis in order to be recommended to the College for honors.

The senior honors thesis is a research project that is significantly larger than the usual term paper. It is usually about 50-60 pages long. In writing this thesis, the candidate is expected to make use of both primary and secondary sources and to demonstrate critical and analytic skills. The candidate also is encouraged to make use of any foreign language skills she/he may possess for the research. Proper citation of sources and a clear and consistent stylistic format will be expected.

Candidates, in consultation with their advisers, should choose their area of interest and find an appropriate faculty member to serve as their thesis supervisor in the spring semester of their junior year. They then need to apply for the honors program in writing to the director of Jewish, Islamic, and Near Eastern Studies by Sept. 1. The written application should contain a tentative description of the project, the supervisor's endorsement of the candidacy, and the candidate's unofficial transcript with the latest GPA clearly indicated. This early planning allows candidates to use the summer months to conduct preliminary research. Candidates must enroll in JNE 499, Independent Work for Senior Honors, in both the fall and spring semesters of their senior year (normally for a total of six credit hours).

The responsibilities of the thesis supervisor include: setting up regular meetings with the candidate; helping the candidate design a research and writing plan; monitoring the

candidate's progress through meetings and periodic written drafts; and offering feedback in a timely fashion.

The responsibilities of the candidate include: setting up regular meetings with the thesis supervisor; adhering to the research and writing plan jointly developed by the candidate and the supervisor; seeking out the supervisor for help when needed; meeting agreed-upon deadlines and abiding by the guidelines outlined in the Statement of Student Academic Integrity.

The candidate needs to write a substantial progress report (a 20-30 page document with an outline of the thesis, a schedule of completion, and a bibliography) by the first day of the spring semester. No candidate will be allowed to continue the program unless this report is submitted on time and is accepted as satisfactory by the supervisor. The student will receive a grade of I for the fall semester.

By the first week of March, candidates should submit a final draft of their thesis to their supervisor. The thesis will be evaluated by a committee of two faculty members, including the supervisor. It is extremely important that this draft be submitted on time: late submission will be sufficient cause for candidates to lose their chance to receive honors.

Committee members may suggest revisions to the thesis. They will also decide whether or not to forward their recommendation to the director of Jewish, Islamic, and Near Eastern Studies that the candidate be awarded Honors.

By or before April 15th, the candidate should submit the completed thesis, with revisions if necessary, to the Program office.

The final draft should be typed (please use 12-point font), double-spaced, with 1-inch margins all around. It should be either bound or placed in a notebook, so that it may be shelved in the Program office along with other theses and dissertations. The supervisor will then submit the grade for both semesters of JNE 499.

Please note that awards of A.B. *cum laude*, *magna cum laude*, and *summa cum laude* currently require cumulative averages of 3.5, 3.65 and 3.8, respectively. Also, transfer students must have earned at least 40 graded units within the five residential undergraduate schools of the University prior to the final semester, and that grades earned at other institutions do not figure in the calculation of minimum averages required for eligibility for Honors.

Undergraduate Courses

JNE 105I. Introduction to Judaism, Christianity, and Islam

Same as Re St 105.

A&S TH

JNE 105D. Beginning Modern Hebrew I

Same as MHBR 105D.

A&S LA

JNE 106D. Beginning Modern Hebrew II

Same as MHBR 106D.

A&S LA

JNE 107D. Beginning Arabic I

Same as Arab 107D.

A&S LA

JNE 108D. Beginning Arabic II

Same as Arab 108D.

A&S LA

JNE 111D. Beginning Hindi I

Same as Hindi 111D.

A&S LA

JNE 112D. Beginning Hindi II

Same as Hindi 112D.

A&S LA

JNE 116D. Beginning Persian I

Same as Pers 116D.

A&S LA

JNE 117D. Beginning Persian II

Same as Pers 117D.

A&S LA

JNE 151D. Advanced Beginning Modern Hebrew I

Same as MHBR 151D.

A&S LA

JNE 200. Internship

For students with at least one course in Jewish, Islamic, and Near Eastern Studies who wish to do an internship. Prerequisite: permission of the director of the program. A "learning agreement" must be submitted and approved prior to beginning internship work. Credit 3 units.

JNE 200I. Asian and Near Eastern Languages and Literatures

Same as ANELL 200.

A&S CD TH

JNE 201. Women Writers of the Near and Far East

A team-taught comparative introduction to the literatures and cultures of Asia and the Near East. We focus on women writers of Iran, Israel, and Japan, while we explore their literary creations in the context of their respective cultures as well as in the larger context of women's culture. Each of the literary traditions considered this term is supported by long and rich histories—histories that have seen both fracture and continuity in the 20th century. We investigate how women of these cultures write within and against tradition. Of particular concern is an analysis of the ways women express themselves as artists; the ways they depict themselves against the fabric of society; and the ways they use writing as sustained rebellion. Prerequisite: None. Credit 3 units.

A&S LA FA Lit

JNE 201I. Intermediate Hindi I

Same as Hindi 201.

A&S LA

JNE 202I. Intermediate Hindi II

Same as Hindi 202.

A&S LA

JNE 205I. Literature and Film from Asia and the Near East

Same as ANELL 205.

A&S CD TH

JNE 207D. Intermediate Arabic I

Same as Arab 207D.

A&S LA

JNE 208D. Intermediate Arabic II

Same as Arab 208D.

A&S LA

JNE 208F. Introduction to Jewish Civilization

Same as History 208I, Re St 208F, JNE 209.

This course is a selective survey of the historical, religious, cultural, literary, and political development of Judaism from antiquity to the present. Topics include the development of the Bible and subsequent textual tradition of Judaism, the basic concepts of Jewish religious thought, Jewish law, custom and ritual, and art. The course highlights a

variety of Jewish communities in different cultural and geographical settings, such as the Jews in the Roman Empire, Jewish life under Medieval Islam and Christianity, and the Jewish experience in modern Europe, the United States, and Israel. Each week a different topic is studied through primary and secondary readings (in translation), to be supplemented by audiovisual materials. Credit 3 units.

A&S TH FA SSP

JNE 209I. Scriptures and Scripturalism

Same as Hum 209.

A&S CD TH

JNE 210C. Introduction to Islamic Civilization

Same as JNE 210, Med-Ren 213C, Re St 210C, History 214C.

This course explores the historical and social development of the complex and dynamic entity known as Islamic civilization. It requires no prior knowledge of Islam or Middle Eastern history. The geographic focus is on the Arab Middle East and Iran, and the chronological period covered is from the rise of Islam to the present. The readings consist of a selection of translated primary sources as well as complementary background essays. The emphasis of the course is on texts and their changing interpretations over time. Although they do not represent the experience of Islam for all social groups, these texts have had wide circulation and continue to inspire meaningful debate among Muslims. We do not deal with the question of what constitutes the "true" Islam. Credit 3 units.

A&S CD TH FA SSP

JNE 213D. Intermediate Modern Hebrew I

Same as MHBR 213D.

A&S LA

JNE 214D. Intermediate Modern Hebrew II

Same as MHBR 214D.

A&S LA

JNE 216D. Intermediate Persian I

Same as Pers 216D.

A&S LA

JNE 217D. Intermediate Persian II

Same as Pers 217D.

A&S LA

JNE 225C. Introduction to Indic Culture and Civilization

Credit 3 units.

A&S TH FA SSP

JNE 300. Introduction to the Hebrew Bible/Old Testament

Same as Re St 300.

A&S TH FA SSP

JNE 3010. Topics in Art History: Islamic Art

JNE 3011. Honors Course for Sophomores I: Tutorial in History

Same as History 301.

A&S TH FA SSP

JNE 301C. The Jews in the Ancient World

Same as JNE 301, BHBR 301C, Re St 374C, History 310C.

Jewish history through the biblical and rabbinic periods; emphasis on political, cultural, and religious life and ideas. Credit 3 units.

A&S CD TH FA SSP

JNE 302. Introduction to the History and Culture of Ancient Mesopotamia

Same as History 302I, Re St 302I, BHBR 302.

This course introduces students to the first great human civilization, Ancient Mesopotamia. Combining textual evidence and material remains we survey all major facets of Mesopotamian culture: the environment, political history, and "everyday life," including portraits of several material, social, and economic aspects of society: religion, myth, art, science, and medicine. The course focuses on

helping the student to understand empathetically the Mesopotamian worldview, to interact with primary materials (in translation), and to evaluate the ideas of historians dedicated to investigating this culture. Since some of the practices of this ancient culture are quite different from our own (such as magic, divination, the gods), yet others have made important contributions to world civilization (including the West, such as writing and astronomy), the course also is an important experience in cross-cultural learning. Credit 3 units.

A&S TH FA SSP

JNE 305. Wisdom Literature of the Bible

Same as Re St 305.

A&S TH

JNE 305B. Greater Central Asia in Crisis

Same as Anthro 305B.

A&S CD SS

JNE 306. Between Submission and Power: Women and Family in Islam

Same as WGS 306.

A&S CD SS FA SSP

JNE 3061. Modern Jewish Writers

Same as Comp Lit 306.

A&S TH FA Lit

JNE 307D. Advanced Arabic I

Same as Arab 307D.

A&S LA

JNE 3082. Introduction to Rabbinic Judaism

Same as Re St 3082.

A&S TH FA SSP

JNE 308D. Advanced Arabic II

Same as Arab 308D.

A&S LA

JNE 309. Classical Jewish Philosophy

Same as Re St 373.

The history of Jewish philosophy, from the ancient world through medieval thinkers such as Maimonides and Halevi, is surveyed in the context of the development of Western philosophy. Credit 3 units.

A&S TH FA SSP

JNE 310. Contemporary Jewish Thought

Same as Re St 310, Phil 310.

A study of the representative figures and problems of modern Jewish thought from Spinoza to the present. Other topics include: the impact of the European Enlightenment; Zionism; Buber; Rosenzweig; Kaplan; and Soloveitchik. Prerequisite: JNE 208F or the equivalent. Credit 3 units.

A&S TH FA Lit SSP

JNE 3101. The Problem of Evil

Same as Re St 3101.

A&S TH

JNE 313C. Islamic History: 622–1200

Same as History 313C.

A&S TH FA SSP

JNE 314C. Islamic History: 1200–1800

Same as History 314C.

A&S TH FA SSP

JNE 3150. The Middle East in the 20th Century

Same as History 3150.

A&S CD TH FA SSP

JNE 3151. The Palestinian-Israeli Conflict, 1881–Present

Same as History 3151.

A&S TH FA SSP

JNE 3152. The History of Iran from 1501 to the Present

Same as History 3152.

A&S TH FA SSP

JNE 315C. The Middle East in Modern Times (1800–Present)

Same as History 315C.

A&S TH FA SSP

JNE 320D. Advanced Modern Hebrew I

Same as MHBR 320D.

A&S LA

JNE 322C. African Civilization: 1800 to the Present

Same as AFAS 322C.

A&S CD TH FA SSP

JNE 322D. Modern Jewish Literature in Hebrew

Same as MHBR 322D.

A&S LA

JNE 323B. Politics of the Arab World

Same as Pol Sci 320B.

A&S SS FA SP

JNE 3241. Hebrew of the Media

Same as MHBR 324.

A&S LA

JNE 327. The Bible in the Jewish Tradition

Same as Med-Ren 3321, History 3321.

An introduction to the classical exegesis of the Hebrew Bible. Judaism developed through emerging perception of what the Bible dictated and what the Bible is. This course examines Jewish perceptions of the Bible from antiquity to the great medieval commentators. The mystical interpretation of the Bible and the philosophical and literary approaches are reviewed. Prerequisite: sophomore standing or permission of instructor. Credit 3 units.

A&S TH

JNE 3273. Introduction to Israel Studies

Same as JNE 5273, IAS 3273.

An exploration of Israel in the Jewish experience from antiquity to modernity and in the history and culture of the Middle East. Special attention is paid to the modern state of Israel and current issues in its politics, economy, and society. JNE 5273 is intended for graduate students only. Credit 3 units.

A&S TH

JNE 3313. Women and Islam

Same as Anthro 3313.

A&S CD SS FA SSP

JNE 3331. The Holocaust

Same as History 333.

A&S SD TH FA SSP

JNE 334C. History of the Jews in Christian Europe to 1789

Same as History 334C.

A&S C TH FA SSP

JNE 335C. The Jews in the Modern World

Same as History 335C.

A&S CD TH FA SSP

JNE 336C. History of the Jews in Islamic Lands

Same as History 336C.

A&S TH FA SSP

JNE 339C. Exile: Jews, Literature, and History

Same as IAS 3393, JNE 539C, MHBR 339C, History 392C, LH 339C.

From Adam and Eve's banishment through the advent of modern Zionism, exile has been a major theme in Jewish literature and history. We explore exile not only as an issue of geography but also from the perspectives of politics, religion, and psychology. We examine different experiences and interpretations of exile throughout Jewish history to the present. Contemporary Israeli writers continue the literary tradition of exile by writing the conflict between nation and individual. All read-

ings in English. Prerequisite, one course in history or literature or permission of instructor. Credit 3 units.

A&S CD TH

JNE 340. Israeli Women Writers

Same as MHBR 340.

A&S CD SD TH WI FA Lit

JNE 342C. Modern Near Eastern Literature

JNE 344. Imagining the Holocaust in Contemporary Jewish Literature

Same as Ger 331.

Recent public discourse on the Holocaust has displayed an anxiety that, with the gradual dying out of the survivor generation, the Holocaust too will soon pass into oblivion and one day be forgotten. Accompanying this anxiety about the vanishing eyewitness and the crisis of forgetting is often a parallel skepticism about narratives of the Holocaust that are not rooted in the direct experience of the survivor. Despite an injunction against fictional and imaginative representations of the Holocaust by survivors such as Elie Wiesel, however, the past 20 years have seen a wave of imaginative literature about the Holocaust written by non-survivors. This course examines recent post-Holocaust literature, both fictional and autobiographical, by contemporary Jewish writers from Europe, Israel, and the United States, including works by Art Spiegelman, David Grossman, Aharon Appelfeld, Nathan Englander, Anne Michaels, Nava Semal, Patrick Modiano, Jurek Becker, and others. Central to our inquiry into this literature are the questions of language, narrative structure, referentiality, artistic representation, intergenerational trauma, vicarious memory, and post-Holocaust Jewish identity. Credit 3 units.

A&S TH FA Lit SSP

JNE 345. Mesopotamian Mythology: Stories from Ancient Iraq

Same as JNE 545, Re St 333F.

In this course we read, explore, and interpret various ancient myths originating from the fertile crescent, especially ancient Iraq, between the years 2500 and 400 BCE. The Epic of Gilgamesh, the Enuma Elish, myths of the goddess Ishtar as well as various flood and creation accounts are among those we read. Cultural background information is examined to situate each myth in its ancient context. Various theories of interpreting myth also are explored in order to appreciate the power and the many uses of these multivalent stories. Several basic questions underlie all that we do throughout the semester: What is myth? How should we understand the conceptualization of the category "myth"—in other words, how does myth work? Does myth still play a role in our own modern cultures? Credit 3 units.

A&S CD TH

JNE 348. Medieval Jewish Travelogues, Chronicles, and Biographies

Same as BHBR 348.

A&S TH

JNE 349. Yidishkayt: Yiddish Literature in English Translation

Same as Comp Lit 3492.

This course traces the emergence, development, flourish, and decline of Yiddish literature, beginning with some of the earliest writings to appear in Yiddish, continuing with 19th-century attempts to establish a modern Yiddish literature and the emergence of both a classical canon and a literary avant garde, and ending with post-Holocaust attempts to retain a Yiddish literary culture in the near absence of Yiddish-speaking communities. Focusing on the role of Yiddish as the "national" language of Ashkenaz, the course examines the ways in which Yiddish literature has responded to the social conditions of European Jewish life, exploring among others the relationship between

Yiddish and the non-Jewish cultures in which it existed, the tensions between secular trends versus religious tradition, life in the shtetl and in the metropolis, immigration from the old world to the new, and Yiddish literary responses to the Holocaust. Credit 3 units.
A&S TH FA Lit

JNE 350. Israeli Culture and Society

Same as IAS 350, MHBR 350.

An examination of critical issues in contemporary Israeli culture and society, such as ethnicity, speech, humor, religious identity, and the Arab population, using readings in English translation from a variety of disciplines: folklore, literary criticism, political science, sociology, psychology, anthropology. Prerequisite: sophomore standing, or permission of instructor. Credit 3 units.
A&S CD SD TH FA SSP

JNE 355C. The Flowering of Islamic Literature, 500–1200

Same as Comp Lit 355C.

A&S CD TH FA Lit

JNE 358C. Modern Near Eastern Literatures

Same as Comp Lit 358C.

A&S TH FA Lit

JNE 362. Approaches to the Qu'ran

Same as Re St 366.

A&S CD TH

JNE 365F. The Bible as Literature

Same as E Lit 365F.

A&S TH FA Lit

JNE 375. How the World Began: Creation Myths of the Ancient World

Same as Re St 375.

A&S CD TH WI FA SP

JNE 376F. Sufism: God's Friends in Islam

Same as Re St 376F.

A&S TH FA SSP

JNE 378I. Israeli Politics

Same as Pol Sci 378I.

A&S CD SS FA SSP

JNE 380. Screening the Holocaust

Same as Film 375.

A&S TH FA AH

JNE 381. Topics in Religious Studies: From Chaos to Cosmos: Myth, Ritual, and Magic in the Ancient World

Same as Re St 380.

A&S TH FA SSP

JNE 384I. Introduction to Biblical Hebrew

Same as BHBR 384.

A&S LA

JNE 385D. Topics in Biblical Hebrew Texts

Same as BHBR 385D.

A&S TH

JNE 386. Topics in Jewish History

Consult Course Listings for current topics. Prerequisite: permission of instructor. Credit 3 units.

A&S TH FA SSP

JNE 387C. Topics in Hebrew Literature:

Same as MHBR 387C.

A&S TH FA Lit

JNE 390I. Lyrics of Mystical Love, East and West

Same as Comp Lit 390.

A&S CD TH WI FA Lit

JNE 4010. Fourth-Level Modern Hebrew I

Same as MHBR 4010.

A&S LA

JNE 402. Fourth-Level Modern Hebrew II

Same as MHBR 402.

A&S LA

JNE 4020. Jerusalem, the Holy City

Same as MLA 4020, ARC 4020, BHBR 4020, Re St 4020, History 4020.

An examination of the role that Jerusalem has played in three religious traditions—Judaism, Christianity, and Islam—through a study of archaeology, history, literature, politics, and theology from antiquity to contemporary times. A senior seminar in Jewish, Islamic, and Near Eastern Studies. During winter break, the class goes to Jerusalem as part of the course. Student portion of travel costs TBA. Students unable to make the trip receive a reduction to four units of course credit. Preference given to seniors majoring in Jewish, Islamic, and Near Eastern Studies. Others may enroll with instructor's permission. Credit 5 units.
A&S CD SD TH

JNE 403. Gender and Sexuality in Judaism

Same as Re St 4021, WGS 4031.

A critical inquiry into the Jewish sociocultural construction of gender, past and present. Topics include the nature of the Jewish covenantal community and male circumcision as a sign of membership; the matrilineal principle of ancestry; genital emissions and purity; marriage and divorce; and male and female roles, including leadership roles. Documents by and about Jewish women, their daily lives and their sacral lives, are among the materials explored. Prerequisite: JNE 208F is recommended. Credit 3 units.

A&S SD TH FA SSP

JNE 404I. Islam and Politics

Same as Anthro 404I.

A&S CD SS FA SSP

JNE 405. Diaspora in Jewish and Islamic Experience

Same as IAS 4050, Re St 405, History 4051.

The polarities of diaspora and home—periphery and center, wandering and rest, exile and return—have played important roles in the historical experience and religious culture of both Jews and Muslims. For long stretches of time, Jewish culture has been marked by the historical condition of statelessness combined with a theology of redemptive return. Paradoxically, it was the significant political and military success of Islam in its first millennium that helped to create a far-flung diaspora well removed from its center in Arabia. The institution of pilgrimage to Mecca counterbalanced a sense of distance and remove. More recently, modern nationalisms, war, and post-colonial politics—including the Israeli-Palestinian conflict—have done much to underscore the continuing dilemmas of diaspora and home in both Jewish and Islamic identity. The goal of the seminar is to offer a comparative, historical perspective on this theme and to encourage students to examine an aspect of the diaspora experience in depth. Credit 4 units.

A&S TH

JNE 406. Spanish Symbiosis: Christians, Moors, and Jews

Same as Span 406.

A&S CD TH FA Lit SSP

JNE 406I. Translation

Same as Comp Lit 406.

A&S TH

JNE 407. Fourth-Level Arabic I

Same as Arab 407.

A&S LA FA Lit

JNE 408I. Fourth-Level Modern Arabic II

Same as Arab 408.

A&S LA FA Lit

JNE 4100. The Ottoman Empire: 1300–1800

Credit 3 units.

A&S TH

JNE 415. Topics in Judaism

Same as Phil 492, Re St 415.

Prerequisite: permission of instructor. Credit 3 units.

A&S TH

JNE 417. Soul, Self, Person in Judaism, Christianity, and Islam: A Comparative Examination

Same as Re St 417.

A&S TH WI FA SSP

JNE 420. Topics in the Israeli Short Story

Same as MHBR 420.

A&S LA FA Lit

JNE 420I. Islam, Immigrants, and the Future of European Culture

Same as IAS 420.

A&S TH WI

JNE 4210. Christians and Muslims in the Mediterranean World 1100–1650

Same as History 4210.

A&S TH

JNE 4272. Topics in the History of Developing Areas

Same as History 4273.

A&S TH FA SSP

JNE 4325. Sacred Cities in Medieval Art and Culture

Same as Art-Arch 4325.

A&S TH FA AH

JNE 440. Topics in Rabbinic Texts: Mishnah and Gemara

Same as BHBR 440.

A&S TH

JNE 4442. The Jewish Experience in Eastern Europe

Same as History 4442.

A&S CD TH FA SSP

JNE 4443. Jews and the City: Urban Dimensions of Modern Jewish Experience

Same as History 4443.

A&S CD TH

JNE 445. Topics in Islam

Same as Re St 413.

Saintly mediators between God and man play a central role in Islamic piety. A focus on major aspects of saintly mediation such as the emergence and spread of the cult of saints, its place within Islamic religiosity in comparison with prophecy, and the institutional framework within which such mediation occurs. Related issues such as conversion to Islam and Islamization of originally non-Islamic beliefs and practices addressed. Prerequisite: JNE 210CQ, or permission of instructor. Credit 3 units.

A&S TH FA SSP

JNE 471. Topics in Modern Arabic Literature in Translation

Same as Arab 471.

A&S TH FA Lit

JNE 485. Topics in Jewish Studies

Same as Re St 485.

Consult Course Listings for current topic. Prerequisite: permission of instructor. Credit 3 units.

A&S TH

JNE 487. Topics in Jewish and Near Eastern Studies: Readings in Midrash

Same as Re St 487.

The aim of this course is to learn to read Midrash, the literature of classical Rabbinic Biblical interpretation. Addressing the literary, historical, and cultural context in which Rabbinic Midrash developed, we get to know a variety of Midrashic col-

lections covering a time span from late antiquity to the Islamic Middle Ages. These works were composed according to a complex set of exegetical and literary rules to be illustrated by the selected readings. Certain Midrashic genres reflect their origins in academic discourses, while others were delivered as public sermons, drawing on parables, legends, and folk lore. Among the topics studied are: How did the Rabbis read the Bible? What is the relationship between the plain meaning of the Biblical text and the polyphone interpretations of Midrash? Is Midrash a commentary or a literary discourse in its own right? Initially the Midrashic logic may seem elusive from the viewpoint of a modern Western reader, in turn its creative thinking proves to be smart, playful, at times even slippery, and yet substantial. All texts are read in translation. Credit 3 units.

A&S TH

JNE 4872. Colonial Cities and the Making of Modernity

Same as History 4872.

A&S CD TH FA SSP

JNE 4901. Topics in Islamic Thought: Proseminar in Methods and Approaches in Islamic Studies

Same as Re St 4901.

This seminar is an introduction to the methods, research tools, and theoretical assumptions that Islamicists have used to study diverse aspects of Islamic societies and civilizations, past and present. Critical reading and discussion of scholarly works are paired with bibliographical research assignments. Prerequisite: permission of the instructor. Credit 3 units.

A&S TH

JNE 4917. Advanced Seminar in History: Islamic History

Same as History 4917.

A&S TH FA SSP

JNE 497. Guided Readings in Arabic

Same as Arab 497.

A&S LA

JNE 4972. Guided Readings in Persian

Same as Pers 4972.

A&S LA

JNE 4973. Guided Readings in Hebrew

Same as MHBR 4973.

A&S LA

JNE 498. Guided Readings in Arabic

Same as Arab 498.

A&S LA

JNE 4982. Guided Readings in Persian II

Same as Pers 4982.

A&S LA

JNE 4983. Guided Readings in Modern Hebrew

Same as MHBR 4983.

A&S LA

JNE 4984. Guided Readings in Aramaic

Same as BHBR 4984.

A&S TH

JNE 4985. Guided Readings in Biblical Hebrew

Same as BHBR 4985.

A&S LA

JNE 4986. Guided Readings in Talmudic Aramaic and Rabbinic Texts

Prerequisite: instructor's permission. Credit variable, maximum 6 units.

A&S LA

JNE 4987. Guided Readings in Akkadian

Same as BHBR 4983.

A&S LA

JNE 499. Study for Honors in Jewish, Islamic, and Near Eastern Studies

Prerequisites: senior standing and permission of the chair of the Jewish, Islamic, and Near Eastern Studies program. Credit 3 units.

A&S TH

JNE 500. Independent Work in Jewish, Islamic, and Near Eastern Studies

Prerequisites: senior standing and permission of the chair of the Jewish, Islamic, and Near Eastern Studies program. Credit variable, maximum 6 units.

JNE 5001. Introduction to the Hebrew Bible/Old Testament

Same as Re St 300.

A&S TH FA SSP

JNE 5011. Honors Course for Sophomores I: Tutorial in History

Same as History 301.

A&S TH FA SSP

JNE 502. Proseminar in European Jewish History

Same as History 5382.

JNE 505B. Greater Central Asia in Crisis

Same as Anthro 305B.

A&S CD SS

JNE 507D. Advanced Arabic I

Same as Arab 307D.

A&S LA

JNE 5081. The American-Jewish Community: Organization and Service

JNE 508D. Advanced Arabic II

Same as Arab 308D.

A&S LA

JNE 5101. The Problem of Evil

Same as Re St 3101.

A&S TH

JNE 5150. The Middle East in the 20th Century

Same as History 3150.

A&S CD TH FA SSP

JNE 517. Advanced Persian II

Same as Pers 317.

A&S LA FA Lit

JNE 520. Third-Level Modern Hebrew I

Same as MHBR 320D.

A&S LA

JNE 522D. Third-Level Modern Hebrew II

Same as MHBR 322D.

A&S LA

JNE 5273. Introduction to Israel Politics

Same as JNE 3273.

A&S TH

JNE 5313. Women and Islam

Same as Anthro 3313.

A&S CD SS FA SSP

JNE 5314. Islamic History: 1200–1800

Same as History 314C.

A&S TH FA SSP

JNE 5331. The Holocaust: History and Memory

Same as History 333.

A&S SD TH FA SSP

JNE 5334. History of the Jews in Christian Europe to 1789

Same as History 334C.

A&S CD TH FA SSP

JNE 535C. The Jews in the Modern World

Same as History 335C.

A&S CD TH FA SSP

JNE 536C. The History of the Jews in Islamic Lands

Same as History 336C.

A&S TH FA SSP

JNE 539C. Exile: Jews, Literature, and History

Same as JNE 339C.

A&S CD TH

JNE 540. Israeli Women Writers

Same as MHBR 340.

A&S CD SD TH WI FA Lit

JNE 545. Mesopotamian Mythology: Stories from Ancient Iraq

Same as JNE 345.

A&S CD TH

JNE 548. Medieval Jewish Travelogues, Chronicles, and Biographies

Same as BHBR 348.

A&S TH

JNE 555. The Flowering of Islamic Literature 500–1200

Same as Comp Lit 355C.

A&S CD TH FA Lit

JNE 558C. Modern Near Eastern Literatures

Same as Comp Lit 358C.

A&S TH FA Lit

JNE 562. Approaches to the Qu'ran

Same as Re St 366.

A&S CD TH

JNE 5781. Israeli Politics

Same as Pol Sci 3781.

A&S CD SS FA SSP

Latin American Studies

Chair

Mabel Morana

William H. Gass Professor in Arts & Sciences
(Romance Languages and Literatures, IAS)
Ph.D., University of Minnesota

Endowed Professor

Elzbieta Sklodowska

Randolph Family Professor
in Arts & Sciences
(Romance Languages and Literatures)
Ph.D., Washington University

Professors

David L. Browman

(Anthropology)
Ph.D., Harvard University

John F. Garganigo

(Romance Languages)
Ph.D., University of Illinois

Richard J. Walter

(History)
Ph.D., Stanford University

Associate Professor

Brian Crisp

(Political Science)
Ph.D., University of Michigan

Assistant Professors

J. Andrew Brown

(Romance Languages and Literatures)
Ph.D., University of Virginia

Bret Gustafson

(Anthropology)
Ph.D., Harvard University

Stephanie Kirk

(Romance Languages and Literatures)
Ph.D., New York University

María Fernanda Lander

(Romance Languages and Literatures)
Ph.D., Brown University

Tabea Linhard

(Romance Languages and Literatures)
Ph.D., Duke University

Derek Pardue

(Anthropology, IAS)
Ph.D., University of Illinois,
Urbana-Champaign

Ignacio Sanchez Prado

(Romance Languages and Literatures, IAS)
Ph.D., University of Pittsburgh

Guillermo Rosas

(Political Science)
Ph.D., Duke University

Professor Emeritus

Pedro C. Cavalcanti

(Anthropology)
Ph.D., University of Warsaw

If you have particular interest in the cultures and societies of Latin America, but would like to study them from a comparative, interdisciplinary perspective, you may major in International and Area Studies (IAS) with a concentration in Latin American Studies. This program offers a wide range of courses, covering different aspects of pre-Hispanic, colonial, and modern cultures, and connecting the study of ancient traditions with contemporary debates. Survey courses and seminars incorporate approaches from cultural theory, historical, political, and anthropological analysis, and cultural studies. Washington University, with its Latin American Studies program, was one of the 10 founding institutions funded by a Ford Foundation grant in 1964. Students in this track generally acquire a high level of competency in Spanish and/or Portuguese, depending on field of specialization. Our overseas programs in Chile, Ecuador, and Mexico would be especially appropriate for students of Spanish as well as for those interested in conducting field work in these regions. For requirements for a major in International and Area Studies with a Latin American Studies concentration, please refer to International and Area Studies.

Undergraduate Courses

LatAm 165C. Survey of Latin-American Culture

Same as IAS 165C.
A&S CD TH FA SSP

LatAm 3092. Indigenous Peoples and Movements in Latin America

Same as Anthro 3092.
A&S CD SD SS

LatAm 3093. Anthropology of Modern Latin America

Same as Anthro 3093.
A&S SS

LatAm 310C. Ancient Civilizations of the New World

Same as Anthro 310C.
A&S CD TH FA AH

LatAm 312. Hispanic Culture and Civilization II

Same as Span 312.
A&S CD TH FA SSP

LatAm 3140. Topics in Latin-American History and Politics

Same as Pol Sci 3140.
A&S SS

LatAm 321C. Latin America: From Colonialism to Neocolonialism, 1492–1890

Same as History 321C.
A&S CD TH FA SSP

LatAm 322C. Latin America in the 20th Century

Same as History 322C.
A&S TH FA SSP

LatAm 3260. Race, Class, and Gender: Cultural Readings of Brazil and Its Cities

Same as IAS 3260.
A&S SS

LatAm 326B. Latin American Politics

Same as Pol Sci 326B.
A&S SS FA SSP

LatAm 330. Introduction to the Study of Hispanic Literature

Same as Span 330C.
A&S TH FA Lit

LatAm 335C. Spanish-American Literature I

Same as Span 335C.
A&S CD TH FA Lit

LatAm 336C. Spanish-American Literature II

Same as Span 336C.
A&S CD TH FA Lit

LatAm 416. Latin American Theater

Same as Span 426.
A&S SD TH FA AH

LatAm 4231. Contemporary Issues in Latin America

Same as Pol Sci 4231.
A&S SS FA SSP

LatAm 428. Spanish-American “Traditional” Novel

Same as Span 4281.
A&S SD TH FA Lit

LatAm 430. Latin-American Essay

Same as Span 430.
A&S TH FA Lit

LatAm 431. Latin-American Poetry I

Same as Span 431.
A&S TH FA Lit

LatAm 432. Latin-American Poetry II

Same as Span 432.
A&S TH FA Lit

LatAm 4517. Anthropology and Development

Same as Anthro 4517.
A&S SS WI

LatAm 4533. Narratives of Fear: Violence in Latin American Literature

Same as Span 4533.
A&S TH FA Lit

LatAm 460. Postmodern Narratives in Latin America

Same as IAS 460.
A&S TH

LatAm 462. Latin America and the West

Same as IAS 462.
A&S TH

LatAm 4791. Topics in Politics: Political Economy of Development

Same as Pol Sci 4791.
A&S SS FA SSP

LatAm 4890. Advanced Seminar: Latin America and the United States in the 20th Century

Same as History 4890.
A&S TH FA SSP

LatAm 4916. Advanced Seminar in History: Democracy of Latin America

Same as History 4916.
A&S TH FA SSP

Legal Studies

Chair

David T. Konig, Professor
(History and Law)
Ph.D., Harvard University

Endowed Professors

John R. Bowen
Dunbar–Van Cleve Professor
in Arts & Sciences
(Anthropology)
Ph.D., University of Chicago

Jack Knight

Sidney W. Souers Professor
of Government
(Political Science)
Ph.D., University of Chicago

Douglass C. North

Spencer T. Olin Professor in Arts & Sciences
(Economics)
Ph.D., University of California–Berkeley

Professors

William R. Lowry
(Political Science)
Ph.D., Stanford University

Larry M. May

(Philosophy)
Ph.D., New School for Social Research

Associate Professor

Elizabeth K. Borgwardt
(History)
J.D., Harvard University
Ph.D., Stanford University

Assistant Professor

Margaret C. Garb
(History)
Ph.D., Columbia University

Professors Emeriti

Marvin J. Cummins
(Political Science)
Ph.D., University of Colorado

Carl P. Wellman

Hortense and Tobias Lewin Distinguished
University Professor Emeritus in the
Humanities
(Philosophy)
Ph.D., Harvard University

The Legal Studies minor is an interdisciplinary program that allows you to study the role of law and legal institutions in society. It is an academic program about law rather than vocational training in law.

When you minor in Legal Studies, you study about law in courses from anthropology, economics, history, philosophy, political science, and other liberal arts disciplines. The curriculum emphasizes the forces that shape law and the ways that peoples of different cultures and from different historical periods have used and interpreted the law.

Because Legal Studies is interdisciplinary in nature and offers a variety of courses, you

can design a course of study that addresses your individual needs and interests. You may choose to take advantage of internships available in law and government.

Legal Studies is an excellent prelaw program. It also prepares you well for other graduate study, as well as for a career in academia, business, politics, or social services.

The Minor: You are required to take a total of 18 units of credit, of which 12 must be outside the department of your major. Courses on legal studies topics, which are offered each semester by the various departments of the College of Arts & Sciences that participate in the program, are cross-listed below. Your minor must include at least three advanced courses (300 level and above).

Undergraduate Courses

Lw St 0001. Legal Studies Elective
Credit variable, maximum 3 units.

Lw St 101B. American Politics
Same as Pol Sci 101B.
A&S SS FA SSP

Lw St 102B. Comparative Politics
Same as Pol Sci 102B.
A&S SS FA SSP

Lw St 103B. Introduction to Political Economics: Microeconomics
Same as Econ 103B.
A&S QA SS FA SSP

Lw St 104B. Introduction to Political Economics: Macroeconomics
Same as Econ 104B.
A&S QA SS FA SSP

Lw St 105G. Introduction to Logic and Critical Analysis
Same as Phil 100G.
A&S LA QA FA SSP

Lw St 107B. Introduction to Women's Studies
Same as WGS 100B.
A&S SD TH FA SSP

Lw St 108. Introduction to Political Theory II: Classics of Western Social and Political Thought
Same as Pol Sci 107.
A&S SS

Lw St 120B. Social Problems and Social Issues
Same as STA 120B.
A&S SS FA SSP

Lw St 131F. Present Moral Problems
Same as Phil 131F.
A&S TH FA SSP

Lw St 1ABR. Legal Studies Course Work Completed Abroad
Credit variable, maximum 12 units.

Lw St 205I. History of American Radicalism: From the Abolitionists to the Battle of Seattle
Same as History 205I.
A&S TH FA SP

Lw St 208B. African-American Studies: An Introduction
Same as AFAS 208B.
A&S SD TH FA SSP

Lw St 210I. Freshman Seminar: Gender and Citizenship
Same as WGS 210.
A&S SD TH FA SSP

Lw St 210B. Gender Roles

Same as STA 210B.
A&S SD SS FA SSP

Lw St 2152. The Theory and Practice of Justice: The American Historical Experience
Same as History 2152.
A&S SD TH FA SSP

Lw St 219. Introduction to the Sociology of Law
Same as STA 218.
A&S SS FA SSP

Lw St 220. History of Modern Social Theory
Same as STA 220.
A&S SS

Lw St 221. Seminar in Law and Society
Same as Focus 221.
A&S SS FA SSP

Lw St 222. Seminar in Law and Society
Same as Focus 222.
A&S SS FA SSP

Lw St 233F. Biomedical Ethics
Same as Phil 233F.
A&S TH FA SSP

Lw St 235F. Introduction to Environmental Ethics
Same as Phil 235F.
A&S TH FA SSP

Lw St 299. Undergraduate Internship in Legal Studies

Students receive credit for a faculty-directed and approved internship. Registration requires completion of the Learning Agreement that is obtained by the student from the Career Center and must be filled out and signed by the Career Center and the faculty sponsor prior to beginning internship work. Credit should correspond to actual time spent in work activities, for example 8 to 10 hours a week for 13 or 14 weeks to receive 3 units of credit; 1 or 2 credits for fewer hours. Students may not receive credit for work done for pay but are encouraged to obtain written evaluations about such work for the student's academic adviser and career placement file. Credit variable, maximum 3 units.
FA SSP

Lw St 301B. Individual, Family, and Community
Same as STA 301B.
A&S SD SS FA SSP

Lw St 3032. Western Thought and Contemporary Social Problems
Same as STA 3032.
A&S SS FA SSP

Lw St 306I. Between Submission and Power: Women and the Family in Islam
Same as WGS 306.
A&S CD SS FA SSP

Lw St 3072. Cracks in the Republic: Discontent, Dissent, and Protest in America, 1950–1975
Same as History 3072.
A&S D TH FA SSP

Lw St 307C. History of Law in American Life I: English and Colonial Foundations to 1776
Same as History 307C.
A&S TH FA SSP

Lw St 3103. Topics in Politics: Constitutional Politics in the United States

Lw St 3111. Family, Kinship, and Marriage
Same as Anthro 3111.
A&S SS FA SSP

Lw St 312. Argumentation*Same as E Comp 312.***A&S** LA WI**Lw St 314. Islamic History: 1200–1800***Same as History 314C.***A&S** TH **FA** SSP**Lw St 315. Introduction to Social Psychology***Same as Psych 315.***A&S** SS **FA** SSP**Lw St 320. Poverty and Social Problems**

See department. Credit 3 units.

Lw St 326. American Economic History*Same as Econ 326.***A&S** SS **FA** SSP**Lw St 330. Poverty and Social Issues**

See department. Credit 3 units.

A&S SS **FA** SSP**Lw St 331. Theories of Justice***Same as Pol Sci 331.***A&S** SS **FA** SSP**Lw St 3310. Gender and American Politics***Same as Pol Sci 331B.***A&S** SD SS **FA** SSP**Lw St 3311. Environmental and Energy Issues**

See department. Credit 3 units.

Lw St 331F. Classical Ethical Theories*Same as Phil 331F.***A&S** TH **FA** SSP**Lw St 3321. Constitutionalism and Democracy***Same as Pol Sci 3321.***A&S** SS**Lw St 3325. Constitutional Politics***Same as Pol Sci 3325.***A&S** SS **FA** SSP**Lw St 332B. Environmental and Energy Issues***Same as Pol Sci 332B.***A&S** SS **FA** SSP**Lw St 334B. Black Social Sciences****Lw St 335. Feminist Theory***Same as WGS 335.***A&S** SD TH **FA** SSP**Lw St 3371. Topics in Legal Studies: Management and Politics in the Legal Sector***Same as Pol Sci 3371.***A&S** SS **FA** SSP**Lw St 3381. National Security, Civil Liberties, and the Law***Same as Pol Sci 3381.***A&S** SS **FA** SSP**Lw St 3382. Urban Politics and Administration****Lw St 3401. Money and Morals in the Age of Merchant Capital***Same as History 3402.***A&S** TH **FA** SSP**Lw St 3402. Topics in Legal Studies: Democratic Theory***Same as Pol Sci 3402.***A&S** SS **FA** SSP**Lw St 340F. Social and Political Philosophy***Same as Phil 340F.***A&S** TH **FA** SSP**Lw St 344. Civil Liberties****Lw St 3440. Courts and Civil Liberties****Lw St 3441. Defendant's Rights***Same as Pol Sci 3441.***A&S** SS **FA** SSP**Lw St 346. Philosophy of Law***Same as Phil 346.***A&S** TH **FA** SSP**Lw St 350. Politics, Ethics, and Welfare***Same as Econ 350.***A&S** SS **FA** SSP**Lw St 353. The Economics of Law***Same as Econ 353.***A&S** SS **FA** SSP**Lw St 3531. Law and Economics***Same as Econ 3531.***Lw St 354. Abnormal Psychology***Same as Psych 354.***A&S** SS **FA** SSP**Lw St 358. Law, Politics, and Society***Same as Pol Sci 358.***A&S** SS **FA** SSP**Lw St 363. The American Legal System***Same as Pol Sci 353.***A&S** SS **FA** SSP**Lw St 365. The New Republic***Same as History 365.***A&S** TH **FA** SSP**Lw St 367. Modern America, 1877–1929***Same as History 367.***A&S** TH **FA** SSP**Lw St 372C. Law in American Life II: 1776 to the Present***Same as History 372C.***A&S** SD TH **FA** SSP**Lw St 3752. Women in American History***Same as History 3752.***A&S** SD TH **FA** SSP**Lw St 387C. Black America to the Civil War***Same as History 387C.***A&S** SD TH **FA** SSP**Lw St 388C. For Freedom's Sake: African-American History***Same as History 388C.***A&S** SD TH **FA** SSP**Lw St 390. Violence Against Women: Current Issues and Responses***Same as WGS 393.***A&S** SD SS **FA** SSP**Lw St 3912. Social Construction of Female Sexuality***Same as WGS 391.***A&S** SS **FA** SSP**Lw St 3ABR. Legal Studies Course Work Completed Abroad**

Credit variable, maximum 12 units.

Lw St 4002. Directed Fieldwork in Legal Research

A fieldwork project in empirical and/or archival legal research under the direction of a member of the Washington University faculty. The fieldwork may be planned and undertaken individually or as part of a formal project. Prerequisite: permission of supervising faculty member and director of the program is required. Credit variable, maximum 6 units.

A&S TH**Lw St 402. Drug Abuse in American Society: Social, Legal, and Political Consequences***Same as STA 402.***A&S** SS **FA** SSP**Lw St 405. Political Anthropology***Same as Anthro 405.***A&S** CD SD SS **FA** SSP**Lw St 410. Topics in Legal Studies: Law, Language, and Culture***Same as STA 410.***A&S** SS **FA** SSP**Lw St 417. History and (Auto)Biography from Modern South Africa***Same as History 3252.***A&S** CD TH**Lw St 418. Law and Individual Liberties**

See department. Credit 3 units.

A&S SS **FA** SSP**Lw St 4211. Philosophy of Social Science***Same as Phil 4211.***A&S** TH **FA** SSP**Lw St 4230. Religion and the Public Sphere in Early America****Lw St 4231. Topics in Comparative Politics: Equality and Public Policy**

See department. Credit 3 units.

Lw St 4232. Slavery and the American Imagination

See department. Credit 3 units.

Lw St 425. Poverty in America

See department. Credit 3 units.

Lw St 426. Economic Systems in Theory and Practice*Same as Econ 426.***A&S** SS **FA** SSP**Lw St 430. The Age of Integration: African-American Life and Culture, 1950–1954**

See department. Credit 3 units.

A&S TH **FA** SSP**Lw St 433. Topics in Comparative Politics: Equality and Public Policy**

See department. Credit 3 units.

A&S SS **FA** SSP**Lw St 434. Law and Individual Liberties**

See department. Credit 3 units.

A&S SS **FA** SSP**Lw St 4361. Culture, Power, and the State***Same as Anthro 4361.***A&S** SS **FA** SSP**Lw St 4401. Drugs and Behavior**

See department. Credit 3 units.

A&S SS **FA** SSP**Lw St 442. European Intellectual History, 1789–1890***Same as History 442.***A&S** TH **FA** SSP**Lw St 4431. Egalitarianism and Political Institutions**

See department. Credit 3 units.

A&S SS **FA** SSP**Lw St 4461. The Rule of Law***Same as Phil 4461.***A&S** TH**Lw St 448. Law and Individual Liberties**

See department. Credit 3 units.

A&S SS **FA** SSP**Lw St 4502. Topics in Legal History: Rationality, Law, and Legal Process***Same as Pol Sci 4502.***A&S** SS **FA** SSP**Lw St 4503. Topics in Legal Studies: Order, Diversity, and the Rule of Law***Same as Pol Sci 4503.***A&S** SD SS W **FA** SSP

Lw St 4513. Topics in Legal Studies: Criminal Law and Criminal Justice—Homicide*Same as Pol Sci 4513.***A&S SS WI FA SSP****Lw St 456. Business Government and the Public***Same as Econ 456.***A&S QA SS FA SSP****Lw St 458. The Theory of Property Rights***Same as Econ 458.***A&S SS FA SSP****Lw St 461. Introduction to Environmental Law and Policy***Same as CE 461.***Lw St 467. Game Theory***Same as Econ 467.***A&S SS FA SSP****Lw St 472. Social Theory and Anthropology***Same as Anthro 472.***A&S SS FA SSP****Lw St 483. Legal Internships***Same as Pol Sci 483.***A&S SS FA SSP****Lw St 485. Labor-Management Relations in Modern Economies***Same as Econ 485.***A&S SS FA SSP****Lw St 4907. Advanced Seminar: Women and Social Movements in the United States***Same as History 4907.***A&S SD TH FA SSP****Lw St 4946. The Federalist Papers: Politics and Philosophy in the Creation of the American Republic***Same as History 4946.***A&S TH FA SSP****Lw St 4951. The Civil Rights Movement***Same as History 4951.***A&S SD TH FA SSP****Lw St 4973. Advanced Seminar: Criminals, Lunatics, Rebels, and Colonialism***Same as History 4973.***A&S TH FA SSP****Lw St 4974. Advanced Seminar in History: Gender, Work, and Property Law***Same as History 4974.***A&S TH FA SSP****Lw St 4987. Advanced Seminar: Antislavery: The Legal Assault on Slavery in St. Louis***Same as History 4987.***A&S SD TH****Lw St 500. Independent Study**

Credit variable, maximum 6 units.

Linguistics

Director**David A. Balota**, Professor
(Psychology)
Ph.D., University of South Carolina**Assistant Professors****Brett D. Hyde**
(Philosophy, PNP, Linguistics)
Ph.D., Rutgers University**Brett Kessler**
(Psychology, PNP, Linguistics)
Ph.D., Stanford University**Lecturer****Joachim Faust**
(International and Area Studies, Linguistics)
Ph.D., University of Kansas**Participating Faculty****Joe Barcroft**, Assistant Professor
(Romance Languages and Literatures)
Ph.D., University of Illinois at Urbana-Champaign**John Baugh**
Margaret Bush Wilson Professor
in Arts & Sciences
(Psychology, Director of African and African American Studies)
Ph.D., University of Pennsylvania**John R. Bowen**
Dunbar-Van Cleve Professor
in Arts & Sciences
(Anthropology)
Ph.D., University of Chicago**Cindy A. Brantmeier**, Assistant Professor
(Romance Languages and Literatures)
Ph.D., Indiana University–Bloomington**Garrett A. Duncan**, Associate Professor
(Education)
Ph.D., The Claremont Graduate School**Patrick Eisenlohr**, Assistant Professor
(Anthropology)
Ph.D., University of Chicago**Johanna G. Nicholas**, Associate Professor
(Speech and Hearing)
Ph.D., Washington University**Steven E. Petersen**
James S. McDonnell Professor of Cognitive Neuroscience
(Neurology and Neurological Surgery)
Ph.D., California Institute of Technology**Philip A. Robbins**, Assistant Professor
(Philosophy)
Ph.D., University of Chicago**Rebecca Rogers**, Assistant Professor
(Education)
Ph.D., State University of New York–Albany**R. Keith Sawyer**, Associate Professor
(Education)
Ph.D., University of Chicago**Mitchell S. Sommers**, Associate Professor
(Psychology)
Ph.D., University of Michigan**Rebecca A. Treiman**Burke and Elizabeth High Baker Professor of
Child Developmental Psychology
(Psychology)
Ph.D., University of Pennsylvania

Linguistics is an interdisciplinary program that offers introductory and advanced courses in linguistics and also provides access to a variety of perspectives on language by cross-listing courses from other departments and programs. You may choose linguistic studies as a minor, propose a special major in linguistics, or enroll in the Language, Cognition, and Culture track of the major in Philosophy–Neuroscience–Psychology (see page 203).

The program focuses on the core areas of linguistics: how humans use sounds (phonetics and phonology) to convey meaning (semantics) by constructing words, phrases, and sentences (morphology and syntax). You will also have the opportunity to investigate several closely related areas: how languages function in context (pragmatics), how languages relate to culture and society (sociolinguistics), how languages change and form families (historical linguistics), how languages are acquired, and how language is processed in the brain and by computers (psycholinguistics and computational linguistics).

The Minor: You are required to complete 15 units in linguistics, 9 of which must be at the 300 level or above. Three units must be satisfied by Ling 170D or an approved equivalent, and 6 units must be satisfied by two of the following courses: Ling 309, Ling 311, Ling 312, Ling 313, and Ling 320. Units of courses counted toward the linguistics minor cannot also count toward a major.

You can learn more about the Linguistics Program by visiting our Web site at <http://artsci.wustl.edu/~ling/>. You can also contact Brett Kessler (bkessler@wustl.edu) for more information about a minor in linguistics, Brett Hyde (bhyde@artsci.wustl.edu) for more information about a special major in linguistics, or José Bermúdez (bermudez@wustl.edu) for more information about the Language, Cognition, and Culture track of the Philosophy–Neuroscience–Psychology major.

Undergraduate Courses

Ling 101G. Computer Science I*Same as CSE 131.***FA NSM****Ling 170D. Introduction to Linguistics***Same as Anthro 170D.*

Language is one of the fundamental capacities of the human species, and there are many interesting and meaningful ways in which it can be studied. This course explores the core components of linguistic theory: speech sounds (phonetics and phonology), word formation (morphology), sentence structure (syntax), and meaning (semantics). It also provides an overview of interdisciplinary ideas and research on how language is acquired and processed, its relation to the mind-brain and to society, and the question of whether the essential properties of language can be replicated outside the human mind (specifically, in chimpanzees or computer programs). Credit 3 units.

A&S LA

Ling 2101. The Linguistic Legacy of the African Slave Trade in Interdisciplinary Perspective

Same as AFAS 210.
A&S SD SS

Ling 215B. Language, Culture, and Society

Same as Anthro 215B.
A&S SS FA SSP

Ling 225D. Latin and Greek in Current English

Same as Classics 225D.
A&S LA

Ling 234. Introduction to Speech and Hearing Sciences and Disorders

Same as Educ 234.
A&S SS

Ling 301G. Symbolic Logic

Same as Phil 301G.
A&S LA FA SSP

Ling 3061. Literacy Education in the Context of Human Rights and Global Justice

Same as Educ 306.
A&S SS

Ling 306G. Philosophy of Language

Same as Phil 306G.
A&S LA FA SSP

Ling 309. Syntactic Analysis

Same as PNP 309.

The ability to produce and understand an infinite number of sentences is perhaps the most fascinating aspect of the human language faculty. Syntax is the study of how the brain organizes sentences from smaller phrases and words. This course explores syntactic analysis from several perspectives within generative linguistics, focusing primarily on the Government and Binding framework but also introducing Minimalist and Optimality Theoretic approaches. Topics to be discussed include phrase structure, transformations, case theory, thematic roles, and anaphora. Assignments will help students learn to construct and compare analyses of syntactic problems in English and other languages. Prerequisite: Ling 170D or 440 or permission of instructor. Credit 3 units.

A&S LA

Ling 311. Introduction to Semantics

Examination of various approaches to semantics; the field's relationship to theories of grammar, transformational and other. Prerequisite: Ling 170D, or permission of instructor. Credit 3 units.

A&S LA

Ling 313. Phonological Analysis

Same as PNP 313.

There are several important abilities involved in the use of human language, one of these being the ability to organize speech sounds. The system that the brain uses to accomplish this task is the subject matter of phonology. This course will explore phonology from several perspectives within generative linguistics, including both traditional rule-based and current Optimality Theoretic approaches. Topics to be discussed include phonological features, lexical phonology, prosodic morphology, tone, and metrical stress. Assignments will help students learn to analyze phonological problems in a variety of languages and to evaluate the consequences of using different analytic approaches. Prerequisite: Ling 170D or 440 or permission of instructor. Credit 3 units.

A&S LA

Ling 314. Sociolinguistics, Literacies, and Communities

Same as Educ 314.
A&S LA

Ling 317. Introduction to Computational Linguistics

Use of computers to analyze, understand, and generate human language. Emphasis on appreciating practical applications such as text analysis, search and creation of dictionaries and corpora, information retrieval, machine translation, and speech interfaces. Survey of rule-based and statistical techniques. Students will acquire programming skills appropriate for solving small- to medium-scale problems in linguistics and text processing, using a language such as Perl. Students will have regular programming assignments and will complete a semester project. No previous knowledge of programming required. Prerequisites: Ling 170D or permission of instructor. Credit 3 units.

A&S LA

Ling 320. Historical and Comparative Linguistics

Same as PNP 320, Span 3201, E Lit 3581.

Historical linguistics focuses on how languages change over time. Comparative linguistics focuses on their similarities and differences. In this course we will trace some of the differences and changes in sound (phonetics and phonology), word formation (morphology), sentence structure (syntax), and meaning (semantics). Topics include linguistic universals, the structural and genetic classification of languages, the techniques of reconstructing proto-languages, and the causes of language change. Examples from Indo-European languages (for example, Greek, English, and Spanish) and from Native American languages (for example, Navaho, Choctaw, and Lakota) will be emphasized. Prerequisite: Ling 170D or Ling 440 or permission of instructor. Credit 3 units.

A&S LA FA Lit

Ling 3241. Contemporary Contexts of Language, Literature, and Culture in the African Diaspora

Same as AFAS 3241.

Ling 340. Linguistic Pragmatics

Discourse analysis and pragmatics are the subfields of linguistics that investigate language as it is used in real-life contexts. The focus is on the question: what do people do with language and how do they do it? One goal is to demonstrate how the results of such investigations are relevant for a number of concrete problems in human communication. Some of the more specific topics we will explore are: what distinguishes discourse analysis and pragmatics from each other; what is their relation to the other branches of linguistics; how can the two fields contribute to the establishment of a paradigm for interdisciplinary and intercultural studies? Prerequisite: Ling 170D or permission of instructor. Credit 3 units.

A&S LA

Ling 358. Language Acquisition

Same as Psych 358.

A&S SS FA SSP

Ling 396. Linguistics Seminar

Same as PNP 396.

Readings on a selected topic in theoretical linguistics with an emphasis on discussion, presentation, and writing. Prerequisite: varies with topic. Credit 3 units.

A&S TH

Ling 400. Anatomical and Physiological Bases of Speech and Articulation**Ling 401. Set Theory**

Same as Phil 401.
A&S TH FA SSP

Ling 4012. Anatomical and Physiological Bases of Speech and Hearing

Same as PACS 401.

Ling 403. Mathematical Logic I

Same as Phil 403.

A&S TH FA SSP

Ling 404. Mathematical Logic II

Same as Phil 404.

A&S TH FA SSP

Ling 4060. Semantics

Same as CSE 406A, Phil 4060, Anthro 4060, PNP 4060, CS 406.

Semantics is the branch of linguistics that studies how speakers assign meaning to words, sentences, and larger units of discourse. We will combine perspectives from both linguistics and philosophy to explore a variety of topics including polysemy, compositionality, quantification, anaphora, definite descriptions, attitude reports, presupposition, and implicature. Prerequisite: Ling 170D or Phil 301G or permission of instructor. Credit 3 units.

A&S LA

Ling 4065. Advanced Philosophy of Language

Same as Phil 4065.

A&S LA FA SSP

Ling 407. Old English

Same as E Lit 407.

A&S LA FA Lit

Ling 408. Psychology of Language

Same as Psych 433.

A&S SS FA SSP

Ling 4101. Topics Seminar: Law, Language, and Culture

Same as STA 410.

A&S SS FA SSP

Ling 4111. Advanced French Composition and Grammar

Same as French 411.

A&S LA WI

Ling 412. Sociolinguistics: Ethnography of Communications

Same as Anthro 412.

A&S SS FA SSP

Ling 4121. Language and Power

Same as Anthro 4121.

A&S SS FA SSP

Ling 4122. Language and Gender

Same as Anthro 4122.

A&S SD SS FA SSP

Ling 4161. Introduction to Hispanic Linguistics

Same as Span 416.

A&S LA

Ling 4171. Phonology and Second Language Acquisition

Same as Span 417.

A&S LA

Ling 4315. Culture, Language, and the Education of Black Students

Same as Educ 4315.

A&S CD SS FA SSP

Ling 433. Acoustical Phonetics and Speech Perception**Ling 4341. Normal Language Development**

Same as PACS 434.

Ling 435. Language, Its Development, and Impairment**Ling 4484. Language, Thought, and Culture**

Same as Educ 4484.

A&S SS FA SSP

Ling 453. History of the French Language

Same as French 453. Credit 3 units.

A&S LA

Ling 455. Romance Philology*Same as French 456.*

A&S LA

Ling 4651. German Language Seminar*Same as Ger 414.*

A&S LA

Ling 466. Second Language Acquisition*Same as French 466, Span 466, PNP 466, Educ 4661, Ling 466.*

There are many ways in which a second language can be learned: from infancy as the child of bilingual parents, or later through formal instruction, immersion in a new culture, or in a particular work or social situation. This class is an inquiry into the processes by which acquisition occurs. Topics include the nature of language learning within the scope of other types of human learning; the relationship between first and second language acquisition; the role of linguistic, cognitive, and sociocultural factors; insights gained from analyzing learners' errors; key concepts such as interlanguage and communicative competence; bilingualism; the optimal age for second language acquisition; and a critical appraisal of different theories of second language acquisition. Both theoretical and instructional implications of second language acquisition research are considered. This course can be used toward certification in TESOL and is a required course for the Graduate Certificate in Language Instruction. Prerequisite: Ling 170D or equivalent is recommended, especially for undergraduates, but is not required. Credit 3 units.

A&S LA

Ling 467. Grammar and Vocabulary Acquisition*Same as Span 467.*

A&S LA

Ling 469. Reading and Writing in a Second Language*Same as Span 469.*

A&S TH

Ling 470. Language Learning and Instruction*Same as Educ 470.*

A&S LA FA SSP

Ling 472. History of the English Language*Same as E Lit 472.*

A&S LA FA Lit

Ling 478. Topics in Linguistics

Meets with Ling 170D or other designated linguistic courses, but with additional writing and research required for graduate credit and certification. Credit 3 units.

A&S LA

Ling 500. Independent Study

Prerequisites: senior standing and permission of the linguistics director. Credit variable, maximum 6 units.

Literature and History

Steering Committee**Gerald N. Izenberg**, Professor (History)

Ph.D., Harvard University

Joseph Loewenstein, Professor

(English and Interdisciplinary Project in the Humanities)

Ph.D., Yale University

Steven Zwicker

Stanley Elkin Professor in the Humanities (English)

Ph.D., Brown University

Literature and History offers the opportunity to explore an integrated program of literary, political, and historical studies under the auspices of the Interdisciplinary Project in the Humanities (IPH). Students interested in Literature and History can pursue it as a fully developed track within the IPH. (A full description of the requirements for completing the Literature and History program in the IPH may be found in the general listing for the IPH.) This Honors major emphasizes the interconnectedness of these disciplines and draws on the disciplinary methods of literary analysis and historical investigation.

Studying literature and history can bring a greater coherence, substantively and methodologically, to work in the humanities and social sciences. Because the program is small, it affords the opportunity to work closely with the faculty adviser. You also can take advantage of courses from other interdisciplinary programs, such as American Culture Studies and European Studies.

Undergraduate Courses

LH 330. Exile: Jews, Literature, and History*Same as JNE 339 Credit 3 units.*

A&S TH FA Lit SSP

LH 339C. Exile: Jews, Literature, and History*Same as JNE 339C.*

A&S CD TH

LH 385. The Middle Ages: Multiple Approaches to Culture

Credit 3 units.

A&S TH FA SSP

LH 398. The Devil's Party: Blasphemy and Inspiration*Same as E Lit 398.*

A&S TH FA Lit

LH 402. Topics in Latin-American Literature and History

Credit variable, maximum 3 units.

FA Lit

LH 411. Japanese Literature and History: Japanese Drama in the Tokugawa Period

Credit variable, maximum 3 units.

FA Lit

LH 413. Topics in Literature and History: 17th-Century English Literature*Same as E Lit 413.*

A&S TH FA Lit

LH 414. 17th-Century Literature

Credit 3 units.

A&S TH FA Lit

LH 415. Topics in Chinese Literature and History*Same as French 560.*

Credit variable, maximum 3 units.

LH 416. Topics in Chinese Literature and History*Same as Chinese 490.*

A&S TH FA Lit SSP

LH 418. Victorian Women of Letters**LH 419. The Politics of the Body in the Writings of Andrew Marvell***Same as History 4191.*

A&S TH

LH 421. Topics in Jewish History: Spanish/Jewish Symbiosis

Credit variable, maximum 3 units.

FA SSP

LH 422. Topics in Literature and History: 18th-Century English Literature*Same as E Lit 415.*

A&S TH FA Lit

LH 423. Topics in American Literature I**LH 4232. Topics in American Literature: Romanticism, Post-Romanticism, and the Problem of Belief***Same as E Lit 4231.*

A&S TH FA Lit

LH 4244. Topics in World Literature and History

Credit 3 units.

LH 428. Topics in History of Developing Areas II*Same as History 428.*

A&S TH FA SSP

LH 4281. The New Sicilian School*Same as Ital 428.*

A&S TH FA Lit

LH 432. Topics in Literature and History*Same as E Lit 432.*

A&S TH FA Lit

LH 441. Topics in French Literature and History

Credit variable, maximum 3 units.

FA Lit

LH 442. European Intellectual History: 1789–1890*Same as History 442.*

A&S TH FA SSP

LH 444. European Intellectual History, 1930–1980*Same as History 444.*

A&S TH FA SSP

LH 451. Topics in Literature and History

Credit 3 units.

LH 452. Topics in Literature and History*Same as E Lit 4601.*

A&S TH FA Lit

LH 460. Topics in Literature and History*Same as E Lit 416.*

A&S TH FA Lit

LH 463. American Culture: Traditions, Methods, Visions*Same as AMCS 475.*

A&S TH

LH 464. Topics in English and American Literature*Same as E Lit 420.***A&S** TH **FA** Lit**LH 465. Topics in Literature and History***Same as History 4681.***LH 4653. Cultural Patriarchy***Same as E Lit 4491, History 4653.*

Credit 4 units.

A&S TH **FA** SSP**LH 466. Topics in English Literature and History***Same as E Lit 461.***A&S** TH **FA** Lit**LH 4661. Topics in English Literature and History: Writing, Politics, and Society in Revolutionary England***Same as E Lit 4631.***A&S** TH **FA** Lit**LH 467. Seminar: The Renaissance***Same as E Lit 514.***LH 468. Topics in Literature and History:****Milton***Same as E Lit 494.***A&S** TH **FA** Lit**LH 469. Advanced Seminar in Literature and History***Same as E Lit 4642.*

Seminar is an interdisciplinary examination of subject matter that varies by semester. Credit 4 units.

A&S TH **FA** Lit**LH 4693. Topics in European Literature and History**

Topics course that varies from semester to semester. Credit 3 units.

LH 471. Topics in American Literature and History: Slavery and the American Imagination*Same as E Lit 4232.***A&S** TH **FA** Lit**LH 475. Intellectual History of Feminism: 18th- to mid-20th Centuries***Same as WGS 475.***A&S** TH **FA** Lit**LH 481. Seminar in Theory and Methods**

Required of all literature and history majors.

Credit 3 units.

A&S TH**LH 482. Seminar in Theory and Methods***Same as Hum 405.***A&S** TH**LH 483. Selected American Writers I**

Credit 3 units.

A&S TH **FA** Lit**LH 489. Topics in Modern Chinese Literature:****History, Memory, and Identity***Same as Chinese 489.***FA** Lit**A&S** TH**LH 491. Topics in European Literature and History***Same as History 443.***A&S** TH **FA** SSP**LH 492. Topics in European Literature and History**

Credit 3 units.

LH 4928. Advanced Seminar: Reading the Body Politic in Early-Modern England*Same as History 4928.***A&S** TH **FA** SSP**LH 493. Topics in European Literature and History***Same as History 4944.***A&S** TH **FA** SSP**LH 494. Topics in Literature and History: Russian Modernism**

Credit 3 units.

FA Lit**LH 4942. Miracles, Marvels, and Magic***Same as Re St 3393.***A&S** TH **FA** SSP**LH 495. Topics in World Literature and History***Same as E Lit 496.***A&S** TH **FA** Lit**LH 496. Topics in World Literature and History***Same as Med-Ren 495.*

Credit 3 units.

LH 497. Topics in Classical Literature and History

Credit 3 units.

LH 498. Topics in Literature and History*Same as E Lit 491.***A&S** TH **FA** Lit

Mathematics

Chair**David Wright**

Ph.D., Columbia University

Endowed Professor**Guido Weiss**

Elinor Anheuser Professor

Ph.D., University of Chicago

Professors**Albert Baernstein II**

Ph.D., University of Wisconsin

Quo-Shin Chi

Ph.D., Stanford University

Renato Feres

Ph.D., California Institute of Technology

Ronald Freiwald

Ph.D., University of Rochester

Gary R. Jensen

Ph.D., University of California–Berkeley

Steven Krantz

Ph.D., Princeton University

John McCarthy

Ph.D., University of California–Berkeley

Mohan Kumar Neithalath

Ph.D., Bombay University

Rachel Roberts

Ph.D., Cornell University

Richard Rochberg

Ph.D., Harvard University

Stanley Sawyer

Ph.D., California Institute of Technology

Edward L. Spitznagel

Ph.D., University of Chicago

Nik Weaver

Ph.D., University of California–Berkeley

Victor Wickerhauser

Ph.D., Yale University

Edward Wilson

Ph.D., Washington University

Associate Professors**Brian Blank**

Ph.D., Cornell University

Jack Shapiro

Ph.D., City University of New York

John Shareshian

Ph.D., Rutgers University

Cleon R. Yohe

Ph.D., University of Chicago

Assistant Professor**Nan Lin**

Ph.D., University of Illinois

Professors Emeriti**W. M. Boothby**

Ph.D., University of Michigan

Lawrence Conlon

Ph.D., Harvard University

James A. Jenkins

Ph.D., Harvard University

Robert H. McDowell

Ph.D., Purdue University

A. Edward Nussbaum

Ph.D., Columbia University

Henry M. Schaerf

Ph.D., Eidgenoessische Technische Hochschule (Zürich)

In the study of mathematics, you are exploring the “language of science”—not just the traditional engineering and physical sciences, but all of the social, economic, biological, and behavioral sciences. Mathematics is also used in those parts of the humanities that employ analytical modeling techniques or rely heavily on data analysis.

The mathematics program is versatile and broad and provides opportunity to explore the major areas of the discipline. When you major in mathematics, you select a course of study that emphasizes a specific area of your choice. Areas include mathematical theory (preparation for graduate training in mathematics); probability and statistics (preparation for a career as an actuary or statistician); applications of mathematics; mathematics education (preparation for secondary school teaching); or mathematics (economics emphasis).

You may choose to major in mathematics as a primary major or to combine mathematics as a major or minor with a second major from another department.

As a mathematics student, you may apply for independent study under the direction of faculty members. The Undergraduate Math Club, along with the mathematics department, sponsors lectures, refreshments, and films for students. In addition, you are invited to join in weekly coaching sessions for the nationwide Putnam Examination.

Although it is not necessary to declare your major in mathematics until the end of the sophomore year, you are invited to consult with a department adviser early in your undergraduate career.

With a degree in mathematics, you can pursue graduate work in mathematics or other professional degree programs or pursue a career in business (actuarial and information systems/data analysis positions) or teaching. Additional information about the department and its programs is available at www.math.wustl.edu.

Math Requirements: Many departments require students to take part or all of the basic calculus–differential equations sequence, Math 131, 132, 233, and 217. A solid high school mathematics background through precalculus (including trigonometry) is sufficient preparation for Math 131. Previous study of calculus may prepare you to enter Math 132, 233, 217, or 318.

Some departments require Math 320 (or accept it in lieu of their own statistics courses), for which Math 131 is a prerequisite. Math 322 and 420 are available if you are interested in further study of basic statistics. Math 1201 provides an introduction to programming in the powerful C language, which may be useful to you throughout your studies.

The Major: In addition to the requirements of the College of Arts & Sciences, you must fulfill the requirements of one of the major plans listed below. Because different plans have overlapping requirements, you may choose a plan as late as the beginning of your junior year. An earlier decision allows you to develop the most coherent program possible.

Plan A, Traditional: Math 310, 4111, 4121, 429, 430, 320 or 493, and two additional advanced courses (Math 417 and 418 recommended).

Plan B, Probability and Statistics: Math 1201 or CSE 126G, Math 309, 310, 318 (or 308), 493, 494, and two additional advanced probability and statistics courses.

Plan C, Applied: Physics 117A, 118A or CSE 126G, followed by a second computer science course; Math 217, 309, 310, 318 (or 308), 499, 450; two additional advanced math courses (one emphasizing applications).

Plan D, Secondary Education (in conjunction with a major in secondary education): Math 1201 or CSE 126G; Math 302, 309, 310, 318, 320, 331, and one additional advanced math course.

Plan E, Mathematics (Economics Emphasis) Math 309, 310, 320 (or 493), 4111, 4121 and two other upper-level mathematics electives from a specified list, together with Economics 103, 104, 401 (or 402) and 413 (Econometrics).

With prior approval, you may make substitutions in one of the plans. Certain courses, chosen with the approval of your adviser, may satisfy requirements for advanced courses.

With prior approval of your adviser, you may enroll in supervised independent study if you have a coherent plan for work and a faculty member who will supervise your work. Introductory graduate-level courses (Math 5021-5022, 5031-5032, 5041-5042, 5051-5052) are also available to you as an undergraduate if you satisfy the prerequisites.

Senior Honors: You are encouraged to consider working toward Honors. Students seeking Honors must have a minimum overall average of 3.50. In addition, students must complete (with grades of B or better in each):

1. At least one of the three sequences 4111-4121, 429-430, or 493-494, and
2. At least three additional regular mathematics courses (not independent studies) numbered 400 or higher. In the case of probability/statistics track majors, at least two of these courses must be advanced probability/statistics courses, and the ability to use SAS is also strongly recommended. In the case of applied track majors, at least two of these courses must be application-oriented courses taught by the mathematics department or officially cross-listed with mathematics.

Honors candidates must also successfully complete an Honors Project under the guidance of a faculty member and make an oral presentation of the work to a faculty Honors Committee. Your application for Honors

work should be submitted to the department’s undergraduate committee chair no later than the beginning of your senior year.

If you have a plan for an independent study or project to unify the experience of your major (“a capstone project”), you can also arrange such work through the department (independent from work toward honors).

Undergraduate Courses

Math 100. Foundations for Calculus

A limited enrollment class designed specifically for students planning to take calculus but who need additional precalculus preparation. The course aims to build both the technical skills and the conceptual understanding needed to succeed in calculus. Course emphasizes links between the graphical, numeric, and algebraic viewpoints. A variety of approaches are used to present the material (e.g., technology, group work, writing assignments, in-class activities). Prerequisite: 2 years of high-school algebra and geometry (or the equivalent). Credit 3 units.

A&S NS FA NSM

Math 1011. Introduction to Statistics

Basic concepts of statistics. Data collection (sampling and designing experiments), data organization (tables, graphs, frequency distributions, numerical summarization of data), statistical inference (elementary probability and hypothesis testing). Prerequisite: high-school algebra. Credit 3 units.

A&S NS QA FA NSM

Math 109. Mathematics and Music

Same as Music 109M.

An elementary introduction to the connections of mathematics and musical sound. Review of integers, ratios, prime numbers, functions, rationality, exponents, logarithms, trigonometry. Review of scales, clefs, key signatures, intervals, time signatures. Frequency and pitch. The connection between intervals and logarithms. Tuning and temperament, just intonation. Scales and modular arithmetic. The mathematics of harmony; the sound of the low prime numbers and their roles in harmony. Harmonics, partials and overtones. Numerical integration and basic Fourier analysis. The nature of complex tones. Analysis of instrument sounds. Human vowels and formants. Prerequisites: high-school algebra and trigonometry. Credit 3 units.

A&S NS QA FA NSM

Math 1201. Programming in C

An introduction to computing with emphasis on applications in mathematics and the sciences. Introduces the ANSI standard version of the C language for personal computers. Includes some discussion of the C++ superset of C and the concepts of object-oriented programming. No previous knowledge of computing is assumed. Some knowledge of calculus is helpful. Prerequisite: high-school algebra and trigonometry. Credit 3 units.

A&S NS QA FA NSM

Math 126. Introduction to Computer Programming

Same as CSE 126.

Math 127. Calculus I for the Life, Managerial, and Social Sciences

An introduction to calculus of algebraic, logarithmic, and exponential functions. Functions and graphs, the derivative, techniques of differentiation, applications of the derivative to rates of change, max/min problems, and curve sketching. The definite integral, the Fundamental Theorem of Calculus, integration by substitution, applications

of the integral. Intended for students in business, economics, and the social sciences who wish a one- or two-semester introduction to the subject. Students planning to take Math 233 should enroll instead in Math 131 or 132. Prerequisite: high-school precalculus. Credit 3 units.

A&S NS QA FA NSM

Math 128. Calculus II for the Life, Managerial, and Social Sciences

Continuation of Math 127. Additional techniques of integration, introduction to partial derivatives and multiple integrals; topics in differential equations, approximation by polynomials, probability, and calculus of trig functions. Intended for students in business, economics, and social sciences who wish a one- or two-semester introduction to the subject. Students planning to take Math 233 should enroll instead in Math 131 or 132. Prerequisite: Math 127 or the equivalent. Credit 3 units.

A&S NS QA FA NSM

Math 130C. Introduction to Computing

Same as CSE 131.

Math 130S. Calculus I

Special short summer course for incoming students. Derivatives of algebraic, trigonometric, and transcendental functions, techniques of differentiation and applications of the derivative. The definite integral and Fundamental Theorem of Calculus. Areas. Simpler integration techniques. Graphing calculator required. Prerequisite: high-school algebra and precalculus (including trigonometry). Credit 3 units.

A&S NS QA

Math 131. Calculus I

Same as Math 131.

Derivatives of algebraic, trigonometric, and transcendental functions, techniques of differentiation and applications of the derivative. The definite integral and Fundamental Theorem of Calculus. Areas. Simpler integration techniques. Prerequisites: high-school algebra and precalculus, including trigonometry. Credit 3 units.

A&S NS QA FA NSM

Math 132. Calculus II

Continuation of Math 131. A brief review of the definite integral and Fundamental Theorem of Calculus. Techniques of integration, applications of the integral, sequences and series, and some material on differential equations. Prerequisite: Math 131 or a B or better in a one-year high school calculus course, or permission of the department. Credit 3 units.

A&S NS QA FA NSM

Math 200. Independent Study

Credit 3 units.

A&S NS

Math 201. Freshman Seminar: How

Mathematics Thinks: Multivariable Calculus

An introduction to multivariable calculus covering most of the material in Math 233 (Calculus III) at a greater level of rigor. For purposes of major requirements or prerequisites, this course can replace Math 233. Enrollment limited to 15. Open only to freshmen with a score of 5 on the AP Calculus Exam (BC version). Students cannot receive credit for both this course and Math 233 or 2331. Not offered in semesters when 2331 is offered. Credit 4 units.

A&S NS QA

Math 217. Differential Equations

Introduction to ordinary differential equations: first-order equations, linear equations, systems of equations, series solutions, Laplace transform methods. Computer-aided study of numerical solutions and graphics phase planes. Prerequisite: Math 233 (or Math 233 concurrently). Credit 4 units.

A&S NS QA FA NSM

Math 220. Finite Mathematics

Topics selected from number theory, combinatorics, and graph theory. Methods of proof and practical applications: for example, calendars, scheduling, communications, encryption. Prerequisite: high-school algebra. Credit 3 units.

A&S NS QA FA NSM

Math 233. Calculus III

Differential and integral calculus of functions of two and three variables. Vectors, curves, and surfaces in space, partial derivatives, multiple integrals, line integrals, vector calculus through Green's Theorem. Prerequisite: Math 132 or score of 5 on Advanced Placement calculus BC exam, or permission of the department. Credit 4 units.

A&S NS QA FA NSM

Math 2331. Calculus III Enhanced

An enriched treatment of the topics of Math 233, designed for students with a strong background in differential and integral calculus and serious interest in mathematics. Not offered concurrently with Math 201. Students with credit for 2331 cannot also receive credit for 233 or 201. Prerequisite: score of 5 on Advanced Placement calculus BC exam, or permission of instructor. Credit 4 units.

A&S NS QA FA NSM

Math 266. Math for Elementary School

Teachers

A review of the mathematics of grades K-8 at a level beyond its usual presentation in the schools. Applications of all concepts are given in abundance. Prerequisite, two years of high-school mathematics. Credit 3 units.

A&S NS QA FA NSM

Math 302. Elementary Geometry from an Advanced Point of View

A modern, rigorous development of Euclidean geometry and an introduction to non-Euclidean geometry. Prerequisite: Math 310 or permission of instructor. Credit 3 units.

A&S NS FA NSM

Math 308. Mathematics for the Physical Sciences

Continuation of Math 233 that emphasizes topics of interest in the physical sciences. Topics in multivariable and vector calculus including div, grad, curl; line and surface integrals and connections to electromagnetism; Fourier series and integrals; boundary value problems (diffusion and wave equations); if time permits, some topics from calculus of variations. Students may not receive credit for both Math 308 and Math 318. Prerequisite: Math 233 or permission of instructor. Credit 3 units.

A&S NS FA NSM

Math 309. Matrix Algebra

Same as ESE 309.

Theory of matrices and vector spaces from a concrete, computational point of view. Topics: row reduction, rank and dimension, determinants, eigenvalues and eigenvectors, diagonalization of symmetric matrices. Prerequisite: Math 132. Credit 3 units.

A&S NS QA FA NSM

Math 310. Foundations for Higher Mathematics

Same as Math 3101.

Introduction to the rigorous techniques used in more advanced mathematics. Topics include basic logic, set theory, methods of proof, counter-examples, foundations of mathematics. Use of these methods in areas such as construction of number systems, counting methods, combinatorial arguments, and elementary analysis. Prerequisite: Math 233. Credit 3 units.

A&S NS FA NSM

Math 310W. Foundations for Higher Mathematics with Writing

Introduction to the rigorous techniques used in more advanced mathematics. Students attend the same lectures and do all the work associated with Math 310, but will also have an additional meeting each week to deal with writing issues. At least three papers (of length 4-5 pages) will be required, each with at least one revision. Prerequisite: Math 233 or permission of instructor. Credit 4 units.

A&S NS WI

Math 312. Differential Equations and Dynamical Systems

Qualitative theory of ordinary differential equations. Picard's existence and uniqueness theorem, the phase plane, Poincare-Bendixon theory, stationary points, attractors and repellers, graphical methods. Physical applications, including chaos, are indicated. Prerequisite: Math 217. Credit 3 units.

A&S NS FA NSM

Math 318. Introduction to Calculus of Several Variables

Differential and integral calculus of functions of n-variables making some use of matrix algebra, and at a level of rigor intermediate between that of Calculus III and upper-level analysis courses. Students may not receive credit for both Math 308 and 318. Prerequisites: Math 233 and 309. Credit 3 units.

A&S NS FA NSM

Math 320. Elementary Probability and Statistics

Same as ASTAT 513B, ASTAT 330B.

An elementary introduction to probability and statistics. Discrete and continuous random variables, mean and variance, hypothesis testing and confidence limits, nonparametric methods, Student's analysis of variance, regression, and contingency tables. Graphing calculator with statistical distribution functions (such as the TI-83) is required. Prerequisite: Math 131. Credit 3 units.

A&S NS QA FA NSM

Math 322. Biostatistics

Same as Math 322.

A second course in elementary statistics with applications to life sciences and medicine. Review of basic statistics using biological and medical examples. New topics include incidence and prevalence, medical diagnosis, sensitivity and specificity, Bayes' rule, decision making, maximum likelihood, logistic regression, ROC curves and survival analysis. Prerequisite: Math 320. Credit 3 units.

A&S NS FA NSM

Math 331. Algebraic Systems

Same as Math 3311.

Groups, rings, integral domains, fields, and elementary theory of numbers and their relevance to the high-school curriculum. Prerequisite: Math 310 or permission of instructor. Credit 3 units.

A&S NS FA NSM

Math 3351. Elementary Theory of Numbers

Divisibility properties of integers, congruences, quadratic reciprocity, Diophantine equations. Introduction to continued fractions, and a brief discussion of public key cryptography. Prerequisite: Math 310 or permission of instructor. Credit 3 units.

A&S NS FA NSM

Math 370. Introduction to Combinatorics

Basics of enumeration (combinations, permutations and enumeration of functions between finite sets), generating functions; the inclusion-exclusion principle, partition theory and introductory graph theory. As time permits, covers some of the following topics: Ramsey's Theorem, probabilistic methods in combinatorics and algebraic methods

in combinatorics. Prerequisites: Math 131-132, 309 and 310 (or equivalent), or permission of the instructor. Credit 3 units.

A&S NS QA

Math 400. Undergraduate Independent Study
Register for the section corresponding to the supervising instructor. Approval of instructor required. Credit variable, maximum 3 units.

Math 407. An Introduction to Differential Geometry

Properties of curves and surfaces in 3-dimensional Euclidean space will be studied. The course is essentially a modern recount of a seminal paper of Gauss. Prerequisites: Math 233 and Math 309. Credit 3 units.

A&S NS

Math 408. Nonparametric Statistics

Same as Math 408.

Statistical methods that make minimal assumptions about the underlying data distribution. Permutation and other randomization tests. Distribution free confidence intervals and correlation coefficients. Jackknife and bootstrap resampling. Prerequisite: Math 420 or 493. Credit 3 units.

A&S NS FA NSM

Math 410. Introduction to Fourier Series and Integrals

The basic theory of Fourier series and Fourier integrals including their different type of convergence. Applications to certain differential equations. Prerequisites, Math 233 and 309. Background including some of 4111, 4121 and 429 might be helpful but are not required. Credit 3 units.

A&S NS

Math 411. Introduction to Analysis

The real number system and the least upper-bound property; metric spaces (completeness, compactness, and connectedness); continuous functions (in \mathbb{R}^n ; on compact spaces; on connected spaces); $C(X)$ (pointwise and uniform convergence; Weierstrass approximation theorem); differentiation (mean value theorem; Taylor's theorem); the contraction mapping theorem; the inverse and implicit function theorems. Prerequisite: Math 310 or permission of instructor. Credit 3 units.

A&S NS QA

Math 412. Introduction to Lebesgue Integration

Riemann integration; measurable functions; measures; the Lebesgue integral; integrable functions; L^p spaces; modes of convergence; decomposition of measures; product measures; Lebesgue measure. Prerequisite: Math 4111 or permission of the instructor. Credit 3 units.

A&S NS

Math 415. Partial Differential Equations

Same as Math 415.

Introduction to the theory of P.D.E.'s with applications to selected classical problems in physics and engineering. Linear and quasilinear first order equations, derivation of some of the classical PDE's of physics, and standard solution techniques for boundary and initial value problems. Preliminary topics such as orthogonal functions, Fourier series, and variational methods introduced as needed. Prerequisites: Math 217 and 309, or permission of instructor. Credit 3 units.

A&S NS FA NSM

Math 416. Complex Variables

Same as Math 416.

Analytic functions; elementary functions and their properties. Line integrals; the Cauchy integral formula. Power series; residues; poles. Conformal mapping and applications. Prerequisite: Math 318, Math 308, or ESE 317 or permission of instructor. Credit 3 units.

A&S NS FA NSM

Math 417. Introduction to Topology and Modern Analysis I

Same as Math 4171.

An introduction to set theory, metric spaces, and general topology. Connections to tools useful in analysis are made as appropriate. Prerequisite: Math 411. Credit 3 units.

A&S NS FA NSM

Math 418. Introduction to Topology and Modern Analysis II

Continuation of Math 417. May include some algebraic topology (depending on material covered in 417). Prerequisite: Math 417. Credit 3 units.

A&S NS FA NSM

Math 420. Experimental Design

Same as Math 420.

A first course in the design and analysis of experiments, from the point of view of regression. Factorial, randomized block, split-plot, Latin square, and similar design. Prerequisite: Math 320 or equivalent. Credit 3 units.

A&S NS FA NSM

Math 429. Linear Algebra

Introduction to the linear algebra of finite-dimensional vector spaces. Includes systems of equations, matrices, determinants, inner product spaces, spectral theory. Prerequisite: Math 310 or permission of instructor. Credit 3 units.

A&S NS QA FA NSM

Math 430. Modern Algebra

Introduction to groups, rings, and fields. Includes permutation groups, group and ring homomorphisms, field extensions, connections with linear algebra. Prerequisite: Math 429 or equivalent. Credit 3 units.

A&S NS FA NSM

Math 434. Survival Analysis

Same as Math 434.

Life table analysis and testing, mortality and failure rates, Kaplan-Meier or product-limit estimators, hypothesis testing and estimation in the presence of random arrivals and departures, and the Cox proportional hazards model. Used in medical research, industrial planning, and the insurance industry. Prerequisites: Math 320 and 309, or the equivalent. Credit 3 units.

A&S NS FA NSM

Math 436. Algebraic Geometry

Introduction to affine and projective algebraic varieties, the Zariski topology, regular and rational mappings, simple and singular points, divisors and differential forms, genus, Riemann-Roch theorem. Prerequisites: Math 318 and 429, 430, or permission of the instructor. Credit 3 units.

A&S NS FA NSM

Math 4361. Linear Programming and Extensions

Same as Math 4361, Math 436.

Introduction to linear optimization theory from the point of view of linear algebra. Linear and quadratic programming, decision theory, dynamic programming, network analysis. The LINDO computer package introduced and used. Along with a course in numerical analysis, useful in preparing for the third examination of the Society of Actuaries. Prerequisites: Math 233 and 309, or permission of instructor. Credit 3 units.

A&S NS FA NSM

Math 439. Linear Statistical Models

Same as Math 439.

Introduction to statistical methods based in linear algebra. Topics: multivariate normal distribution; quadratic forms; linear models and their classification; general linear hypothesis; regression models, analysis of variance; factorial, block, and variance components models; canonical correlation; factor

analysis. Prerequisites: a course in linear algebra, such as Math 309 or 429, and a course in statistics that includes regression, such as Math 320. Credit 3 units.

A&S NS FA NSM

Math 440C. Advanced Algorithms

Same as CSE 441T.

Math 449. Numerical Applied Mathematics

Computer arithmetic, error propagation, condition number and stability; mathematical modeling, approximation and convergence; roots of functions; calculus of finite differences; implicit and explicit methods for initial and boundary value problems; numerical integration; numerical solution of linear systems, matrix equations, and eigensystems; Fourier transforms; optimization. Various software packages are introduced and used. Prerequisites: Math 1201 or equivalent; 217, and 309. Credit 3 units.

A&S NS

Math 450. Topics in Applied Mathematics

Same as Math 450.

Selected advanced topics in the applications of mathematics. Topic may vary with each offering of the course. Prerequisite: Math 449 or permission of the instructor. Credit 3 units.

A&S NS FA NSM

Math 475. Statistical Computation

Same as Math 475.

Applied statistics using SAS. An introduction to SAS and SAS programming; contingency tables and Mantel-Haenszel tests; general linear models and matrix operations; simple, multilinear, and stepwise regressions; ANOVAs with nested and crossed interactions; ANOVAs and regressions with vector-valued data (MANOVAs). Topics chosen from discriminant analysis, principal components analysis, logistic regression, survival analysis, and generalized linear models. Prerequisite: Math 320 and 493 (or 493 concurrently). Credit 3 units.

A&S NS FA NSM

Math 481. Group Representations

Ideas and techniques in representation theory of finite groups and Lie groups. Credit 3 units.

A&S NS

Math 493. Probability

Same as Math 493, ESE 428.

Mathematical theory and application of probability at the advanced undergraduate level; a calculus based introduction to probability theory. Topics include the computational basics of probability theory, combinatorial methods, conditional probability including Bayes' theorem, random variables and distributions, expectations and moments, the classical distributions, and the central limit theorem. Prerequisite: Math 318 or 308. Credit 3 units.

A&S NS FA NSM

Math 494. Mathematical Statistics

Same as Math 494.

Theory of estimation, minimum variance and unbiased estimators, maximum likelihood theory, Bayesian estimation, prior and posterior distributions, confidence intervals for general estimators, standard estimators and distributions such as the Student-t and F-distribution from a more advanced viewpoint, hypothesis testing, the Neymann-Pearson Lemma (about best possible tests), linear models, and other topics as time permits. Prerequisite: Math 493. Credit 3 units.

A&S NS FA NSM

Math 495. Stochastic Processes

Same as Math 495.

Random walks, Markov chains, Gaussian processes, and empirical processes. Prerequisites: Math 318 and 493, or permission of instructor. Credit 3 units.

A&S NS FA NSM

Math 496. Topics in Statistics

Selected advanced topics in statistics. Credit 3 units.

A&S NS FA NSM

Math 497. Topics in Mathematics

Selected topics in undergraduate mathematics. Credit 1 unit.

A&S NS FA NSM

Math 499. Study for Honors

Prerequisites: senior standing, eligibility for honors in mathematics, including distinguished performance in courses numbered 300 or above in mathematics, and permission of the department. Credit 3 units.

FA NSM

Math 500. Independent Work

Prerequisites: senior standing and permission of the chair of the department. Credit variable, maximum 6 units.

Math 501. Methods of Theoretical Physics I

Same as Physics 501.

Math 502. Methods of Theoretical Physics II

Same as Physics 502.

Medicine and Society

Participating Faculty, 2006–08

Director

Bradley P. Stoner

Associate Professor
(Anthropology)
M.D., Ph.D., Indiana University

Assistant Director

Rebecca J. Lester

Assistant Professor
(Anthropology)
Ph.D., University of California–San Diego

Endowed Professors

Pascal R. Boyer

Henry Luce Professor of Collective and Individual Memory
(Anthropology)
Ph.D., University of Paris–Nanterre

Richard J. Smith

Ralph E. Morrow Distinguished University Professor
(Anthropology)
Ph.D., Yale University

Professors

Kenneth H. Ludmerer

(History)
M.D., Johns Hopkins University

Glenn D. Stone

(Anthropology)
Ph.D., University of Arizona

Associate Professor

L. Lewis Wall

(Anthropology)
M.D., University of Kansas
D.Phil., University of Oxford

Assistant Professors

Geoff Childs

(Anthropology)
Ph.D., Indiana University

Shanti A. Parikh

(African and African American Studies and Anthropology)
Ph.D., Yale University

Walton O. Schalick III

(History)
M.D., Ph.D., Johns Hopkins University

Lecturer

Barbara A Baumgartner

(Women & Gender Studies)
Ph.D. Northwestern University

The Medicine and Society Program is an exciting opportunity for undergraduate students in Arts & Sciences who are interested in exploring the interface between culture, behavior, and health from a social science perspective. The program addresses the important social and cultural foundations of health and illness in human societies, with a specific emphasis on service and research opportuni-

ties in health-related sites in St. Louis. The program is supported by a grant from the Danforth Foundation.

Medicine and Society has its intellectual and programmatic roots in the field of medical anthropology, which is broadly defined as the study of human health and illness across culture, time, and space. Medical anthropologists examine the role of culture and society in shaping illness experiences. The discipline also provides a focus for understanding societal responses to health threats. In this regard, individual health is seen within a broader framework of social networks and the larger public and private efforts to prevent disease and promote health, both domestically and internationally. Some examples of research areas of interest to medical anthropologists include the following:

- Immigrant health and social influences on health-care seeking
- Use of alternative and complementary medicine in modern society
- Organ transplantation and the ethics of directed donation
- The human genome project, privacy, and ethics of genetic testing
- Social and behavioral factors that affect infectious disease transmission, including AIDS

Public health responses to bioterrorism. Additionally, medical anthropologists who work in cross-cultural settings may also focus on such issues as traditional health beliefs (witchcraft, sorcery, shamanism), cultural clashes between traditional medicine and biomedicine, and the political-economic foundations of health disparities in the developing world. These topics all share a focus on the community as the primary area of inquiry and examination.

Students in the Medicine and Society Program, while focused primarily on medical anthropology and community health, have the opportunity to draw widely from the many resources in Arts & Sciences at Washington University. Courses in other social science disciplines, such as history, economics, political science, and psychology, may be relevant and appropriate, depending on particular student interests and needs. Students also enjoy meaningful and active participation in programs at the local St. Louis health departments, community health organizations, and Washington University School of Medicine. The program will particularly appeal to students with a long-term commitment to careers in the health professions and related areas.

The Program: Upon acceptance to Washington University in the spring, students may apply for admission to the Medicine and Society Program. Students are evaluated on the basis of academic credentials, aptitude, and interest in a health-related career, and a personal statement. Students who are accepted into the Medicine and Society Program are enrolled in a year-long Freshman Seminar on culture, health, and society in the Department of Anthropology. This seminar provides the academic foundation for future community health work in St. Louis. Beginning in the sophomore year, students identify and select

a community health site for internship placement. The internship provides students with a location for focusing their interest and involvement in community health, and allows students to participate in the work of the host organization. Appropriate internship sites include the St. Louis city and county health departments, various nongovernmental health aid agencies, sites for delivery of clinical care and research, and health philanthropic foundations. During the junior and senior years, academic and service activities intensify, and many students write a Senior Honors thesis based on original research.

This program provides an excellent foundation for future study in medicine and public health, as well as any of the allied health professions such as nursing or physical and occupational therapy. Students who complete the program will also be highly competitive for admission to other professional schools such as law, business, or social work.

Medieval and Renaissance Studies

Steering Committee

Derek M. Hirst

William Eliot Smith Professor
(History)
Ph.D., Cambridge University

Joseph Loewenstein, Professor
(English)

Ph.D., Yale University

William E. Wallace

Barbara Murphy Bryant Distinguished
Professor of Art History
(Art History and Archaeology)
Ph.D., Columbia University

Gerhild Scholz Williams

Barbara Schaps Thomas and
David M. Thomas Professor
in the Humanities
(German)

Ph.D., University of Washington

Steven Zwicker

Stanley Elkin Professor in the Humanities
(English)
Ph.D., Brown University

Professors

David Lawton

(English)
Ph.D., University of York

Craig Monson

(Music)
Ph.D., University of California–Berkeley

Dolores Pesce

(Music)
Ph.D., University of Maryland

Mark S. Weil

E. Desmond Lee Professor for Collaboration
in the Arts
(Art History and Archaeology)
Ph.D., Columbia University

Colette H. Winn

(Romance Languages)
Ph.D., University of Missouri–Columbia

Associate Professors

Nina Cox Davis

(Romance Languages)
Ph.D., Johns Hopkins University

Robert K. Henke

(Performing Arts)
Ph.D., University of California–Berkeley

Ahmet T. Karamustafa

(History)
Ph.D., McGill University

Fatemeh Keshavarz Karamustafa

(Asian and Near Eastern Languages)
Ph.D., University of London

Eloisa Palafox

(Romance Languages and Literatures)
Ph.D., Michigan State University
Doctorado, El Colegio de Mexico

Mark Pegg

(History)
Ph.D., Princeton University

Michael Sherberg

(Romance Languages and Literatures)
Ph.D., University of California–Los Angeles

Assistant Professors

Lara Bovilsky

(English)
Ph.D., Duke University

Paul Crenshaw

(Art History and Archaeology)
Ph.D., New York University

Christine Johnson

(History)
Ph.D., Johns Hopkins University

William Layher

Ph.D., Harvard University

Walton O. Schalick III

(History)
M.D., Ph.D., Johns Hopkins University

The faculty engaged in work in Medieval and Renaissance Studies supervises a number of interdisciplinary clusters within the Arts & Sciences curriculum. Interested students may pursue a major in Renaissance Studies under the auspices of the Interdisciplinary Project in the Humanities. The major offers you the opportunity to gain a broad understanding of the early modern world, the seedbed of modern Western civilization, through the integrated study of Renaissance literature, history, philosophy, art history, and music. (A full description of the requirements for completing the Renaissance Studies track in the Interdisciplinary Project in the Humanities may be found in the general listing for the IPH.)

Courses in the major are drawn from a wide range of departments. This allows you to develop your own course of study, to select areas of concentration that are of particular interest to you, and to work closely with faculty from different areas. You study the themes and social issues of the period through art, history, literature, and popular culture. Topics examined include the rise of urban life; the flowering of vernacular languages and new literary genres; the growing emphasis on education; the reconceiving of pictorial representation and architectural space; the expression and subversion of power in politics and culture; and the transformation of religious doctrines and institutions.

The Minor in Renaissance Studies: You must complete Med-Ren 110C or Humanities 203C, together with Med-Ren 318C, plus an additional 12 units in the minor, of which at least 3 units must be at the 400 level.

You may initiate your work in Medieval and Renaissance Studies by enrolling in an interdisciplinary FOCUS program linking the history department's course in Western Civilization with a special seminar that examines a special topic and theme. Some Medieval and Renaissance Studies FOCUS programs include a trip to the European sites under investigation in the core seminar.

Undergraduate Courses

Med-Ren 101C. Western Civilization

Credit 3 units.
A&S TH FA SSP

Med-Ren 110C. Western Civilization

Same as History 101C.
A&S TH FA SSP

Med-Ren 111. FOCUS Seminar: History of Western Civilization

Credit 3 units.
A&S TH FA SSP

Med-Ren 2091. Freshman Seminar: The City in Early Modern Europe

Same as History 2091.
A&S SD TH FA SSP

Med-Ren 211C. Chief English Writers I

Same as E Lit 211C.
A&S TH FA Lit

Med-Ren 213C. Introduction to Islamic Civilization

Same as JNE 210C.
A&S CD TH FA SSP

Med-Ren 3011. Music History I

Same as Music 3011.
A&S TH FA AH

Med-Ren 3043. Renaissance Europe

Same as History 3043.
A&S SD TH FA SSP

Med-Ren 310C. The Middle Ages: Multiple Views of Culture

Same as E Lit 281C, German 281C, Music 210C. This interdisciplinary course examines various aspects of medieval culture, particularly its educational and political systems, its literary and artistic traditions, and its religious and philosophical views. Credit 3 units.
A&S TH FA Lit

Med-Ren 311. Topics in English or American Literature

Credit 3 units.
A&S TH FA Lit

Med-Ren 312. The Medieval Romance

Same as E Lit 3121.
A&S TH FA Lit

Med-Ren 3122. Topics in Literature

Same as E Lit 3122.
A&S TH FA Lit

Med-Ren 313. Two Renaissance Cities: Approaches to Early Modern Culture

Same as History 3042.
A&S TH FA SSP

Med-Ren 313C. Islamic History 622–1200

Same as History 313C.
A&S TH FA SSP

Med-Ren 315C. Islamic History, 1200–1800

Same as History 314C.
A&S TH FA SSP

Med-Ren 318C. The Renaissance: Crisis and New Beginnings

Same as Art-Arch 218C, E Lit 330C, Drama 318C, History 218C, Music 318C, French 218C. An introduction to Renaissance culture. We focus on a handful of key events as a way of probing the reorganization of European public culture during the Early Modern period. Works by Petrarch, Valla, Erasmus, Pico della Mirandola, Durer, Michelangelo, Rabelais, Shakespeare, Wyatt, Milton, and others. Themes: the rise of modern historical consciousness, the invention of etiquette, magic and witchcraft, the mechanics of celebrity, new monarchy and new rebelliousness, and grave-robbing. Credit 3 units.
A&S TH

Med-Ren 320C. Masterpieces of Medieval Literature

Same as E Lit 462.
A&S SD TH FA Lit

Med-Ren 321. Early Irish Literature and Mythology

A survey of medieval Irish literature and mythology, with special emphasis on the classical background, epic, poetry, law, pre-Christian mythological tales, and early Christian writings. A study tour to Ireland during spring break is a required part of the course. Open to first-year students. Preference given to current residents of Brookings Residential College. Permission of instructor required. Credit 3 units.
A&S TH FA Lit

Med-Ren 322. The Middle Ages: Multiple Approaches to Culture

Credit 3 units.
A&S TH FA SSP

Med-Ren 323C. Italian Literature

Same as Ital 323C.
A&S TH FA Lit

Med-Ren 325. French Literature I

Credit 3 units.
A&S TH FA Lit

Med-Ren 326. French Literature II

Credit 3 units.
A&S TH FA Lit

Med-Ren 3263. The High Middle Ages: 1000–1500

Same as History 3263.
A&S CD TH FA SSP

Med-Ren 326F. Christian Mystical Texts

Credit 3 units.
A&S TH FA Lit

Med-Ren 327. Medieval Germanic Cultures: The Vikings

“They are the filthiest of God’s creatures.” Thus wrote an Arabic traveler after his encounter with a group of Vikings along the Volga river in 921 AD. Personal hygiene aside, Viking culture—rich in poetry and myth, art and ornamentation—was by no means primitive. Using the Icelandic sagas as a springboard, this course examines the history and legacy of the Vikings and their era (roughly 800–1100 ad). Additional information drawn from eyewitness accounts, historical and legal sources, and Viking artifacts helps us investigate topics such as: Norse exploration to North America, outlawry and the culture of violence, the role of Norse women as guardians of honor, and the use of poetry as a pathway to fame. All readings in English. No medieval experience required. Credit 3 units.

Med-Ren 3321. The Bible in the Jewish Tradition

Same as JNE 327.
A&S TH

Med-Ren 333C. Spanish Literature

Same as Span 333C.
A&S CD TH FA Lit

Med-Ren 334C. History of Jews in Christian Europe to 1789

Same as History 334C.
A&S CD TH FA SSP

Med-Ren 338. Narratives of Discovery

Same as History 359.
A&S CD TH FA SSP

Med-Ren 3402. Money and Morals in the Age of Merchant Capital

Same as History 3402.
A&S TH FA SSP

Med-Ren 340C. The Flowering of Islamic Literature, 500–1200

Same as Comp Lit 355C.
A&S CD TH FA Lit

Med-Ren 3413. Women in Early Modern Europe

Same as History 3413.
A&S SD TH FA SSP

Med-Ren 341C. Islamic Literature in Translation, 1200–1800

Credit 3 units.
A&S CD TH FA Lit

Med-Ren 343C. Europe in the Age of Reformation

Same as History 343C.
A&S CD SD TH FA SSP

Med-Ren 3508. The Crusades: Cross-Cultural Perspectives

Same as History 3508.
A&S TH FA SSP

Med-Ren 3522. In Sykkese and in Helthe: History of Medicine in the Middle Ages

Same as History 3522.
A&S TH FA SSP

Med-Ren 359. 17th Century

Credit 3 units.
A&S TH FA AH

Med-Ren 3591. Dutch 17th Century

Same as Art-Arch 359.
A&S TH FA AH

Med-Ren 360. History of Renaissance Architecture

Same as Art-Arch 360.
A&S TH FA AH

Med-Ren 362. High Renaissance Art

Same as Art-Arch 362.
A&S TH WI FA AH

Med-Ren 3621. Mannerism in Italy

Same as Art-Arch 3620.
A&S TH FA AH

Med-Ren 365. Baroque Art

Same as Art-Arch 365.
A&S TH FA AH

Med-Ren 3652. The Early Medieval World: 300–1000

Same as History 3262.
A&S CD TH FA SSP

Med-Ren 365F. The Bible as Literature

Same as E Lit 365F.
A&S TH FA Lit

Med-Ren 3671. Michelangelo: Painter, Sculptor, Architect

Same as Art-Arch 3671.
A&S TH FA AH

Med-Ren 371. The Age of Chaucer

Same as E Lit 371.
A&S TH FA Lit

Med-Ren 372. Introduction to Renaissance Literature

Same as E Lit 372.
A&S TH FA Lit

Med-Ren 376F. Sufism: God, Friend in Islam

Same as Re St 376F.
A&S TH FA SSP

Med-Ren 3872. The History of Modern Britain

Same as History 3872.
A&S TH FA SSP

Med-Ren 390. Lyrics of Mystical Love, East and West

Same as Comp Lit 390.
A&S CD TH WI FA Lit

Med-Ren 3910. Mapping the Early Modern World: Writing Intensive Seminar*Same as History 39J8.*

A&S TH WI

Med-Ren 395C. Shakespeare*Same as E Lit 395C.*

A&S TH FA Lit

Med-Ren 401. Medieval Latin*Same as Latin 401.*

A&S TH FA Lit

Med-Ren 403. The Printed Book in Europe

Studies in effects of printing on literary, social, political, religious, and economic history in the period leading from Gutenberg through Aldus, Froben, and Estienne, to Ponsoby, Moseley, and Tonson. Credit 3 units.

A&S TH FA SSP

Med-Ren 406. The Spanish Symbiosis: Christians, Moors, and Jews*Same as Span 406.*

A&S CD TH FA Lit SSP

Med-Ren 407. Old English*Same as E Lit 407.*

A&S LA FA Lit

Med-Ren 408. Old English Literature*Same as E Lit 408.*

A&S LA FA Lit

Med-Ren 409. Music of the Medieval Period*Same as Music 411.*

A&S TH FA AH

Med-Ren 410. Medieval English Literature*Same as E Lit 410.*

A&S TH FA Lit

Med-Ren 4100. The Ottoman Empire

Credit 3 units.

A&S TH

Med-Ren 411. Middle English Literature*Same as E Lit 411.*

A&S TH FA Lit

Med-Ren 412. Music of the Renaissance Period*Same as Music 412.*

A&S TH FA AH

Med-Ren 413. 17th-Century English Literature*Same as E Lit 413.*

A&S TH FA Lit

Med-Ren 416. German Language Seminar*Same as Ger 411.*

A&S LA

Med-Ren 417. Poetry of the French Resistance*Same as French 417.*

A&S TH FA Lit

Med-Ren 4191. The Politics of the Body in the Writings of Andrew Marvell*Same as History 4191.*

A&S TH

Med-Ren 425. Seminar in Theater History**Med-Ren 4255. Seminar in Theater History***Same as Comp Lit 425.*

A&S TH FA Lit

Med-Ren 426. Counterpoint I*Same as Music 425.***Med-Ren 431. English Drama, Exclusive of Shakespeare, to 1642***Same as E Lit 431.*

A&S TH FA Lit

Med-Ren 432. Collegium Musicum

Credit 3 units.

A&S TH FA SSP

Med-Ren 434. The City: From Rome to the Renaissance

Credit 3 units.

A&S TH

Med-Ren 448. From Arthur to the Grail*Same as French 448.*

A&S TH FA AH Lit

Med-Ren 449. Introduction to Old French*Same as French 449.*

A&S TH

Med-Ren 451. French Literature of the Middle Ages I*Same as French 451.*

A&S TH FA Lit

Med-Ren 4511. Medieval Spanish Literature

Credit 3 units.

A&S CD TH

Med-Ren 452. French Literature of the Middle Ages II*Same as French 452.*

A&S TH FA Lit

Med-Ren 454. Medieval Spanish Literature*Same as Span 451.*

A&S TH FA Lit

Med-Ren 455. History of the Spanish Language*Same as Span 455.*

A&S LA

Med-Ren 459. Topics in European History*Same as Span 459.*

A&S TH FA Lit

Med-Ren 461. Cervantes: *Don Quixote**Same as Span 461.*

A&S TH FA Lit

Med-Ren 4612. Topics in English Literature*Same as E Lit 461.*

FA Lit A&S TH

Med-Ren 4613. Topics in English Literature I: Studies in Time*Same as E Lit 461.*

A&S TH FA Lit

Med-Ren 462. Comedy in England*Same as E Lit 462.*

A&S SD TH FA Lit

Med-Ren 4621. 16th- and 17th-Century Prose*Same as Span 462.*

A&S TH FA Lit

Med-Ren 463. Spanish Poetry in the Golden Age*Same as Span 463.*

A&S TH FA Lit

Med-Ren 4661. Mannerism*Same as Art-Arch 4661.*

A&S TH FA AH

Med-Ren 4662. Michelangelo the Architect*Same as Art-Arch 4662.*

A&S TH FA AH

Med-Ren 467. Ancient Myths in Renaissance and Baroque Art*Same as Art-Arch 4671.*

A&S TH FA AH

Med-Ren 4691. Topics in Shakespearean Production*Same as Drama 469.*

A&S LA

Med-Ren 472. History of the English Language*Same as E Lit 472.*

A&S LA FA Lit

Med-Ren 473. Machiavelli and Guicciardini*Same as Ital 473.*

A&S TH WI FA SSP

Med-Ren 483. Gender and Genre*Same as French 483.*

A&S SD TH FA Lit

Med-Ren 4831. Boccaccio and the Novella*Same as Ital 483.*

A&S TH WI FA Lit

Med-Ren 485. Ariosto: *Orlando Fierioso**Same as Ital 485.*

A&S TH FA Lit

Med-Ren 4892. Advanced Seminar

Credit 4 units.

Med-Ren 491. Chaucer*Same as E Lit 491.*

A&S TH FA Lit

Med-Ren 4912. Chaucer

Credit 3 units.

A&S TH FA Lit

Med-Ren 493. Spenser*Same as E Lit 493.*

A&S TH FA Lit

Med-Ren 494. Milton*Same as E Lit 494.*

A&S TH FA Lit

Med-Ren 4941. The Inquisition in Europe, Asia, and Latin America: 1200–1700. Advanced Seminar in History*Same as History 4941.*

A&S TH FA SSP

Med-Ren 495. Topics in World Literature and History*Same as LH 496.***Med-Ren 496. Shakespeare***Same as E Lit 496.*

A&S TH FA Lit

Med-Ren 499. Senior Honors Thesis

Investigation of a topic in the culture of the Middle Ages or the Renaissance and preparation of a major essay suitable for the award of Honors upon graduation. Prerequisites: senior standing, 3.5 grade-point average in the major, and permission of the committee. Credit variable, maximum 6 units.

A&S TH

Med-Ren 4998. Heresy and Holiness in the Middle Ages*Same as History 4998.*

A&S TH

Memory in Mind and Culture

Participating Faculty, 2006-2008

Pascal Boyer

Henry Luce Professor of Individual and Collective Memory (Psychology, Anthropology) Ph.D., University of Paris

Carl Craver, Assistant Professor (Philosophy)

Ph.D., University of Pittsburgh

Bret Gustafson, Assistant Professor (Anthropology)

Ph.D., Harvard University

Larry Jacoby, Professor (Psychology)

Ph.D., Southern Illinois University–Carbondale

Jennifer Kapscynski, Assistant Professor (German)

Ph.D., University of California–Berkeley

Hillel Kieval

Gloria M. Goldstein Professor of Jewish History and Thought (History)

Ph.D., Harvard University

Tabea Linhard, Assistant Professor (Romance Languages)

Ph.D., Duke University

Erin McGlothlin, Assistant Professor (German)

Ph.D., University of Virginia

Henry Roediger, III

James S. McDonnell Distinguished University Professor (Psychology)

Ph.D., Yale University

Lori Watt, Assistant Professor (History)

Ph.D., Columbia University

James V. Wertsch

Marshall S. Snow Professor in Arts & Sciences

(Anthropology, International and Area Studies, Education)

Ph.D., University of Chicago

This two-year program introduces students to the domain of memory broadly construed, from its roots in brain function to its effects on culture and its role in history. The aim of this series of courses and individual projects is to give students the opportunity to explore the answers to such questions as: Is memory accurate? What makes some memories vivid? Are we aware of all our memories? Why are people in most nations so emotionally attached to their history? How can people survive trauma and atrocities? Is it possible to create false memories? Is eye-witness testimony reliable? What brain processes support memory? How is memory impaired by aging? Are our memory systems the same as other animals'? These issues are approached in different ways and for different reasons by disciplines such as history, psy-

chology, anthropology, and neuroscience. We designed special courses to give the students fundamental notions of memory that span these different disciplines. The freshman year comprises two courses, and the sophomore year includes one course and one individual research project in collaboration with faculty. Participating faculty include psychologists, historians, neuroscientists, philosophers, anthropologists, and literary critics.

The freshman year comprises three courses, Introduction to the Study of Memory (3 units, fall semester), Introduction to Psychology, and Seminar, Introduction to Psychology (3 and 1 units respectively, spring semester). The sophomore year comprises one course, Methods in the Study of Memory (3 units, fall), and Independent Study (spring, 3 units), a project undertaken under supervision of one of the associated faculty.

Undergraduate Courses

Psych 221. Introduction to Memory Studies

This course focuses on memory not only as an individual phenomenon but also as the basis for the transmission of culture and the construction of collective identity. We survey such topics as experimental methods and findings in the study of individual memory; questions of accuracy and vividness of memory and witness reports; repressed memories; transmission of cultural norms and identity through narratives; shared historical memories; individual trauma and historical upheaval; revision of the past and political usage of collective memory. Credit 3 units.

A&S SS

Psych 100B. Introduction to Psychology

Same as CFH 100B, Psych 100B.

A survey and analysis of concepts, theory, and research covering the areas of learning, memory, social, abnormal, clinical, physiological, and sensory psychology. This is a general survey course designed to introduce students to the diversity of areas, approaches, and theories that compose the study of mind and behavior. Psych 100B is required of all majors and is prerequisite to all upper-level courses in Psychology. Credit 3 units.

A&S SS FA SSP

Psych 102. Seminar: Introduction to Psychology

This seminar enables students enrolled in Introduction to Psychology (Psych 100B) to explore in greater depth several of the ideas and concepts in contemporary psychology. Concurrent enrollment in Psych 100B required. Credit 1 unit.

A&S SS FA SSP

Psych 222. Methods in the Study of Memory

This course is organized around a series of guest lectures (mostly from local faculty) introducing the practical aspects of memory seen from the perspectives of different disciplines. The students are exposed to one or two lectures from various specialists, e.g. a historian describing how a particular event is reconstructed from sources, a neuroscientist explaining the details of one experimental finding, an anthropologist commenting on the connections between historical past and individual identity in a particular place, a cognitive psychologist showing how a laboratory result tells us about memory function, etc. Prerequisite: Psych 221.

Psych 500. Independent Work

Prerequisites: Psych 100B and written permission of a supervising faculty member and the chair of the department. Credit variable, maximum 3 units.

Mind, Brain, and Behavior

Participating Faculty, 2006-08

David A. Balota, Professor (Psychology)

Ph.D., University of South Carolina

José L. Bermúdez, Professor (Philosophy and Philosophy-Neuroscience-Psychology)

Ph.D., University of Cambridge

Pascal Boyer

Henry Luce Professor of Collective and Individual Memory

(Anthropology and Psychology)

Ph.D., University of Paris–Nanterre

Carl Craver, Assistant Professor

(Philosophy and Philosophy-Neuroscience-Psychology)

Ph.D., University of Pittsburgh

John Doris, Associate Professor

(Philosophy and Philosophy-Neuroscience-Psychology)

Ph.D., The University of Michigan,

Ann Arbor

Janet M. Duchek, Associate Professor

(Psychology)

Ph.D., University of South Carolina

Steven E. Petersen

James S. McDonnell Professor

of Cognitive Neuroscience

(Neurology and Neurological Surgery)

Ph.D., California Institute of Technology

Philip Robbins, Assistant Professor

(Philosophy and Philosophy-Neuroscience-Psychology)

Ph.D., University of Chicago

Mark Rollins, Associate Professor

(Philosophy and Philosophy-Neuroscience-Psychology)

Ph.D., Columbia University

How do we think? What is human consciousness? What is the relationship between the mind and the brain? During the past few decades, an explosive growth of knowledge in the cognitive sciences has begun to yield answers to fundamental mysteries about the nature of human thought. Students in this two-year program investigate new theories and problems emerging from this interdisciplinary area of study.

The Mind, Brain, and Behavior (MBB) program, which is open to students entering any of the University's undergraduate schools, is a two-year program that engages students with the research culture of the University. The program builds upon areas of research strength and increasing faculty collaboration within the University. It brings together faculty from several departments and students who share an interest in an area of study to create a lively intellectual and social community, to foster a culture of inquiry, and to enable students, early in their undergraduate career, to participate in research.

During the first year, freshmen take two core courses that provide an introduction to the interdisciplinary study of the mind-brain (MBB 120 and MBB 122—see below). These courses are taught collaboratively by faculty members from different disciplines. In the sophomore year students are able to undertake research under the supervision of one or more of the participating faculty members (MBB 300). Sophomores may choose among several research options, each combining independent work with opportunities to work collaboratively.

Participation in Mind, Brain, and Behavior is fully compatible with all majors and preprofessional programs. Entering students from all schools are welcome to apply for admission. Enrollment in Mind, Brain, and Behavior is limited to 45 students each year.

Undergraduate Courses

MBB 120A. Introduction to Study of the Mind-Brain: Psychological, Biological, and Philosophical Perspectives

A consideration of three primary areas of research in cognitive science: attention, memory, and language. These topics are used to illustrate the techniques by which mental abilities are investigated and explained in psychology and neuroscience: the focus, in particular, is on the use of reaction time studies, brain imaging, and cell recordings to isolate the basic components that make up complex functions. In addition to the central concepts and theories in each area, the course will address philosophical implications of this research concerning how the mind and brain are related, how the mind-brain encodes or represents information, and the nature of consciousness. And there will be an emphasis on applying these findings to important problems, such as Alzheimer's disease and deficits due to brain damage. The class is taught by three members of the faculty from different disciplines and combines a whole-group lecture with small discussion classes. The goal is to give students a good understanding of the interdisciplinary nature of cognitive science and to help them develop the ability to think and write critically about scientific research into the mind-brain. Prerequisite: admission to the Mind, Brain, and Behavior program. Credit 3 units.

A&S NS

MBB 122. Introduction to the Study of the Mind Brain II

Same as PNP 122.

In this course, participants in the Mind, Brain and Behavior Program (formerly known as Hewlett Mind-Brain program) will continue their exploration of cognitive science. We will explore different frameworks for thinking about how the different branches of cognitive science relate to each other. The course will contain an introduction to relevant topics in the philosophy of science and the philosophy of mind. Prerequisite: MBB/PNP 120. Credit 3 units.

A&S SS

MBB 300. Research in Mind, Brain, and Behavior

Same as PNP 3001.

An introduction to research for students in the Mind, Brain, and Behavior program (formerly known as Hewlett Program). Students work under the supervision of a mentor. Prerequisite: admission to the Mind, Brain, and Behavior program, completion of MBB/PNP 122, and permission of the mentor. Credit variable, maximum 3 units.

A&S NS

Music

Chair

Dolores Pesce
Ph.D., University of Maryland

Endowed Professor

Hugh Macdonald
Avis Blewett Professor of Music
Ph.D., Cambridge University

Professors

Seth Carlin
M.S., Juilliard School of Music

Jeffrey Kurtzman
Ph.D., University of Illinois

Craig Monson
Ph.D., University of California–Berkeley

Associate Professor

Robert Snarrenberg
Ph.D., University of Michigan

Visiting Associate Professor

Darrell Berg
Ph.D., State University of New York–Buffalo

Assistant Professors

Patrick Burke
Ph.D., University of Wisconsin

Martin Kennedy
D.M.A., Juilliard School of Music

Visiting Distinguished Artist

Ustad Imrat Khan

Senior Lecturers

Christine Armistead
M.M., Washington University

Kathleen Bolduan
Ph.D., Washington University

Lecturers

William Lenihan
B.Mus., University of Missouri–St. Louis

Dan Presgrave
M.M., Washington University

Opera Director

Julia Stewart
M.A., Mozarteum, Salzburg

Director of Vocal Activities

John Stewart
M.A., Brown University

Professors Emeriti

Harold Blumenfeld
M.M., Yale University

Roland Jordan
Ph.D., Washington University

John Perkins
M.F.A., Brandeis University

William Schatzkamer
Diploma, Juilliard School of Music

Robert Wykes

D.M.A., University of Illinois

The Department of Music offers a music program of exceptional quality and diversity. In this varied course of study, where music is approached as a liberal and fine art, rather than as an isolated, separate subject, you may pursue practical and creative music making or study musical traditions and individual works. Music courses are open to all students in the University.

We offer you the opportunity to develop performance skills in voice or instruments through private instruction or through participation in small or large ensembles. Private music lessons with our prominent faculty, including members of the Saint Louis Symphony Orchestra, are available in voice, piano, organ, harpsichord, guitar, sitar, and all orchestral and jazz instruments.

You may study contemporary composition with faculty composers individually or in small groups. You explore the critical issues of tradition, individual composers, compositional craft, and aesthetic interpretation through a wide range of courses from introductory classes to highly specialized seminars. Instruction is available in jazz and ragtime, popular music, world musics, the history and literature of Western music, ethnomusicology, music theory and analysis, musical composition, and electronic music. All performance, creative, and academic endeavors in music are supported by a thorough grounding in musicianship (ear training and keyboard skills).

Music majors may take advantage of study abroad programs in music in England, France, Israel, and Spain. Summer research projects under faculty direction are also available.

Several options are available for students interested in music: the Bachelor of Arts degree with a major in music, the Bachelor of Music degree, a minor in music, and a minor in jazz studies. You may take the A.B. degree in combination with a major in another field or as your primary major in a broad liberal arts education. If you are considering graduate study in music history, music theory, composition, or performance, the Bachelor of Music degree is an excellent option. Majoring in music can prepare you well for graduate work and for a variety of musical careers and other professions. Details of major course requirements are available through the Department of Music.

Becoming a Music Major: If you plan to declare a major in music, you should consult with the department as early as possible. You should apply to the department in the spring of your sophomore year. Acceptance depends on music courses completed up to the time of application, grades earned in music courses, and your potential for advanced study. As a first-year student considering music, begin the appropriate course sequences in music theory, applied music, music history and literature, and basic musicianship.

The Bachelor of Arts in Music Major: You are required to complete a minimum of 18

units in advanced courses: Music 3011, 3012, and 3013; an additional 3 units of music history; 3 units of electives; and a senior project. Other requirements include 12 units of music theory (Music 103E-104E, 221-222), 2 units each of musicianship (Music 1231-1241) and keyboard skills (Music 1232-1242), and 11 units of electives (courses, applied music, or ensembles), for a total of 45 units.

The Bachelor of Music Major: Declaring this major must be approved by the department before the end of your sophomore year. You are required to complete a minimum of 37 to 46 units in advanced courses, depending on your area of concentration. You may earn the B.Mus. degree with concentration in performance, composition, music theory, or music history and literature, or you may pursue a general program combining two or more areas.

Each concentration requires a major senior project, such as a thesis, recital, lecture-demonstration, or composition portfolio. You must also pass a keyboard proficiency examination.

Core courses for the B.Mus. consist of 29 units of courses: 12 units of music theory (Music 103E-104E, 221-222), 9 units of music history (Music 3011-3012-3013), 4 units each of musicianship (Music 1231-1241, 2231-2241) and keyboard skills (Music 1232-1242, 2232-2242). In addition, students must register for applied music lessons and at least one ensemble every semester once the major has been declared. The additional requirements for each concentration are specified in the department handbook.

The Minor in Music: You must complete a minimum of 18 units, which include 6 units of music theory (Music 103E-104E) and 3 of music history (selected from Music 3011, 3012, and 3013). Of the remaining 9 units, 6 must be at the 300 or 400 level. Students whose interests are not served by these requirements may apply to the department chair with an alternative proposal.

The Minor in Jazz Studies: You must complete a minimum of 20 units, which include 3 units of jazz history (Music 105), 6 units of music theory (Music 1091-1092), 3 units of jazz improvisation (Music 3091), 3 units of Jazz in American Culture (Music 3023P), and two semesters of participation in a jazz ensemble or combo (2 units). The remaining 3 units are to be selected from a list of advanced music courses.

Ensembles: The department sponsors numerous performing ensembles, which draw members from the University and the surrounding community. You must audition for admission to the ensembles. All ensembles are available for graded credit, for credit/no credit, or off roster. Ensembles give one or more public performances each semester. If you are enrolled for credit in one of the department's ensembles, you may be entitled to a scholarship that covers a portion of the fee for lessons.

Vocal Ensembles: Chamber Choir, Opera Production.

Instrumental Ensembles: Flute Choir, Jazz Band, small chamber ensembles, Sym-

phony Orchestra, Chamber Winds, jazz combos.

Applied Music: You may take voice, piano, organ, harpsichord, guitar, lute, sitar, and all orchestral instruments in the appropriate sequences. You must take at least two terms of applied music for the units to count toward graduation. A separate fee is charged for private instruction. As a music major or minor, you will receive an applied music scholarship to cover all or a portion of the fee, respectively. If you enroll for credit in one of the department's ensembles, you are entitled to a scholarship for a portion of the fee for lessons each semester you are enrolled. In addition, the department has a limited number of partial scholarships based on need and merit.

Senior Honors: You are encouraged to work toward Honors. To qualify, you must have an outstanding academic record and satisfactorily complete a Senior Honors project (in Music 499) and an oral examination with a faculty committee. Your project proposal is due at the end of your junior year.

Ensemble Performance

Music 133-134, 333-334, 4533-4534. Symphony Orchestra

A select ensemble of about 75 players that performs a repertoire from the Baroque to the modern periods in four public concerts a year. May be repeated for credit. Prerequisite: admission by audition. Three rehearsal hours a week. Credit 1 unit a semester.

A&S LA

Music 137-138, 337-338, 4537-4538. Small Chamber Ensembles

Students interested in performance of chamber music are organized into various ensembles for weekly coaching sessions. May be repeated for credit. Prerequisite: permission of the department. Special fee applicable. One class hour a week. Credit 1 unit a semester.

A&S LA

Music 137I-138I; 337I-338I. Woodwind and Brass Choir

A group of select woodwind and brass players who form brass and woodwind choirs and smaller ensembles such as quintets and quartets. The weekly rehearsals are coached. The ensembles perform on student recitals and at various campus functions. Credit 1 unit.

A&S LA

Music 1372-1382, 3372-3382. Flute Choir

Weekly rehearsals of flute ensemble literature of many styles, Bach to pop. Developing skills of tone production, technique, intonation, sight reading, and musicianship. One performance per semester required. Prerequisite: admission by audition. Special fee applicable. Two class hours a week. Credit 1 unit a semester.

A&S LA

Music 1376-1386, 3376-3386. Jazz Combo

Students are placed in small combos for regular, weekly coaching. May be repeated for credit. Prerequisite: permission of the department. Special fee applicable. Credit 1 unit a semester.

A&S LA

Music 233-234, 3331-3341. Jazz Band

Study of the literature of big band jazz. Concerts presented each semester. May be repeated for credit. Prerequisite: admission by audition. Two and one-half rehearsal hours a week. Credit 1 unit a semester.

A&S LA

Music 237-238, 435-436. Concert Choir

A study of the repertory of the vocal ensemble from the Renaissance to the 20th century, with performance in public concerts. May be repeated for credit. Prerequisite: audition and consent of instructor. Four class hours per week. Credit 2 units a semester.

A&S LA

Applied Music

Weekly private lessons are available for either 1.5 units of credit (half-hour lesson) or 3 units of credit (hour lesson). Students in voice, piano, and guitar are required to attend a regularly scheduled master class in addition to private lessons. Interested students should inquire at the department for further details prior to registration. Non-music majors may register credit/no credit. Credit toward graduation is contingent upon the completion of at least two semesters of study. Students must pass a jury to advance from one level to the next. See Course Listings for details.

Music 1511. Introductory Guitar

Music 159, 160. Introductory Piano Class

Music 1711. Introductory Voice

Music 161, 162; 261, 262; 361, 362; 461, 462. Piano

Music 1612, 1622; 2612, 2622; 3612, 3622; 4612, 4622. Jazz Piano

Music 163, 164; 263,264; 363, 364; 463, 464. Harpsichord

Music 165, 166; 265, 266; 365, 366; 465, 466. Organ

Music 167, 168; 267, 268; 367, 368; 467, 468. Woodwinds

Music 167J, 168J; 367J, 368J. Jazz Woodwinds

Music 169, 170; 269, 270; 369, 370; 469, 470. Brass

Music 169J, 170J; 369J, 370J. Jazz Brass

Music 171, 172; 271, 272; 371, 372; 471, 472. Percussion

Music 171J, 172J; 371J, 372J. Jazz Percussion

Music 173, 174; 273, 274; 373, 374; 473, 474. Strings

Music 173J, 174J; 373J, 374J. Jazz Strings

Music 1731, 1741; 2731, 2741; 3731, 3741; 4731, 4741. Lute

Music 175, 176; 275, 276; 375, 376; 475, 476. Guitar

Music 1751, 1761. Sitar

Music 1753, 1763. Indian Music for Western Musical Instruments

Music 1754, 1764; 2754, 2764; 3754, 3764; 4754, 4764. Jazz Guitar

Music 1755, 1765. Banjo and Mandolin

Music 177, 178; 277, 278; 377, 378; 477, 478. Voice

Music 3613, 3623; 4613, 4623. Fortepiano

Undergraduate Courses

Music 101E, 102E. Introduction to Music I, II Surveys of "art" music in Western culture from the Middle Ages to the mid-18th century and from the middle of the 18th century to the present. Emphasis in the first term is on sacred and secular music of the church, court, and middle-class society in its historical and cultural context, and in the sec-

ond semester emphasis is on music by composers from Haydn and Mozart to George Crumb and John Cage. Regular listening and writing assignments are designed to develop the capacity to hear perceptively and write critically about the music studied. No prior knowledge of musical notation required. This course is not recommended for music minors or majors. For a one-semester course covering Western classical and popular music and music from other cultures, see 114E, Exploring Music. Credit 3 units.

A&S LA

Music 1021. Musics of the World

Same as IS 1021, AFAS 1277.

This course provides an introduction to the field of ethnomusicology as well as a survey of selected musics from around the world. We investigate not only musical sound itself but how music interacts with other cultural domains, such as religion/cosmology, politics, economics, and social structure. The course uses case studies from regions around the world (such as Indonesia, India, the Middle East, Sub-Saharan Africa, and Latin America) to illustrate the conceptual problems and methodologies raised by the cross-cultural study of music, as well as acquaint you with the rich variety of music around the globe. Credit 3 units.

A&S CD TH

Music 1022. Popular Music in American Culture

Same as AFAS 127, AFAS 127, AMCS 127.

Developments in American and African-American popular music since WWII, with special emphasis on the role of popular music in social and political contexts. Among the genres studied are rhythm-and-blues, rock-and-roll, country, rock, fusion, soul, funk, heavy metal, alternative, and rap. Credit 3 units.

A&S LA SD

Music 103E. Music Theory I: Introduction to Music Theory

Vocabularies and skills basic to music theory introduced through concentrated work in notation, the development of specific compositional skills, and musical analysis. Concepts of musical structure and the relationship between music and other creative fields explored through the study of music from three periods of the Western tradition: medieval liturgical chant, music of the Classical period, and music of the early 20th century. Ability to read musical notation required. Keyboard skills desirable. Music 103E is the entry-level course for all music majors and minors. Credit 3 units.

A&S LA

Music 104E. Music Theory II

A systematic introduction to the basic principles of tonality as manifested in western European music of the 18th and early 19th centuries. Topics include, pitch, time, line and linear elaboration, counterpoint, harmony, phrase, form, and chromaticism. The principles are explored through both musical composition and interpretation of musical artworks. Prerequisite: Music 103E. Credit 3 units.

A&S LA

Music 105. History of Jazz

Same as AFAS 1055, AMCS 105.

History of jazz to the present, including its African elements. Credit 3 units.

A&S LA

Music 109. Ragtime

Same as AFAS 1096, AMCS 109.

A history of ragtime music: survey of composers and performers. Emphasis on St. Louis and the music of Scott Joplin. Credit 2 units.

A&S LA

Music 1091. Jazz Theory I

Jazz Theory I introduces the jazz music language as a preparation for the study of improvisation. The course study consists of basic music theory including music-reading skills and notation, scales, intervals, and triads. An introduction to extended tertian chords as derived from the 21 modes of the major, melodic, and harmonic minor scales forms the basis of the jazz harmonic language. The study of chord progression and chord substitution, song form, and the blues prepares the student for a detailed study of the modern jazz language. Credit 3 units.

Music 1092. Jazz Theory II

Jazz Theory II outlines the harmonic, rhythmic, and improvisational practices from the Bebop period of the late 1940s to the jazz music of the present day. Discussions include intermediate to advanced chord substitution, quartal and bitonal harmony, modal improvisation, pentatonic scales, and polyrhythmic drumming, concentrating on the work the major improvisers of the 1950s through 1970s. Prerequisite: Music 1091. Credit 3 units.

Music 109M. Mathematics and Music

Same as Math 109.

Music 113. Fundamentals of Music

This course provides a broad overview of music fundamentals designed to enhance the student's experience of music as well as provide a foundation for further study in music theory. Students become acquainted with the basic vocabulary and building blocks of music: intervals, rhythms, scales, triads, chords and harmony. Credit 2 units.

Music 114E. Exploring Music

A wide-ranging introduction to music in its many forms. Western classical and popular music studied along with music from other cultures to highlight the varied conceptions, functions, and practices of music in different times and places. Discussion of specific pieces facilitates growth in basic musical skills and provides insights into music's multifaceted historical/cultural resonances. No previous musical background required. Includes regular reading and listening assignments. Credit 3 units.

A&S LA

Music 115. Reading Music

Elements of music notation for those with little or no music reading skill. Designed to develop a basic acquaintance with the principles of notation for students enrolled in introductory courses, applied music, and ensembles as well as those with a general interest in learning to read music. Credit 1 unit.

A&S LA

Music 1161. Freshman Seminar: Writing About Music

This course explores the various ways in which writers from the 18th century to the present discuss music. Issues include respect for a tried and true musical "canon," music as an imitative versus absolute art form, and a focus on performing virtuosity/spectacle versus musical content. In addition to reading what previous authors have written, students write on a regular basis about examples from classical, popular, and non-Western music and critique each others' work. Ability to read music is not required. Credit 3 units.

Music 1231, 1241. Musicianship I, II

Basic ear training, sight singing, and dictation skills. Prerequisite: permission of instructor for nonmajors. Three and one-half hours a week. Credit 1 unit a semester.

A&S LA

Music 1232, 1242. Keyboard Skills I, II

An introduction to basic techniques of keyboard harmony using intervals, scales, and root position chords. Transposition and sight-reading skills de-

veloped. Prerequisite: permission of instructor for nonmajors. One and one-half class hours a week. Credit 1 unit a semester.

A&S LA

Music 1271. Introduction to Indian Music

The origins, structure, history, and music of the sitar. Practical aspects of sitar playing, such as maintenance of the instrument, scales and tuning, techniques of performance, theory of ragas, raginis, thals and the structure of melody are covered, as well as comparisons of prominent musicians and northern and southern Indian classical music. Credit 3 units.

A&S LA

Music 128. Selected Area for Special Study

In-depth study in areas of special interest. Credits 3 units.

A&S LA

Music 129, 130. Composition Workshop

Introduction to certain compositional techniques of the 20th century in a workshop combining writing and performance. Prerequisite: permission of instructor. Two and one-half class hours a week. Credit 1 unit a semester.

A&S LA

Music 221. Music Theory III

Concentrated study of the principles of tonal counterpoint and their application to the interpretation of Bach keyboard suites. Class work includes both writing and analysis. Prerequisite: Music 104E. Three class hours a week. Credit 3 units.

A&S LA

Music 2210. Topics in Musical Theater

Same as Drama 221.

A&S LA

Music 2211, 2212. Opera Projects

Same as Art 2212.

Students may contract with a faculty supervisor for credit for work on opera productions or research. Contracts must be signed by the student and the faculty supervisor before the work commences. Prerequisite: permission of the instructor. Credit variable, maximum 2 units a semester.

A&S LA

Music 222. Music Theory IV

Continuation of Music 221 with study of 18th- and 19th-century harmonic, textural, and structural procedures (Bach through Brahms). Prerequisite: Music 221. Credit 3 units.

A&S LA

Music 2231, 2241. Musicianship III, IV

Intermediate-level ear training, sight singing, and dictation skills. Prerequisites: Music 1241 and permission of instructor for nonmajors. Three and one-half class hours a week. Credit 1 unit a semester.

A&S LA

Music 2232, 2242. Keyboard Skills III, IV

Intermediate skills in score reading as well as the introduction of inversions, figured bass, and improvising melodies. Prerequisites: Music 1242 and permission of instructor for nonmajors. One and one-half class hours a week. Credit 1 unit a semester.

A&S LA

Music 227, 228. Selected Area for Special Study

In-depth study in areas of special interest. Prerequisite: permission of instructor. Credit 3 units a semester.

A&S LA

Music 229, 230. Composition I, II

Beginning work in free composition for undergraduates. Conducted as independent study. May

be repeated for credit. Prerequisite: permission of instructor. Credit variable, maximum 3 units a semester.

A&S LA

Music 295, 296. Independent Study

Supervised independent study in areas in which there are no current course offerings. Student must submit to the department chair an outline of the work to be covered, the number of credit hours requested for the work, and the name of the instructor who will be asked to supervise the work. Class hours variable, depending on credit. Credit variable, maximum 3 units.

Music 298. Directed Internship

Students receive credit for a faculty-directed and approved internship, usually with a music professional or musical organization. The primary objective of the internship is to obtain professional experience outside the classroom. Students obtain a Learning Agreement from the Career Center and have it signed by the Career Center, the faculty sponsor, and the site supervisor, if appropriate. A final written project is to be agreed upon before work begins and is evaluated by the faculty sponsor at the end of the internship. Students may not receive credit for work done for pay but are encouraged to obtain written evaluations of such work for the student's academic adviser and career placement file. Credit should correspond to actual time spent in work activities; e.g., 8-10 hours per week for 13 or 14 weeks to receive 3 units of credit; 1 or 2 credits for fewer hours. Credit variable, maximum 3 units.

Music 299. Performance Project

Students may contract with a faculty supervisor for credit for work on musical performance projects or research on musical performance. Contracts must be signed by the student, the faculty supervisor, and the department chair before the student's work on the project commences. Credit variable, maximum 3 units.

A&S LA

Music 3011. Music History I

Same as Med-Ren 3011.

A study of music history and literature from the Middle Ages to 1650. Composers treated include Machaut, Dufay, Josquin, Palestrina, Byrd, and Monteverdi. Prerequisite: Music 103E. Credit 3 units.

A&S TH

Music 3012. Music History II

A study of music history and literature from 1650 to 1850. Composers treated include Corelli, Handel, Vivaldi, J.S. Bach and his sons, Mozart, Haydn, Beethoven and Schumann, and his contemporaries. Prerequisite: Music 3011 or 104E. Credit 3 units.

A&S TH WI

Music 3013. Music History III

A study of music history and literature from 1850 to the present. Composers treated include Brahms, Liszt, Wagner, Verdi, Mahler, Debussy, Stravinsky, Schoenberg, Babbitt, Boulez, Stockhausen, Cage, Glass, and Reich. Prerequisite: Music 3012 or 104E. Credit 3 units.

A&S TH WI

Music 3021. Music of the African Diaspora

Same as IS 305, AFAS 3031.

This course explores musical cross-fertilization between the African continent and South America, the Caribbean, and Europe. Beginning with traditional musics from selected regions of the African continent, the course examines the cultural and musical implications of transnational musical flows on peoples of the African diaspora and their multicultural audiences. Credit 3 units.

A&S CD TH

Music 3022. Native American Musical Traditions of the Western United States

Same as AMCS 3022.

Exploration of music and its historical and contemporary contexts among Native American cultures of the southwest and the northern plains, chiefly Navajo and Lakota, but with some considerations of Pueblo, Shoshone, and other nations. Examinations of inter-tribal pow-wow movements, crossover musics, European appropriation and re-fashioning of Native American culture in Hollywood and elsewhere. Credit 3 units.

A&S CD TH

Music 3023. Jazz in American Culture

Same as AMCS 3023, AFAS 3152

With emphasis on the major innovators in jazz from the 1940s to the present, jazz history is placed within the context of African-American and American cultural history, with particular emphasis on the effects of the Civil Rights Movement and African independence on the development of the post-WWII jazz canon. This course is not a survey. You are expected to be already familiar with basic jazz history and ready to undertake more in-depth study of major figures such as Charlie Parker, Thelonius Monk, Miles Davis, Charles Mingus, Ornette Coleman, and Wynton Marsalis. The course also considers the effects of rock-and-roll, gospel, and funk on jazz. Prerequisites: Music 105, ability to read music, or permission of instructor. Credit 3 units.

A&S SD TH WI

Music 3024. From Cage to Glass and Beyond

Explores the various directions composers took in the second half of the 20th century, including "chance" music of John Cage, minimalism of Philip Glass, and post-modernism. Includes concert attendance. Prerequisite: ability to read music is advisable but not required. Credit 3 units.

A&S TH

Music 3025. Women of Music

Same as WS 3205

Popular music and art music around the world, from the perspective of women. The roles of women as creators, performers, sponsors, and consumers. The representation of women in music, and how it relates to cultures of the past and present. Credit 3 units.

Music 3026. Aspects of Native-American and Hispanic Music and Culture in New Mexico

The course juxtaposes Pueblo, Navajo, Hispanic, and Anglo cultures focusing chiefly upon Native-American prehistory and history; contrasting views of creation and cosmology; comparisons of Navajo and Pueblo society, ceremony, music, and art; Pueblo-Spanish relations: confrontation and compromise with Catholicism; Navajo-U.S. relations: the Long Walk and its aftermath. It includes demonstrations of sandpainting, song, and dance by a Navajo traditional healer/singer and of Pueblo music by a Cochiti drum maker; a trip to the buffalo and Comanche dances at San Juan Pueblo; visits to sites such as Banderlier National Monument, Puye Cliffs, Chaco Canyon, Taos Pueblo; Rancho de Las Golondrinas, the Museum of Indian Arts and Culture, the Wheelwright Museum, the Santa Fe Palace of Governors, and the collection of the Spanish Colonial Arts Society. Credit variable, maximum 3 units.

A&S CD TH

Music 3051. Text and Music

How do composers respond to the structure and meaning of text? Can spoken language become musical sound? Can musical sounds become textual signifiers? The course explores these questions by examining a broad range of texted music: Gregorian chant, Japanese Noh drama, English madrigals, Bach cantatas, 19th-century German lieder, opera by Mozart and Wagner, American

musical theater, high modernist works by Schoenberg, Stockhausen, Berio, and Lansky, as well as, popular music. Some knowledge of music theory is required, and familiarity with German is helpful, though all texts are provided with English translations. A lot of listening and reading, several short and analytical assignments, three essays. Prerequisite: one year of music theory or permission of instructor. Credit 3 units.

A&S TH

Music 3091. Jazz Improvisation I

An introduction to improvising music in the jazz tradition, including diatonic and chromatic harmony, extended chords, modes, and jazz scales. Exercises in basic aspects of the blues and in the styles of bebop and modern jazz. Prerequisite: Music 1091. Credit 3 units.

A&S LA

Music 315, 317. Selected Area for Special Study

In-depth study in areas of special interest. Credit 3 units.

Music 321. Music Theory V

Problems in writing and analysis defined through the study of 19th-century works. Prerequisite: Music 222. Credit 3 units.

A&S TH

Music 3231, 3241. Musicianship V, VI

Advanced ear training, sight singing, and dictation skills. Prerequisite: Music 2241. Three and one-half class hours a week. Credit 1 unit a semester.

A&S LA

Music 3232, 3242. Keyboard Skills V, VI

Advanced skills in score reading, figured bass, and improvisation, as well as drills, including seventh chords and modulation. Prerequisite: Music 2242. One and one-half class hours a week. Credit 1 unit a semester.

A&S LA

Music 325. Instrumentation and Orchestration

A study of the science of instrumentation and the art of orchestration. In-class performances of student compositions aid in the understanding of instrumental capabilities and limitations. Analysis of orchestral scores by Ravel, Stravinsky, *et al* provides insight into efficient and creative use of the orchestra. In addition, scoring for both vocal and chamber ensembles is covered. Prerequisite: Music 103E or permission of instructor. Credit 3 units a semester.

A&S LA

Music 328. History of the Film Score

Same as Film 360.

Music 329, 330. Advanced Composition Workshop I, II

Continuation of Music 129-130. Prerequisite: Music 130. Credit 1 unit a semester.

A&S LA

Music 339, 340. Introduction to Conducting I, II

Fundamentals of conducting, including the study of transposing instruments and practice in score reading. Prerequisite: permission of instructor. Credit 2 units a semester.

A&S LA

Music 3951, 3961. Independent Study

Supervised independent study in areas in which there are no current course offerings. Student must submit to the department chair an outline of the work to be covered, the number of credit hours requested for the work, and the name of the instructor who will be asked to supervise the work. Class hours variable, depending on credit. Credit variable, maximum 3 units.

Music 401, 402. Techniques of Electronic Music

Individual and small group instruction in "classical" procedures and relevant electronic technol-

ogy. Practical composition studies to build technique in electronic music. Prerequisite: open to music majors and to others by permission of instructor. Credit 3 units a semester.

A&S LA

Music 411. Music of the Medieval Period

Same as Med-Ren 409

An intensive survey of Western monophonic and polyphonic music from the beginnings of Christian chant to circa 1450. Prerequisite: Music 3011 or permission of instructor. Credit 3 units.

A&S TH

Music 412. Music of the Renaissance Period

Same as Med-Ren 412

A survey of music literature from circa 1450 to circa 1600. Prerequisite: Music 3011 or permission of instructor. Credit 3 units.

A&S TH

Music 413. Music of the Baroque Period

An intensive survey of the primary musical forms and styles in 17th-century Italy, France, Germany, and England. Prerequisite: Music 3012 or permission of instructor. Credit 3 units.

A&S TH

Music 414. Music of the Classic Period

An intensive survey of music literature from circa 1750 to circa 1830 with attention to the music of Haydn, Mozart, Beethoven, and some of their predecessors. Prerequisite: Music 3012 or permission of instructor. Credit 3 units.

A&S TH

Music 416. Contemporary Music

Survey of musical styles from the end of the 19th century through the present postmodernism. Developments in music considered in context of intellectual history of the century with specific attention to parallels with literature and visual arts. Readings from a variety of sources and extensive listening assignments. Prerequisite: Music 3013 or permission of instructor. Credit 3 units.

A&S TH

Music 4221. Introduction to the Analysis of 20th-Century Music

An introduction to theory and analysis of music from the 20th-century repertoire. In-class analysis and individual assignments emphasize aural understanding and tools for modeling pitch structures in post-tonal and 12-tone works. In the latter portion of the course, our focus turns toward works in which pitch structures play a smaller role. Prerequisite: Music 222 (undergraduates) or Music 423 (graduates). Credit 3 credits.

A&S TH

Music 423. Analysis I

A study of structural principles underlying music of all periods: motivic usage, melodic shape, varieties of texture and structure with an emphasis on fugue, variation forms, and proportional forms such as rondo and sonata-allegro. Prerequisite: graduate standing or permission of instructor. Credit 3 units.

A&S TH

Music 424. Analysis II

Continuation of Music 423, concentrating on approaches to larger and more complex works of classically tonal music, including 18th-century symphonies and string quartets, late works by Beethoven, chamber music and symphonies of Brahms, and symphonies of Mahler. Prerequisite: Music 423 or permission of instructor. Credit 3 units.

A&S TH

Music 425. Counterpoint I

Same as Med-Ren 426

Concentrated independent study in 16th-century contrapuntal composition. Prerequisite: Music 222. Credit 3 units.

A&S LA

Music 426. Counterpoint II

Concentrated independent study in 18th-century contrapuntal composition. Prerequisite: Music 222. Credit 3 units.

A&S LA

Music 427, 428. Selected Areas for Special Study I, II

In-depth study in areas of special interest. Prerequisite: senior or graduate standing, or permission of instructor. Credit 3 units a semester.

A&S LA

Music 429, 430. Composition III, IV

Concentrated independent work in composition for experienced undergraduate composers. May be repeated for credit. Prerequisite: permission of instructor. Credit variable, maximum 3 units a semester.

A&S LA

Music 437, 438. Piano Pedagogy I, II

The study of the fundamentals of teaching from beginning to advanced levels. A syllabus is developed through discussion of lesson plans for each level. The class participates actively in demonstrations. Credit 3 units a semester.

A&S LA

Music 4371. Opera Production

Intensive training in the principles and techniques of the opera stage. Prerequisites: two years of vocal training and audition or Drama 343. Credit variable, maximum 3 units.

A&S LA

Music 4372. Voice Pedagogy

Preparation of participants to train the singing voice through examinations of physical, phonological, neurological, and psychological aspects of vocal function, followed by observation and practice teaching. Prerequisite: permission of instructor. Credit 3 units.

A&S LA

Music 4375. Vocal Literature

A survey of song literature through listening and performing. Prerequisite: permission of instructor. Credit 3 units.

A&S TH

Music 4376. Opera Literature: Various Composers each Semester

A study of a composer's principal stage masterpieces, with an emphasis on the different genres and theatrical conventions to which they belong, and on the writings for voices. Credit 3 units.

A&S TH

Music 4381. Literature of the Piano

Concentrated study of a major piano composer and/or genre (e.g., the piano concertos of Mozart, Chopin's piano works, etc.). Although the approach is primarily analytical, historical and performance practice issues are considered as well. Prerequisite: senior standing, graduate standing, or permission of instructor. Credit 3 units.

A&S TH

Music 439, 440. Diction I, II

Principles of Italian, French, and German pronunciation covered in an interrelated approach; application of these principles to songs. Prerequisite: permission of instructor. Credit 3 units a semester.

A&S LA

Music 4539, 4540. Advanced Conducting I, II

Advanced training in conducting skills, including opportunities to conduct ensembles on campus. Prerequisite: graduate standing or permission of instructor. Credit 2 units for Music 4539; 3 units for 4540.

A&S LA

Music 4991. Senior Project: Musicology or Analysis

Supervised research in music history or theory culminating in a major paper. Required of Bachelor of Music majors with history or theory emphasis. Prerequisite: senior standing. Credit 3 units.

A&S TH

Music 4992. Senior Project: Performance, Composition, or Theory

Independent work culminating in a paper, composition, and/or performance. Projects by Bachelor of Music majors with general emphasis must combine work in two or more areas. Prerequisite: senior standing. Credit 3 units.

A&S LA

Music 4993. Honors Project: Musicology or Analysis

Prerequisites: senior standing, a grade point average of 3.0 or higher, and permission of the faculty supervisor, director of undergraduate studies, and the chair of the department. Credit 3 units.

A&S TH

Music 4994. Honors Project: Performance, Composition, or Theory

Prerequisites: senior standing, a grade point average of 3.0 or higher, and permission of the faculty supervisor, the director of undergraduate studies, and the chair of the department. Credit 3 units.

A&S LA

Music 500. Independent Study

Supervised independent study in areas in which there are no course offerings. Students must submit to the department chair an outline of work to be covered, the number of hours of credit requested, and the name of the instructor to supervise the research. Prerequisites: permission of instructor and department chair. Credit variable, maximum 6 units.

Pathfinder Program in Environmental Sustainability

Participating Faculty, 2006–2008

Raymond E. Arvidson
James S. McDonnell Distinguished
University Professor
(Earth and Planetary Sciences)
Ph.D., Brown University

The Pathfinder Program in Environmental Sustainability gives participating students a chance to engage in interactive study of the environment with a small group of motivated undergraduates, a senior faculty member, and a graduate fellow while fulfilling some of the breadth requirements required of undergraduates at Washington University. Through case studies and field trips, students examine the issues surrounding environmental sustainability and the preservation of the environment for future generations. While participating in the Pathfinder program, you may pursue a major in biology, chemistry, earth and planetary sciences, environmental studies, mathematics, or physics in the College of Arts & Sciences, or pursue a major within the School of Engineering & Applied Science. In addition to taking the Pathfinder core courses, you may take courses that are tailored to student interests and majors. The Pathfinder program supports the concept that taking interrelated courses and learning both analytical and technical skills helps complete a senior year capstone research experience and prepares one for graduate studies or the work force.

Undergraduate Courses

Path 104A. The Southwestern United States: Case Studies

Students examine the interrelation of scientific, cultural, and policy issues associated with selected areas in the southwestern United States. The Natural Sciences group studies the Mojave Desert in California, investigating evidence for climatic change, degradation of the environment from anthropogenic causes, and the formation of the new Mojave National Preserve. The Cultural Anthropology and Political Science groups focus their investigations on the Four Corners area and analyze ecological and political aspects of ancient and modern agriculture, as well as challenges facing protected areas in the National Parks system. In an end-of-semester workshop, students in different groups share their experiences through oral presentations, posters, and student-led panel discussions. Coursework draws heavily upon the concepts and methodologies developed during the fall course. Prerequisite: Admission in the Pathfinder Program in Environmental Sustainability. Credit 1 unit.

A&S NS FA NSM

Path 104B. The Southwestern United States: Case Studies

Continuing their studies in Land Dynamics, students examine the interrelation of scientific, cultural, and policy issues associated with selected areas in the southwestern United States. The Natural Sciences group studies the Mojave Desert in California, investigating evidence for climatic change, degradation of the environment from anthropogenic causes, and the formation of the new Mojave National Preserve. The Cultural Anthropology and Political Science groups focus their investigations on the Four Corners area and analyze ecological and political aspects of ancient and modern agriculture, as well as challenges facing protected area in the National Parks system. Each faculty member leads a group of students on a field trip to the group's study area during spring break. In an end-of-semester workshop, students in different groups share their experiences through presentations, poster, and student-led panel discussions. Coursework draws heavily upon the concepts and methodologies developed during the fall course. Prerequisite: Admission to the Pathfinder Program in Environmental Sustainability. Credit 1 unit.

A&S NS FA NSM

Path 105F. Philosophy of the Environment

Study of issues concerning sustainability, the concept and experience of wilderness, and the role of technology in environmental crisis, with readings from philosophical works and literature of the desert Southwest. Strong focus on individual research projects and intensive small group work. This course builds on the first semester Pathfinder courses and encourages students to identify and critically examine some of the basic historical and philosophical assumptions and values that inform our relationship with the environment. Can we reframe and resolve environmental problems through a balanced evaluation of aesthetic, scientific, cultural, political and ethical perspectives? Prerequisite: Admission to the Pathfinder Program in Environmental Sustainability. Credit 3 units.

A&S TH FA SSP

Path 201. Land Dynamics and the Environment

Use of case studies such as anthropogenic changes to the Lower Missouri River, effects of mining in the Ozarks, and excessive uses of water in arid terrains in the Southwestern United States to explore key issues associated with environmental sustainability. Scientific concepts related to the dynamics of the environment and development of policies needed to maintain land and resource sustainability. Lectures, discussion sessions, interactive computer exercises using simulation models, appropriate field trips, and student presentations. Prerequisite: Admission to the Pathfinder Program in Environmental Sustainability. Credit 3 units.

A&S NS FA NSM

Path 202. Case Study: Southwestern United States

Issues associated with the Mojave Desert's environmental sustainability. Investigation of the fragile desert environment and its degradation from anthropogenic uses. Politics associated with the Mojave National Preserve. Field work conducted during spring break. Prerequisite: Admission to Pathfinder Program in Environmental Sustainability. Credit 2 units.

A&S SS FA NSM

Path 301B. Case Study: Hawaii

Issues in environmental sustainability and hazards of the Hawaiian Islands. Volcanism, earthquakes, tsunamis, issues related to agricultural encroachment on the subtropical rainforests. Exploration of both scientific and societal contexts. Field work conducted during winter break. Prerequisite: Path 201, Path 202. (The Path 201/202/301 sequence qualifies for a "B" distribution requirement.) Credit 1 unit.

A&S SS FA NSM

Path 390. Independent Study

Credit variable, maximum 4 units.

Path 401. Directed Research

Research for third-year Pathfinder Program students that is focused on initial definition of a Senior Honors thesis. Prerequisite: Admission to Pathfinder Program in Environmental Sustainability. Credit variable, maximum 3 units.

Performing Arts

Chair

Henry I. Schvey, Professor
Ph.D., Indiana University

Professor

William J. Paul
Ph.D., Columbia University

Associate Professors

Mary-Jean Cowell
Ph.D., Columbia University

Robert K. Henke
Ph.D., University of California–Berkeley

Jeff Smith
Ph.D., University of Wisconsin–Madison

Visiting Distinguished Artist in Residence

Residence

Jane Lapotaire

Royal Shakespeare Company Honorary
Associate Artist
D.Litt., Bristol University
D.Litt., University of East Anglia

Senior Artists in Residence

Christine Knoblauch-O’Neal
M.A.L.S., Wesleyan University

Bonnie J. Kruger
M.F.A., University of Illinois

David W. Marchant
M.F.A., University of Iowa

Jeffery S. Matthews
M.F.A., Virginia Commonwealth University

Annamaria Pileggi
M.F.A., Brandeis University

Andrea Urice
M.F.A., University of Virginia

William Whitaker
M.F.A., Florida Atlantic University

Artists in Residence

Christopher J. Pickart
M.F.A., Pennsylvania State University

Cecil Slaughter
M.F.A., University of Iowa

David Vogel
M.F.A., Pennsylvania State University

Senior Lecturer

Pier Marton
M.F.A., University of California–
Los Angeles

Lecturer

Sally Brayley Bliss
Executive Director Dance St. Louis and
Director of the Tudor Trust

Playwright in Residence

Carter W. Lewis
M.A., University of Oklahoma

Professor Emerita

Annelise Mertz
M.F.A. equivalent, Folkswangschule,
Essen, Germany

The Performing Arts Department (PAD) offers the opportunity to study drama and dance within the context of a liberal arts education. Our courses provide a creative balance between rigorous practical training for actors, dancers, or designers and historical and theoretical backgrounds.

When studying performing arts at Washington University, you can take advantage of opportunities in acting, directing, dance techniques, playwriting, theater studies, design (costume, scenic, lighting), and dance history, theory, and ethnology. In small, individualized classes, you learn from both faculty scholars and working professionals. Performance courses, which are taught by our full-time faculty, are limited to a maximum of 16 students, which ensures close faculty supervision.

As an undergraduate, you have numerous opportunities to act, dance, direct, design, choreograph, and perform in both faculty-directed and student-run shows. You may choose to participate in these projects as extracurricular activities or to earn course credit through independent study. A Senior Honors thesis is a 6-credit project available to seniors who are eligible for Latin Honors. At the end of the sixth semester the student must have at least a 3.5 cumulative grade point average and a 3.5 grade point average in the major. The thesis is designed to be an extensive, integrative, culminating endeavor for the senior student.

Washington University’s Edison Theatre is a vital part of the performing arts on campus. Each year the OVATIONS! series hosts many professional guest artists and companies who perform, offer demonstrations, and teach master classes.

Performing arts opportunities outside the classroom are the annual A. E. Hotchner Playwriting Competition, with the winning play written by a student being produced in our A. E. Hotchner Drama Studio; Thyrus, a student-run drama and dance club that produces shows, concerts, and open-mic nights for students; All Student Theatre, which produces an annual outdoor musical on campus; and Mama’s Pot Roast, a student-run comedy/improvisation group.

Shakespeare’s Globe is an intensive, four-week summer program in acting and theater history held at the Globe Theatre in London, featuring master classes with actors, directors, designers, and scholars.

For additional information regarding majors and minors in the Performing Arts department, please see the Performing Arts Department Handbook.

Dance

You may select dance as a major through the Performing Arts Department. This course of study combines intensive studio work in technique and theory of modern dance, ballet, and composition with seminars examining dance as a global phenomenon with culturally specific historical, aesthetic, and anthropological

aspects. The program also includes courses in stagecraft, anatomy for dancers, pedagogy, musical theater dance, tap, jazz, and world dance forms.

When you study dance at Washington University, you learn from faculty members who have professional experience in addition to their academic degrees. You also have the opportunity to study with guest artists in residence who teach master classes and set choreography.

You may audition for the Washington University Dance Theatre, which holds annual auditions for students. If selected, you will appear in faculty- and guest-artist choreographed concerts in Edison Theatre. You also may participate in student choreography productions and drama productions. Each year, students attend the regional American College Dance Festival to perform and take master classes.

Dance majors take acting, stagecraft, and dance composition as well as courses in technique and theory of modern dance and ballet. Other required courses include dance history and ethnology seminars such as “From Romantic to Postmodern Dance” and “Ballet as Ethnic Dance and Classical Art” and electives chosen from dance accompaniment and music resources, arts management, pedagogy, applied anatomy, musical theater, jazz, and world dance (West African and Bharata Natyam) courses.

The dance major requires 40 units for completion. Among these, required courses are Dance 203, Dance 212E, Drama 240E, Drama 300, and Dance 303. An additional 5 units must come from dance courses or advance placement in dance, 6 units from Dance 301, 302, 321, 322, 401, 402, 415, 416, 4281, or 429 (2 units each), and 6 units must come from either Dance 315E, 316E, or 340. A minimum of 10 electives must also be taken.

You may also minor in either modern dance or ballet. For both minors, you take studio dance courses, one composition course, one seminar, and one or two dance electives.

Undergraduate Courses

Dance 104. Body Conditioning

A complete body conditioning program designed to increase strength and flexibility. Uses some floor barre and Pilates-related floor exercises. Credit variable, maximum 2 units.

Dance 106E. Introduction to Dance as a Contemporary Art Form

Introduction to dance as a creative art form. Through practical work in the studio, students gain an understanding of the human body as an instrument of expression and of motion as the medium of dance. Technique, analysis, and creative work. Not open to majors. May be repeated once for credit. Credit 2 units.

A&S LA FA AH

Dance 111. Contemporary Dance for the Male Dancer

For men who may have athletic or other physical kinesthetic skills, but little to no formal dance training. This course is designed to meet the specific needs of the male body in its capacity for dynamic, aesthetic, expressive movement. Introduction to dance as a creative art form using the body as the instrument of expression and motion as the

medium of dance. Technique, analysis, and creative work. Credit 2 units.

A&S LA

Dance 120. Yoga and Relaxation Techniques

Systematic introduction to the methods and theory of yoga as a means of stretching, strengthening, energizing, and relaxing the body. Incorporates meditation, massage, and other release techniques to help sharpen both body and mind. Students should wear comfortable clothing permitting freedom of movement and bring a mat or towel. Related readings assigned. For beginning students of all ages. Credit 2 units.

Dance 200. Tutorial

Supplementary work at the low intermediate level in ballet and modern dance and intermediate-advanced work in ballet and modern dance at times to be announced. Prerequisites: sophomore standing and permission of the coordinator of the Dance Division. Credit to be determined in each case. Credit variable, maximum 6 units.

A&S LA

Dance 201E. Theory and Technique of Modern Dance I

Fundamental theory and techniques of American modern dance. Studio work investigating the expressive potential of human movement and developing individual rhythmic and kinesthetic awareness, coordination, and breadth of movement vocabulary. Related reading and videotapes expand on theory embodied in the class work and give a historical overview of modern dance in the United States. Attendance of two to three performances required. Prerequisite: some previous dance training or permission of instructor. Credit 3 units.

A&S LA

Dance 202. Theory and Technique of Modern Dance II

A course for students familiar with the basic concepts and technique of modern dance. Emphasis on expanding individual movement versatility with increasing difficulty of choreographic phrase materials. Related readings and videos, some focused on American postmodern dance. Attendance at two to three performances required. Prerequisites: Dance 201 or permission of the instructor. Credit 3 units.

A&S LA

Dance 203. Composition I

Finding personal movement and transforming it into dance. Through a series of class projects the formal elements of composition are introduced. Prerequisites: Dance 201 or permission of the instructor. Concurrent registration in a technique class required. Credit variable, maximum 3 units.

A&S LA

Dance 208. Composition and Technique

Introduction to dance composition supported by two technique classes each week at the level appropriate to the individual student. Work on composition assignments outside of class is expected. Prerequisite: Dance 201E or permission of instructor. Credit 4 units.

A&S LA

Dance 211. Yoga and Relaxation Techniques II

A more vigorous yoga discipline incorporating flow series and held postures. This class concentrates on the movement and distribution of energy throughout the body. Prior yoga experience recommended. Credit variable, maximum 2 units.

A&S LA

Dance 212E. Introduction to Theater Production

Same as Drama 212E.

A&S LA

Dance 213. Improvisation I

This course explores the process and art form of

creative, expressive, spontaneous dancemaking. Students learn to simultaneously move and respond in the moment, developing skills of communication, observation, performance, and composition in the language of movement. Open to dancers of all levels. Light reading; in-class and out-of-class projects. Credit 1 unit.

A&S LA

Dance 221. Fundamentals of Classical Ballet

Designed for dancers with no previous training or knowledge of the development of ballet in America, a systematic introduction to the ballet technique, including traditional terminology and introductory readings on American Ballet Theater as a repository for classical and modern ballet repertoire of both American and European choreographers. Attention to basic anatomical concerns and body alignment as well as to the classical movement vocabulary. Prerequisite: none. Credit 2 units.

A&S LA

Dance 222. Fundamentals of Classical Ballet

Designed for dancers with no previous training or knowledge of the development of ballet in America, a systematic introduction to the ballet technique, including traditional terminology and introductory readings on New York City Ballet as a repository for the choreography of George Balanchine and Jerome Robbins. Attention to basic anatomical concerns and body alignment as well as to the classical movement vocabulary. Credit 2 units.

A&S LA

Dance 223. Topics in Theater: Introduction to the American Musical Theater

Same as Drama 221.

A&S LA FA AH

Dance 257. Dance Theater Production

Same as Drama 257.

Experience in technical production. Required stage work includes two studio dance productions. Prerequisite: Dance 212E. Credit 1 unit.

A&S LA

Dance 280. Hip Hop-Jazz

Hip Hop-Jazz and music video dance combine in this exciting, high-energy course. Students learn elements from each of these dance styles and focus on how they have been adapted into pop culture choreography. This course is designed for students with at least one year of dance training. It is expected that by the end of the course, students will have a greater knowledge of dance and dance terminology, and an increased ability to perform set choreography. Primarily a studio course; some related reading assigned. Credit 2 units.

Dance 296. Internship

Students may receive up to 3 units of credit for an approved internship with an organization in which the primary objective is to obtain professional experience outside the classroom. Students must file a Learning Agreement with The Career Center, a faculty sponsor, and the site supervisor. This must be approved by all three constituencies before proceeding. A final written project is agreed upon between the student and faculty sponsor before work begins, and is evaluated by the faculty sponsor at the end of the internship. Credit variable, maximum 3 units.

A&S LA

Dance 297. Fundamentals of Jazz Dance

Same as Dance 297.

This course introduces the basic principles and vocabulary of traditional jazz dance as influenced by American social dances and its relationship to the rise in popularity of jazz music. Both are unique to America and are rooted in African-American and European-American culture. Prerequisite: one year of training in ballet technique

or modern dance. Credit 2 units.

A&S LA

Dance 300. Jazz Dance II

Intermediate-advanced work in jazz dance technique, including choreographic phrases emphasizing stylistic clarity and more complex rhythmic structure. Prerequisite: Dance 297 or permission of instructor. Credit 1 unit.

A&S LA

Dance 301. Theory and Technique of Modern Dance III

Technique and related concepts for the intermediate-level student. Greater emphasis on the ability to accurately replicate or individually interpret choreographic material. Related reading and video assignments on contemporary dance developments and attendance at two to three performances required. Variable content; may be repeated for credit in a subsequent semester. Prerequisite: Dance 202 and permission of the instructor. Credit 3 units.

A&S LA

Dance 3021. Theory and Technique of Modern Dance IV

Same as Dance 3021.

Continuation of Dance 301. Variable content; may be repeated for credit in a subsequent semester. Prerequisite: Dance 301 and permission of instructor. Credit 3 units.

A&S LA

Dance 303. Composition II

A workshop for students with experience in choreography. Study of approaches to dance composition with related improvisation problems. Work outside of studio hours expected. Prerequisite: Dance 203 or 208 and permission of the instructor. Concurrent registration in a technique course required. Credit 3 units.

A&S LA

Dance 305Z. Music Resources for Dance

Same as Dance 305Z.

Analysis of Western (Europe, America), World (Africa, India, Indonesia), and global popular musics. Emphasis on rhythm/form, style/genre, instrumentation, and function/context. Basic music theory: notation, time signatures, subdivisions and polyrhythms. Major composers for dance (Lully, Tchaikovsky, Debussy, Ravel, Stravinsky, Cage, etc.). Introduction to percussion techniques for dance accompaniment using hand drums, drumset, and hand-held instruments. Introduction to basic studio techniques including microphones, recording, and editing equipment, and the use of synthesizer and drum machines. Prerequisites: for dance students at the intermediate or advanced level. Credit 2 units.

A&S LA

Dance 307. Costume Design and History

Same as Drama 307.

A&S LA FA AH

Dance 308. Dance Composition Projects

Supervised choreography, primarily for small groups, on themes assigned by the instructor or formulated by the student and approved by the instructor. Minimum of one class hour weekly for discussion and showing of work prepared outside class. Prerequisites: minimum of one semester course work in composition and permission of the instructor. Credit variable, maximum 3 units.

A&S LA

Dance 309. Composition and Technique II

Continuing work in dance composition supported by two technique classes each week at the level appropriate to the individual student. Work on composition assignments outside of class is expected. Prerequisite: Dance 201, Dance 203, or permission of instructor. Credit 4 units.

A&S LA

Dance 310. Dance Improvisation II

Continuation of Dance 213. Prerequisite: Dance 213 or permission of instructor. Concurrent registration in a dance technique course at the 300 level or higher is required. May be repeated once for credit. Credit 1 unit.

A&S LA

Dance 311. Modern Dance and the African-American Legacy

Same as Dance 311.

This course examines the works of several African-American choreographers and their contributions to the field of modern dance in America. These works, considered modern-day classics, depict important historical events and reveal cultural influences that people of African descent have impressed upon our society. Through the medium of dance aided by discussions, video, and class reading assignments, the choreographers' works are analyzed for form, content, and social relevance. Studio work include technique to support learning the repertory. Prerequisite: one to two years training in modern, jazz, or ballet. Credit 2 units.

A&S LA **FA** AH

Dance 312. Accompaniment Techniques for Dance

Same as Dance 312.

A wide variety of percussion instruments and techniques are studied to determine what makes effective dance accompaniment. The course includes: examples and discussion of dance musics from Western and non-Western cultures; basic notation of rhythm and form; demonstrations of musical styles and discussion of social contexts. Students have opportunities to assist in accompanying modern dance classes. Minimum of two to three hours a week of individual practice and/or listening to recordings expected. Credit 2 units.

A&S LA

Dance 315E. Dance Spectrum

Introductory consideration of dance as a human activity with culturally specific forms and functions. The course material is multicultural and organized both thematically and chronologically. Topics include: dance as ritual and art; dance and politics; dance as reflection and subversion of gender norms; classical Asian dance forms; and a brief overview of the development of Euro-American theatrical dancing, especially ballet and modern dance. Seminar format, with less emphasis on lectures than on discussion based on reading and extensive video materials. Credit 3 units.

A&S CD TH **FA** AH

Dance 316E. From Romantic to Postmodern Dance

Same as Dance 316.

An overview of European and American theater dance from the late 19th century to the present. Topics include: Isadora Duncan's work as transition and revolution, Orientalism in early modern dance and the Diaghilev Ballet Russes, the "reconstruction" of the dancer's body, gender issues in movement vocabulary, choreographic content and professional working conditions, the emergence of modernism and postmodernism in dance. Seminar format emphasizing discussion as well as lectures, extensive reading and dance videos. Credit 3 units.

A&S TH **FA** AH

Dance 319. Stage Lighting

Same as Drama 310.

A&S LA

Dance 321. Classical Ballet: Intermediate I

Same as Dance 321.

A course designed for those with a solid foundation in the fundamentals of ballet technique. Related reading and video assignments; attendance at two to three ballet performances. Variable content; may be repeated in a subsequent semester. Prerequisites: completion of Dance 221 and 222, and

permission of instructor. Credit 2 units.

A&S LA

Dance 322. Classical Ballet: Intermediate II

Special emphasis on the development of adagio, allegro, and turn sequences. Variable content; may be repeated in a subsequent semester. Prerequisites: Dance 221 and 222 or instructor permission. Credit 2 units.

A&S LA

Dance 323. Topics in Theater

Same as Drama 321.

A&S LA

Dance 327. Ivory Coast Dance

A West African dance course specifically focused on the Ivorian dance traditions of the Baule, Bete, Dan, Lobi, Malinke, and Senufo peoples. Students learn the drum rhythms and cultural background of the dances. A studio course with related reading material. Previous training in West African dance recommended. Credit 2 units.

A&S LA

Dance 332. Mind-Body: Integral Practices

The mind and the body are not only connected, they are a fundamental unity, always functioning in a coordinated state. Whether or not we coordinate them well or badly is a choice we make, whether we are conscious of choosing or not. Many so-called "physical" exercises, activities, and arts suffer from a lack of adequate skills of sensation, attention, perception, and conscious control. Conversely, many so-called "mental" activities lack adequate awareness of the physiological, bodily underpinnings of thought. Like a person learning to play a musical instrument, one's ability to coordinate the mental and physical aspects of self toward one's best personal potential is a skill requiring study of strategies and techniques for good practice in "being well." Such ideas and methods are not "new age," but can be traced back through more than a century in the work of investigators such as F.M. Alexander, progressive educator John Dewey, anthropologist Raymond Dart, and many others. Through direct experience and related readings, this class introduces students to "somatic," or "integral" practices—activities that are inherently more effective at developing the aspects of self in a coordinated and authentically holistic manner. We then learn to apply our understanding to all kinds of activities, both mental and physical, from chores to exercise, from arts to sports, from hobbies to vocations. Some kind of prior movement training (such as athletics, martial arts, dance, etc.) is preferable, but not required. Credit 2 units.

A&S LA

Dance 340. Ballet as Ethnic Dance and Classical Art

This course examines major developments in 19th- and 20th-century ballet, emphasizing their relationship to concepts of ethnicity and classicism. Issues considered include: analysis of ethnic content not only in thematic material but in ballet movement vocabulary and training process; the conscious reformulation in the United States of European ballet as an equally American art form; the expansion of Euro-American "classical ballet" in the work of Balanchine and Tudor; the appropriation of ballet by non-Western countries (such as China and Japan) and its impact on native dance genres; typical construction of the ballet dancer's body and movement, including gender definition, in relationship to a specific ethnic community context. Seminar format with lectures, discussion, and video materials. Midterm paper or project, and final. No prerequisites. Credit 3 units.

A&S SD TH WI

Dance 400. Dance Production Projects

Students may receive credit for work on special dance-related production projects conceived by

students and supervised by faculty. Contracts must be signed by the student, faculty supervisor, and the coordinator of Dance 400 before work on the project commences. Students should register for this course after work is completed. Prerequisite: permission of the dance faculty. Credit to be determined in each case. Credit variable, maximum 3 units.

A&S LA

Dance 401. Theory and Technique of Modern Dance V

Emphasis on versatility in movement vocabulary and on more complex and intensive technical work with discussion of theory inherent in the studio work. Related reading and projects. Variable content; may be repeated for credit in a subsequent semester. Prerequisite: Dance 302 or permission of the instructor. Credit 3 units.

A&S LA

Dance 402. Theory and Technique of Modern Dance VI

Same as Dance 4021.

Continuation of Dance 401 with emphasis on more complex and intensive technical work. Variable content; may be repeated for credit in a subsequent semester. Prerequisites: Dance 401 and permission of the instructor. Credit 3 units.

A&S LA

Dance 404.1. Composition III

The exploration of choreographic problems for small and large groups. Prerequisite: senior standing or permission of instructor. Previous or concurrent registration in Dance 4021 recommended. Credit variable, maximum 3 units.

A&S LA

Dance 414. Advanced Stage Lighting

Same as Drama 410.

A&S LA

Dance 415. High Intermediate Ballet I

A course designed as preparation for the advanced level. Emphasis on vocabulary review and individual technique assessment, including placement, movement quality, and musicality. Related readings and video assignments; attendance at and critical analysis of one to two ballet performances. Variable content; may be repeated in a subsequent semester. Prerequisite: permission of instructor. Credit 2 units.

A&S LA

Dance 416. High Intermediate Ballet II

A course designed for the high intermediate dancer in preparation for Dance 4281/429. Emphasis on placement, movement quality, and musicality. Related readings and projects supplement the classical vocabulary. Prerequisites: B+ or better in Dance 221, 222, 321, 322 and/or permission of instructor. Credit 2 units.

A&S LA

Dance 418. Variations in the Ballet

Introduces classical choreography within various ballets. Prerequisites: Dance 321 or 4281 with some pointe training, and permission of instructor. Credit 1 unit.

A&S LA

Dance 423. Pointe Technique

Designed for dancers with a basic foundation in pointe work. Variable content; may be repeated for credit in a subsequent semester. Prerequisites: concurrent registration in Dance 321 or 4281 and permission of instructor. Credit 1 unit.

A&S LA

Dance 424. Pointe Technique

Designed for dancers with a basic foundation in pointe work. Prerequisites: concurrent registration in Dance 321, 322, 4281, or 4291 and permission of instructor. Credit 1 unit.

A&S LA

Dance 4281. Classical Ballet III

Designed for dancers with a solid foundation in beginning and intermediate ballet technique. Related reading, research paper/discussion, video assignments; attendance at one to two ballet performances. Variable content; may be repeated for credit in a subsequent semester. Prerequisite: permission of instructor and B+ or better in Dance 3221 and 415 or 416. Credit 2 units.

A&S LA

Dance 4291. Classical Ballet IV

Same as Dance 4291.

A course designed for dancers with a solid foundation in beginning and intermediate ballet technique. Variable content; may be repeated for credit in a subsequent semester. Prerequisite: permission of instructor, and B+ or better in Dance 3221 and 416. Credit 2 units.

A&S LA

Dance 430. Dance Pedagogy

Introduction to the theory and methods of dance instruction. Primarily focused on teaching modern dance but may also be useful for those interested in teaching ballet or jazz dance. Course work includes readings and discussion of the objectives, components, and organization of a dance class; an introduction to musical terminology and rhythmic analysis; assignments to formulate components and plan classes; ultimately, supervised teaching of entire classes to others in the course. Prerequisite: minimum of two semesters of upper-level coursework in dance technique. Credit 2 units.

A&S TH

Dance 435. Creative Movement for the Elementary Grades

This class offers methods for group and individual exploration in movement, and discover its creative possibilities in and out of the classroom. Teachers in the arts, sciences, language, and physical education as well as parents, gather tools to expand the horizons of kinesthetic experience, experiment with concepts of time, space, weight, and energy, and integrate a physical component into classroom projects for the elementary grades in an effort to teach the whole student. This is an experiential class; please wear clothes allowing freedom of movement. Credit 2 units.

Dance 457. Dance Repertory

Same as Dance 457.

Under the direction of an experienced choreographer, students rehearse and perfect repertory concert dances. All students perform or understudy the choreographies. May be repeated for credit. Enrollment by audition. Prerequisite: concurrent registration in a technique class required. Credit 1 unit.

A&S LA

Dance 458. Dance Repertory

Same as Dance 458.

Under the direction of an experienced choreographer, students rehearse and perfect repertory concert dances. May be repeated once for credit. Prerequisite: permission of the coordinator of the Dance Division. Enrollment by audition. Concurrent registration in a technique class is required. Credit 1 unit.

A&S LA

Dance 479. Fundamentals of Sound Design

Same as Drama 479.

A&S LA

Dance 493. Senior Project

Specialized project in a selected area in dance. The student works individually under the supervision of a faculty member. Prerequisite: permission of the coordinator of the Dance Division. Credit variable, maximum 3 units.

Dance 499. Study for Honors

An honors thesis or performance and thesis project designed by the student, and supervised and assessed by a faculty committee. Prerequisites: senior standing, grade point of 3.5, and 3.5 in dance classes, and permission of the coordinator of the dance division. Credit variable, maximum 6 units.

Dance 500. Independent Work

Prerequisite: senior standing and permission of the coordinator of the dance division. Credit variable, maximum 10 units.

Drama

The Drama Division of the Performing Arts Department offers the student an extraordinary array of courses and stage opportunities in small, intimate settings with our faculty. Our courses are available to both the dedicated major or minor in Drama as well as the student simply interested in furthering his/her theater appreciation or taking a beginning acting or stagecraft class.

Courses in every conceivable aspect of theater practice and history, from acting, directing, movement, voice, and playwrighting, to costume and scenic design and technical theater are available for you. The PAD offers a multitude of classes on the history of the stage and performance, from ancient Greek drama through the Elizabethan to the most contemporary avant-garde performance art.

In Drama, you may choose an emphasis from three areas: acting; design and technical theater; and theater studies (academic emphasis). You may select a generalist major if you do not wish to specialize in one of these areas. For the generalist major, 38 units are required for completion. Required courses are Dance 106E, Drama 212E, Drama 213 or 227, Drama 228C, Drama 229C, Drama 240E, Drama 314, Drama 341, Drama 343, Drama 365C, and Drama 487. An additional 6 units of electives must also be taken. Students interested in emphasizing in either acting, design and technical theater, or theater studies should see the detailed descriptions that are available in the Performing Arts Department Handbook, which is updated annually. The minor requires 18 units, including 9 units from the Theater Culture Studies sequence and Introduction to Stagecraft.

Undergraduate Courses**Drama 200. Theater Projects**

Independent study. Students may contract with a faculty supervisor for credit for their work on theatrical productions or research. Contracts must be signed by the student, the faculty supervisor, and the coordinator of Drama 200 before the student's work on the project commences. Credit and grade option to be determined in each case. Credit variable, maximum 3 units.

Drama 2001. Acting

Independent study. Credit variable, maximum 3 units.

Drama 2002. Directing

Independent study. Credit variable, maximum 3 units.

Drama 2003. Technical Theater

Independent study. Credit variable, maximum 3 units.

Drama 2004. Voice, Speech

Independent study. Credit variable, maximum 3 units.

Drama 2005. Literature, Theory, Criticism

Independent study. Credit variable, maximum 3 units.

Drama 212E. Introduction to Theater Production

Same as Dance 212E.

An introductory study of the major elements involved with mounting a theatrical production. Topics range from scenic, costume, and lighting design to production organization, management, and procedures. Students are required to serve as a crew member on one departmental production and attend various events offered by both Edison Theatre and the Performing Arts Department. Same as Dance 212E. Credit 3 units.

A&S LA

Drama 2151. Introduction to Comparative Practice I

Credit 3 units.

Drama 216C. Introduction to Comparative Practice II: Politics in 20th-Century Theater

Credit 3 units.

A&S TH **FA** Lit

Drama 221. Topics in Theater: Introduction to American Musical Theater

Same as AMCS 221, Dance 223, Music 2210.

Students are taught basic interpretation of musical theater repertoire. The student learns to analyze and perform songs in regard to melody and musical form. Acting techniques are developed through lyric interpretation. Students also are introduced to basic audition practice and etiquette. Prerequisite: permission of instructor. \$25 lab fee. Credit 2 units.

A&S LA **FA** AH

Drama 222E. Introduction to Theater: The Magic of the Stage

Interdisciplinary course that introduces students to the art of the stage from a multitude of perspectives. Regardless of previous experience either on-stage or backstage, students are exposed to new elements of the theater's magic, including script analysis; theater history and architecture; acting; directing; playwrighting; scenic, lighting, sound and costume design; and reviewing. Students explore different periods, attend a variety of theatrical events in and around St. Louis as well as in Performing Arts, and meet with prominent directors, designers, reviewers, and playwrights to gain a unique, hands-on perspective into the world of the stage. This course must be taken in conjunction with Focus 215. Credit 3 units.

A&S LA

Drama 227. Playwriting

Same as E Comp 224.

A&S LA

Drama 228C. Theater Culture Studies I: Antiquity to Medieval

Same as Comp Lit 226C, E Lit 228C, Classics 228.

The first course in an interdisciplinary, four-semester sequence that examines Western and non-Western dramatic literature and theater history from its known origins to the present day. With attention to both primary historical documents and dramatic texts, this course examines ancient Near Eastern theater, Greek tragedy, classical comedy, classical Sanskrit theater, and medieval European theater. Credit 3 units.

A&S TH **FA** AH

Drama 229C. Theater Culture Studies II: From Renaissance to Romanticism

Same as E Lit 229C, Comp Lit 227C, Music 228.

The second course in an interdisciplinary, four-se-

mester sequence that examines Western and non-Western dramatic literature and theater history from its known origins to the present day. Course covers the theaters of the English Renaissance, the Spanish Golden Age, the French neoclassical period, the English restoration, the 18th century, and the German Romantic period and examines one non-Western theater, usually that of 16th-century China. Credit 3 units.
A&S TH FA AH

Drama 230. Topics in Theater

Explores a variety of special interest topics in theater not included in the Theater Culture Studies sequence. Consult the Course Listings. Credit 3 units.
A&S LA

Drama 233. Improvisation for the Actor

Work on improvisational games and techniques with the goal of using these techniques to enhance scripted and non-scripted performance on stage. Work based on sports, *commedia dell'arte*, and movement exercises. Prerequisite: Drama 240E. Credit 3 units.
A&S LA

Drama 235. Feminist Theater Survey

The course is a literature survey, designed to complement the current four-semester Theater Culture Studies series. During the course of the semester, students read a variety of Western plays written by women beginning in the Renaissance and continuing through to contemporary plays and performance art not treated in other courses. In addition to introducing these "new" works, students are encouraged to keep in mind canonical theatrical literature and the traditions from which it springs, in order to integrate the two (one aim of this course being the reclamation of women's works). Through readings, viewings, and discussion, students are encouraged to find their own position vis-à-vis "feminist" theatrical practice. As the class treats plays and performance texts, consideration is taken to ensure that the performative aspect of drama is not overlooked, as that would result in a mistreatment of the art form, but would also ignore the vast notion of "performance" itself in women's lives. Credit 3 units.
A&S TH FA Lit

Drama 237. The American Dream: History or Myth?

Same as E Lit 237.

This course examines the origins and history of "The American Dream" from its origins to the present day. What do we mean when we use this term? How does this phrase resonate and affect our politics, advertising, and especially the arts? Included in our discussion is the experience of immigration and assimilation into American society from other countries and cultures. Beginning with the implications of the image of America as a "brave new world" in European thought and philosophy (including Shakespeare's *The Tempest*), and the prescient ideas on our culture by de Tocqueville and others, we examine how the dream of success and wealth have been depicted and employed in the theater, fiction, cinema, and the visual arts. Among the texts we examine together in this course are: Fitzgerald's *The Great Gatsby*, Williams' *The Glass Menagerie*, Miller's *Death of a Salesman*, West's *Day of the Locust*, Lorraine Hansberry's *A Raisin in the Sun*, Albee's *The Zoo Story* and *The American Dream*, and John Guare's *The House of Blue Leaves*. We also consider modern painters whose work seems to have been intended as a commentary on the "dream," such as Edward Hopper and Andy Warhol, and cinematic innovators from Charlie Chaplin to Orson Welles and Francis Ford Coppola who have used "The American Dream" as significant elements in their work. Credit 3 units.
A&S TH

Drama 240E. Acting I

Improvisation, exercises, and beginning scene work designed to acquaint the student with the fundamentals of acting. No previous training or experience necessary. Six hours a week. Preference given to majors. Credit 3 units.
A&S LA

Drama 2503. Introduction to Performance Art *Same as F20 ART 2503.*

This course examines the history and rise of performance art as a genre in the United States and studies the style and content in the work of several solo performers. A large component of the class is devoted to writing exercises to develop a performance art script. Introduction to Performance Art II focuses on developing scripts more fully and the staging of completed scripts. Students are encouraged, but not required, to take both courses. Credit 3 units.
A&S LA

Drama 257. Dance Theater Production

Same as Dance 257.

A&S LA

Drama 296. Internship

Students may receive up to 3 units of credit for an approved internship with an organization where the primary objective is to obtain professional experience outside the classroom. Students must file a Learning Agreement with the Career Center, a faculty sponsor, and the site supervisor. This must be approved by all three constituencies before proceeding. A final written project is to be agreed upon between the student and faculty sponsor before work begins and will be evaluated by the faculty sponsor at the end of the internship. Credit variable, maximum 3 units.

Drama 300. Production Practicum

Practicum experience in technical theater. Positions such as stage manager, publicist, assistant designer for costumes, scenery, or lighting, or crew head of props, sound, and makeup design are available. Credit variable, maximum 2 units.

Drama 3011. History of African-American Theater

Same as AFAS 301.

A&S SD TH FA AH

Drama 304. Makeup for the Stage

Introduction to techniques for the alteration of the face through makeup to create convincing illusions of character. Individualized selection and personal application of makeup appropriate to the actor's face. Students are required to purchase a makeup kit. Credit 2 units.
A&S LA

Drama 307. Stage Costumes: Prehistoric to 1800

Same as Dance 307.

Basic presentation of costume design from conception through final renderings, development of drawing and painting techniques for the costume plate, and the history of stage costume in the principal periods and styles of drama from prehistoric periods through 1800. Credit 3 units.
A&S LA FA AH

Drama 3071. 19th- and 20th-Century Costume Design and History II

Same as F20 ART 3507.

Basic presentation of costume design from initial conception through final renderings. Development of drawing and painting techniques on design projects taken from plays set in the 19th and 20th centuries. History of costume and fashion silhouette is illuminated through slide and video presentation of primary and secondary source materials. Credit 3 units.
A&S TH FA AH

Drama 309. Stage Technology

Practical study of technical theater procedures and scene shop; production techniques. Course outline includes lectures, demonstrations of equipment, production assignments, and research-oriented project work. Prerequisite: Drama 212E, or permission of instructor. Credit 3 units.
A&S LA

Drama 310. Stage Lighting

Same as Dance 319.

Study of the aesthetics and technology of lighting design from the basic principles of designing with light through the execution of finished design projects. Prerequisite: Drama 212E, or permission of instructor. Credit 3 units.
A&S LA

Drama 311M. Scene Design

An introduction to the process of scene design, as it relates to aesthetics, dramatic literature, collaboration, and production. Projects involve design conceptualization, documentation, graphics, and realization. Prerequisite: Drama 212E or permission of instructor. Credit 3 units.
A&S LA

Drama 3131. Topics in English and American Literature

Drama 314. Voice-Speech Laboratory

Fundamentals of speech for the stage, approached through Kristin Linklater's technique of freeing the natural voice. Concentration on breath support, resonance, articulation, and speech as an expression of an individual's needs. Preference given to majors. Credit 3 units.
A&S LA

Drama 318C. The Renaissance: Crisis and New Beginnings

Same as Med-Ren 318C.

A&S TH

Drama 321. Topics in Theater

Same as Dance 323.

Explores a variety of special interest topics in theater not included in the Theater Culture Studies sequence. Consult the Course Listings. Credit 3 units.
A&S LA

Drama 3212. Topics in Theater

Same as French 3231.

Explores a variety of special interest topics in theater not included in the Theater Culture Studies sequence. Consult the Course Listings. Credit 3 units.
A&S TH

Drama 323. Topics in American Drama

Same as AMCS 3231, AMCS 3233.

A rotating topics course on various subjects relating to the history and theatrical practice of modern American drama. Credit 3 units.
A&S TH

Drama 329. Tragicomedy from Euripides to Beckett

Examples and theories of relatively "pure" tragedy and comedy; violations of genre purity from ancient Greece to 20th-century France to ancient Sanskrit drama. Among forms, authors, and phenomena treated: the ancient satyr play, Euripides, Kalidasa, the medieval cycles, Italian Renaissance tragicomedy, Shakespeare, Jacobean tragicomedy, Restoration tragicomedy, Chekhov, Ionesco, Beckett. Credit 3 units.
A&S TH FA Lit

Drama 331C. Tragedy

Same as Comp Lit 331C.

A&S TH FA Lit

Drama 332. Comedy

Same as Classics 386.

A&S TH FA SSP

Drama 338. Physical Theater: An Exploration of Viewpoints and Suzuki Training

In this course students study two very different but complementary styles of movement training. Developed by the Saratoga International Theater Institute, this method of actor training combines the improvisational exploration of time and space through “Viewpoints” with the rigid structure and physical demands of the Suzuki method. This combined approach is designed to develop heightened awareness and acute focus in the performer. In addition, it fosters greater impulsiveness and freedom in the moment while maintaining discipline and control. Students gain flexibility and strength and enhance their creative potential by balancing these seemingly opposing methods. Prerequisites: Drama 341 or Dance 106E. Credit 3 units.

A&S LA

Drama 340. Topics in Stage Movement

Exploration of a variety of theatrical and movement concepts with emphasis on process rather than product. Concentrates on developing the expressive flexibility of the body and linking the imaginative impulse with physical movement. Preliminary work in relaxation and efficient self-use. Prerequisite: Drama 240E or permission of instructor. Credit 3 units.

A&S LA

Drama 341. Acting II

Fundamental scene study using texts with emphasis on integration of voice and body and the playing of actions. Students are encouraged to precede this course with Drama 207C. Prerequisite: Drama 240E. Preference given to majors. Credit 3 units.

A&S LA

Drama 342. Acting III

Emphasis on characterization while working with a diversity of playwriting styles. Prerequisites: Drama 341, either Drama 207C or 208C, and permission of instructor. Credit 3 units.

A&S LA

Drama 343. Fundamentals of Directing

The process of play directing from the selection of a script through production. Prerequisites: Drama 212E and 240E and permission of instructor. Preference given to Drama majors. Credit 3 units.

A&S LA

Drama 347. Shakespeare Globe Program: Acting

This is a four-week summer intensive program in London where a select “company” of student actors from universities all over the country (including Washington University) study Shakespeare with a distinguished faculty member from Washington University and theater professionals and educators from the English theater—The Globe Theater and The Royal Shakespeare Company (RSC), to name just two. Actors study voice, movement, and Shakespeare’s verse and prose with leading professional actors and voice teachers. Textual analysis, historical context, and performance strategies for the Globe stage and other stages is considered. The student acting company applies learned scene study techniques in performance opportunities with student directors on a parallel program (see Drama 3471). Course culminates with performances on the Globe and Globe Centre Stages. Application process must initiate through the Performing Arts Department office. Credit 6 units.

A&S LA

Drama 3472. Shakespeare’s Birthplace and Workplace: the Bard and Contemporaries

With London and Stratford-upon-Avon as our classroom, students consider the life and work of Shakespeare and his contemporaries in compelling and authentic ways. Living and working in the shadow of the reconstructed Globe stage, students

study and witness performances of plays by Shakespeare, Marlowe, Webster, and Johnson, to name a few. Fully utilizing Globe Education’s resources, students gain a unique historical perspective on a life in the theater in Shakespeare’s day. Music, costumes, staging, and acting techniques of the time are explored. *Note:* The plays and playwrights we consider may vary from year to year depending in part on what is playing at the Globe and on the London and Stratford stages. *Note:* This course must be taken concurrently with Drama 347. Also, this course serves as a substitute for Drama 229C Theater Culture Studies II. Credit 3 units.

Drama 351. Intermediate Playwriting

Same as E Comp 351.

This is a workshop for the exploration and development of theatrical text. Prerequisites: Drama 227, or students must submit a writing sample (not necessarily a dramatic text) and interview with the instructor. Credit 3 units.

A&S LA FA Lit

Drama 3523. Topics in Literature

Same as E Lit 3522.

A&S TH FA Lit

Drama 355. Masks and Clowning: Roots of Comedy

Practice in developing the physical art of comedy; movement with masks, clownwork, character mask building. No performance experience necessary. Prerequisite: Drama 240E. Credit 3 units.

A&S LA

Drama 365C. Theater Culture Studies III: Melodrama to Modernism

Same as IAS 365, Comp Lit 360C, E Lit 363C.

The third course in an interdisciplinary, four-semester sequence that examines Western and non-Western dramatic literature and theater history from its known origins to the present day. This class traces the origins of modern theater, moving from Romanticism at the beginning of the 19th century, through melodrama and other popular mid-century theatricals to the rise of modernist drama in Western Europe and the United States from about 1880–1930. We consider the rise of realism in playwrights such as Ibsen, Chekhov, Crothers, and Shaw; we also examine theatrical experimentation in the works of Bonner, Pirandello, Treadwell, O’Neill, and Brecht. Emphasis is placed on key developments in history, art, and literature, as well as on expanding the traditional canon with plays by women and minority playwrights. Credit 3 units.

A&S TH FA Lit SSP

Drama 367. Introduction to Drafting for the Theater

This course provides the student with a basic understanding of all of the various types of technical drawings needed to successfully execute a scenic design. Throughout the course the student masters all the technical and aesthetic skills needed to produce clean and effective draftings for the theater. In order to successfully complete this class, the student is required to purchase a drafting board and related drafting materials. Credit variable, maximum 3 units.

A&S LA

Drama 368. Black Theater Workshop III

Same as AFAS 302, Drama 368, AFAS 302.

A performance-oriented course that explores the black experience through acting, directing, and playwriting. Students do short performances during the semester. They also are required to attend three to five plays. Each student must participate in a final performance in lieu of a written final examination. Credit 3 units.

A&S LA SD

Drama 371. Introduction to Play Analysis

An introduction to the fundamental techniques of analyzing dramatic texts. Focus is on the student’s ability to describe textual elements and their relationships to each other as well as on strategies for writing critically about drama. There are no prerequisites for this course that is intended to provide students with portable tools to examine and analyze theatrical works, in both written forms and as they are performed. In the course of the semester, students learn about and use a variety of dramaturgical methods and are encouraged to create their own methods tailored to the work they are analyzing. This course is especially useful to students interested in pursuing acting, directing, playwriting, screenwriting, theatrical design, and dramatic criticism. Credit 3 units.

A&S TH

Drama 393. The Tragic Muse

Same as Classics 393.

A&S TH

Drama 395C. Shakespeare

Same as E Lit 395C.

A&S TH FA Lit

Drama 400. Theatrical Rendering for Scenery

An exploration of media and rendering techniques used for presentation of design ideas in scenery. A variety of stage sets, still lifes, and figure drawing are rendered during a two-hour studio format with some additional studio time required. Materials to be provided by students. Credit 3 units.

A&S LA

Drama 403. Dramaturgical Workshop

Same as E Comp 403.

Laboratory course that investigates the increasingly nontraditional structure of theater in contemporary American drama. Plays read, analyzed, and explored in class from the point of view of the future writer, actor, director, designer, critic, and enlightened audience, while adhering to the playwright’s vision. Prerequisite: Drama 343. Credit 3 units.

A&S LA

Drama 4031. Black and White in American Drama

Same as E Lit 403.

A&S TH FA Lit

Drama 404. Topics for Writers: Beckett

Same as E Lit 404.

A&S LA FA Lit

Drama 409. The Modernist Revolution in the Arts

This course examines the remarkably influential period between 1890–1920 in European and American literature and the arts known as Modernism. Our investigation focuses on major literary and artistic movements, including Naturalism, Impressionism, Symbolism, Dada, Surrealism, Futurism, and Expressionism. We examine in detail those literary manifestoes that help to illuminate the periods under discussion, as well as the individual works themselves. In addition, we investigate key figures who resisted being identified with any literary or artistic movement or manifesto. Central to our approach in the course is an interdisciplinary perspective. This is particularly important in cases such as Surrealism and Expressionism, which feature many artists who were themselves “doppelbegabungen” (doubly gifted) and for whom the specific medium of artistic expression was less important than what was being expressed. Among the key figures whose work is discussed are: Ibsen, Strindberg, Zola, Chekhov, Stein, Hemingway, Artaud, Kafka, Brecht, Joyce, Kokoschka, Schiele, Kandinsky, and Picasso. Credit 3 units.

A&S LA

Drama 410. Advanced Stage Lighting*Same as Dance 414.*

An advanced-level continuation of Drama 310. Emphasis is placed on design aesthetics and their application in a laboratory setting. Students explore color theory, lightboard programming, and design analyses as well as execute a variety of finished projects. These projects cover a wide range of production styles and performance venues. Prerequisite: permission of instructor. Credit 3 units.
A&S LA

Drama 411. Topics in Technical Theater

Introductory drawing, watercolor, and illustration techniques for the theatrical designer. Projects include presentation styling, model-making, and portfolio preparation. Prerequisite: permission of instructor. Credit 3 units.
A&S LA

Drama 412. Advanced Practicum in Technical Theater

Independent Study. Intensive practical experience in scenic design building and painting; lighting design and installation; costume design, coordination, and construction; makeup; and audio production. Prerequisites: Drama 212E, credits on at least two productions, and permission of staff. Credit variable, maximum 3 units.
A&S LA

Drama 412I. Advanced Practicum in Technical Theater: Scene Painting

Exploration of the skills and traditions of theatrical scene painting in a laboratory setting. Projects involve color theory, basic surface treatment techniques, representational depiction, and advanced problems. Realized paint work on Performing Arts production is part of the course. Prerequisite: permission of instructor. Credit 3 units.
A&S LA

Drama 413. Costume Rendering and Design

An exploration of media and rendering techniques used in producing an effective costume design. Basic figure drawing, proportion, color, concepts, exaggeration, and period style. Drawing and painting materials to be provided by student. Credit 3 units.
A&S LA

Drama 416. Period Style and Design History*Same as F20 ART 4507.*

Examination of period styles as they relate to theatrical design and history. Study of architecture, furniture, props, and costumes from Greek to contemporary periods. Prerequisite: Drama 212E. Credit 3 units.
A&S TH FA AH

Drama 419. Technical Direction: Stage Rigging

Practicum experience in the skills of technical direction: budgeting, reading blueprints, stage rigging, time management, problem solving. Prerequisite: Drama 212E, or permission of instructor. Credit 3 units.
A&S LA

Drama 421. Costume Construction and Design

Practical techniques in theatrical costume construction, including patternmaking, cutting and draping, and execution of design concepts. Research and design projects culminate in finished period garments and related accessories. Topics to be explored include corsetry and foundation garments, millinery, maskmaking, and dyeing and painting. Prerequisite: Drama 307 or permission of instructor. Credit 3 units.
A&S LA

Drama 431. English Drama Exclusive of Shakespeare to 1642*Same as E Lit 431.***A&S TH FA Lit****Drama 432. Topics in Renaissance Drama***Same as E Lit 432.***A&S TH FA Lit****Drama 435. Expressionism in the Arts**

A close study of expressionism as an international phenomenon in the arts, from the anti-Naturalist movements of the 1890s to Hitler's condemnation of Expressionism as decadent. The evolution of Expressionist theater from Wedekind to Toller and Kaiser; such composers as Schoenberg and Berg; in the visual arts, such groups as Der blaue Reiter and Die Brücke, such independents as Kokoschka; in cinema, such figures as Pabst, Murnau, Von Sternberg, Lang. Prerequisite: Drama 208E, Drama 336 or permission of instructor. Credit 3 units.

A&S TH FA AH**Drama 436. Seminar in Comparative Drama***Same as Comp Lit 436.***A&S TH FA Lit****Drama 438. American Feminism and the Theater 1960 to the Present***Same as AMCS 438, WGS 438.*

This course offers an introductory study of the relationship between feminism and theater over the past 30 years in the United States. We look at writers, performers, directors, scholars, and especially at playwrights who embody women as the subject of their experiences or who use the performance of gender to intervene, subvert, or challenge assumptions concerning race, class, ethnicity, and sexual preference. Assignments include oral reports, active class discussions, journals, brief dramatic writing exercises, and field trips to see performances. Prerequisite: sophomore standing and permission of instructor. Credit 3 units.

A&S TH FA AH**Drama 438I. American Feminism and the Theater, 1900-1960**

While the study of contemporary American feminism and theater is alive and well, the study of feminist playwriting in the United States before 1960 has been slow to develop. At first hampered by the assumption that feminist playwrights, like feminist activists, had lost their "edge" during the quietism between the first and second waves of the women's movement, studies are now advancing these dramatists as significant contributors to a tradition of American feminist theater. In a time of upheaval marked by two world wars, suffrage, and a global depression, women sought to grasp the full implications of their changing place in society. This feminist drama reflects the excitement and fear accompanying such change, and answers those media stereotypes designed to keep women in their place. We spend the bulk of the course focusing on the women who wrote at a time usually only identified with playwrights such as O'Neill, Williams, and Miller. Although these women enjoyed varying degrees of success as authors, actresses, and directors, they all made it their mission to provide early feminist challenges to preconceived notions of gender, class, race, and sexuality. They laid the groundwork for the feminist interventions in subject matter and form that would explode onto the theater scene after 1960, and include the playwrights of our study: Rachel Crothers, Alice Gerstenberg, Susan Glaspell, Sophie Treadwell, Zoe Akins, Lillian Hellman, Mae West, Dorothy Parker, Georgia Douglas Johnson, Marita Bonner, Rose Franken, Zona Gale, Gertrude Stein, Clare Boothe Luce, Zora Neal Hurston, May Miller, and others. Credit 3 units.
A&S SD TH

Drama 440. Acting IV

Emphasis on scene study from classical plays. Preparation for professional and graduate school auditions also stressed. Prerequisites: either Drama 335 or 336, Drama 342, and Dance 101E.

Admission by audition; see chair of department for details. Credit 3 units.

A&S LA**Drama 441. Seminar: Styles in Theatrical Performance**

Application of historical, literary, and critical scholarship to the mounting of a production. Prerequisite: one semester of acting, directing, or theatrical design at the 300 level, or permission of instructor. Credit 3 units.

A&S LA**Drama 444. Directing II: Coaching the Actor**

Further study in the fundamentals of directing. Emphasis on the director's work with actors, designers, and a realized metaphorical concept. Prerequisites: Drama 343 and permission of instructor. Credit 3 units.

A&S LA**Drama 445. Seminar***Same as AMCS 444, MLA 445.*

Rotating upper-level seminar. Credit 3 units.

A&S LA**Drama 446. Meta-Theater: Theater That Reflects Itself**

The notion that works may be self-reflection is a familiar one to the student of the postmodern in the arts. Nevertheless, the concept is not a new one and may be found frequently in the history of the theater from the Elizabethan to the present day. In this course we identify and examine the history and significance of the term "Meta theater" in a number of important dramatic works from Shakespeare to Tom Stoppard. Along the way we consider examples of the "play-within-the-play" such as *Hamlet* and *A Midsummer Night's Dream*, works that use the theater itself and the art of the stage as a focal point (Pirandello's *Six Characters*, Stoppard's *Rosencrantz and Guildenstern Are Dead*, Michael Frayn's *Noises Off*, Ronald Harwood's *The Dresser*, David Mamet's *A Life in the Theater*), and plays that focus their energies on the act of scripting one's life such as Sam Shepard's *True West* or Peter Shaffer's *Gift of the Gorgon*. In addition to the above, our investigation also considers examples from other literary genres and especially the visual arts, which are explicitly self-referential in nature. Prerequisite: one 300-level drama literature course or permission of the instructor. Credit 3 units.

A&S TH FA Lit**Drama 447. Seminar in Theater History***Same as Comp Lit 425.***A&S TH FA Lit****Drama 448. The History of Theater Design**

Survey course covering the history of the performance space and the scenic design elements contained within that space. The visual elements and theater architecture of each period are examined in relationship to the art and technology of the time. Prerequisites: Drama 207C or 208C, and Drama 212E. Credit 3 units.

A&S TH FA AH**Drama 450. Advanced Scene Design**

Advanced projects in scene design including drafting, rendering, model building, and conception. Prerequisite: Drama 311M or permission of instructor. Credit 3 units.

A&S LA**Drama 451. Topics in Period Style: Baroque Opera and Neoclassical Style**

An exploration of the dynamic interplay between high Baroque culture and the perceived style of the ancient Greeks and Romans. Primary sources used are paintings, sculpture and renderings for Baroque operas, as well as rare artifacts that exist from that time as these sources relate to classical evidence extant in that period. Secondary sources

are journal articles and records of fully staged productions of intervening years. Primary interest is retracing the thought processes of the designers of Baroque opera. Focus is on Purcell's *Dido and Aeneas*, looking at the libretto and its relationship to source texts both ancient and contemporary and also its place within the cultural history of the theater. Projects include: in-class presentations and a research paper or fully realized design project. Credit 3 units.

A&S LA FA AH

Drama 453. American Drama

Same as E Lit 4331, AMCS 4501, AMCS 4501, E Lit 4533.

Topics in American Drama. Credit 3 units.

A&S TH FA Lit

Drama 455. Practicum in Arts Management

Assigned work and projects under faculty supervision in Washington University's Edison Theatre or off-campus cooperating institutions. Prerequisite: permission of instructor. Credit variable, maximum 3 units.

Drama 456. A Madman in the Theater: The History of Insanity on Stage from Sophocles to Shaffer

Same as E Lit 390.

The image of the madman and the theme of insanity have been extraordinarily captivating to theater artists from the Greeks to the present. In this course we consider some of the most remarkable examples from the classical period, including Sophocles' *Ajax* and Euripides' *Medea* and *The Bacchae*, and the Renaissance (*Hamlet*, *Othello*, *The Spanish Tragedy*, *The Duchess of Malfi*, *Life is a Dream*). We investigate these works both for what they tell us about the image of the madman in the historical period and culture in which they were written as well as in order to closely examine the texts themselves. We also examine plays from the 19th and 20th centuries, including Georg Büchner's *Woyzeck*, Eugene O'Neill's *Emperor Jones*, Jean Anouilh's *The Madwoman of Chaillot*, Arthur Miller's *Death of a Salesman*, and Peter Shaffer's *Equus*. Finally, the course makes extensive use of the Performing Arts Department's production of Peter Weiss' extraordinary work *Marat/Sade* and incorporates theoretical writings such as Michael Foucault's *Madness and Civilization* into discussions. Credit 3 units.

A&S TH FA Lit

Drama 459. The Filmed Stage Play

Close textual analyses of stage plays and their film adaptations, examining structural parameters such as space, time, point of view, spectator position, and performance in the two art forms. Prerequisite: permission of the instructor. Credit 3 units.

A&S TH

Drama 464. Drama and Ritual

A study of the many relationships between drama and ritual from classical antiquity to the 20th century, concentrating on the Western tradition but treating some non-Western paradigms as well. Examines theories of ritual such as those of Arnold van Gennep and Victor Turner and performance theory that emphasizes the element of ritual, such as that of Richard Schechner. Of concern are dramatic elements in rituals (for example, Turner's study of Ndembu rituals); the function of drama as civic and/or religious ritual (such as in ancient Greece and Medieval Europe); the incorporation of successful and "maimed" rituals into drama (such as Aeschylus, Shakespeare); and 20th-century attempts to reinfuse drama with elements of ritual (Artaud, Grotowski, Schechner, Soyinka). Credit 3 units.

A&S TH FA AH Lit

Drama 465. The Chinese Theater

Same as Chinese 467.

A&S CD SD TH FA AH

Drama 466. From Shakespeare to Shepard: Autobiography and the Theater

From Shakespeare's *The Tempest* to contemporary performance art, some plays are autobiographical or confessional in nature. Controversial examples of dramatizing the self on stage: Ibsen (*The Master Builder*), Strindberg (*The Dance of Death*), Chekhov (*Uncle Vanya*), O'Neill (*Long Day's Journey Into Night*), Williams (*The Glass Menagerie*), Miller (*After the Fall*); contemporary works by Amiri Baraka, Brian Friel, Sam Shepard, and Wendy Wasserstein; performance artists/monologists such as Karen Finley or Spalding Gray. Prerequisite: Drama 207E or 208E. Credit 3 units.

A&S TH FA Lit

Drama 469. Topics in Shakespearean Production

Same as Med-Ren 4691, E Lit 4969.

This course examines Shakespeare's comedies in performance. Combining scene work and production history, students gain access to the world of the comedies from both a hands-on, theoretical, and historical perspective. Prerequisites: Drama 395C or permission of instructor. Credit 3 units.

A&S LA

Drama 471. Millinery Design and Construction

Same as F20 Art 424F.

A practical course exploring the basic techniques and different methods of constructing hats and accessories. Students work with a variety of materials including buckram, straw, felt, and wire that they purchase. Research and design projects culminate in the construction of several projects in class. Prerequisite: Drama 307 or 421 or permission of instructor. Credit 3 units.

A&S LA

Drama 473. Advanced Playwriting

Same as E Comp 4731.

This course is for writers with writing experience, but not necessarily experience in playwriting. The course explores the relationship between the writer and the page. Exercises dispel any lingering doctrine that presupposes a certain style of writing. Craft enters the course through writing exercises and games. A large percentage of the class is spent writing, the remainder of the time sharing. The informal moments between look at the process beyond the first draft—i.e., the maintaining of "the work" through rewrites, developmental readings, workshops, productions, agents, and critics. Credit 3 units.

A&S LA

Drama 474. Acting Theories

This course explores in depth the major theoretical texts on acting and performance theory. Pertinent philosophical texts, dramatic theories, acting systems, and methodologies are studied. The survey operates chronologically from early documents on acting (Greek, Roman, Italian Renaissance) through to modern and contemporary documents that inform acting and acting training today (Stanislavsky, Brecht, Grotowski, Meisner, Spolin, Suzuki). Methodologies and practices of select major stage actors are explored as well. In some cases, directing theories that have had major influence on acting theory are examined. Credit 3 units.

A&S TH

Drama 478. The Eye of the Mask: A Multicultural History of the Theater through Mask-Making and Design

An exploration of the history of masks used in the theater. Topics include drama of ancient Greece, the ancient No theater of Japan, the Italian theater of *commedia dell'arte*, the dance drama of Bali,

the Venetian and Mardi Gras Carnival celebrations, and ritual and ceremonial masks of other cultures: Africa, Latin America, and Asia, using the instructor's extensive collection of masks as primary research subjects. Projects include an in-class presentation and research paper with three to five fully realized mask designs to be constructed within class and at an additional lab time to be discussed on the first day. Credit 3 units.

A&S TH

Drama 479. Fundamentals of Sound Design

Same as Dance 479.

Encompassing both creative and technical aspects of sound in the performing arts, the course gives theoretical knowledge of, and practical experience in the following areas: fundamental rules of physics and electronics related to sound, use of standard digital recording studio equipment, "training" of the ear, and basic techniques of sound montage. Students are expected to participate in a variety of conceptual and research-oriented exercises as well as complete several lab projects. Sound-related work on Performing Arts Department productions may be required. Prerequisite: Drama 212 and permission of instructor. Credit 3 units.

A&S LA

Drama 480. Screenwriting

Same as E Lit 4801, E Comp 4801.

Examination of essentials for the development of a good screenplay. Story construction, developing a workable premise, creating dimensional characters, dramatic conflict, exposition, backstory, subplots, "high concept" formulas, and genres are studied in order to create the "blueprint" for telling a story with pictures. Prerequisite: Drama 351 or permission of instructor. Credit 3 units.

A&S LA

Drama 486. The Theater and Politics: The Politics of War

This course examines political perspectives on war as seen on the stage from the Greeks to the present day. Beginning with masterpieces such as Aeschylus' tragedy *Agamemnon* and Aristophanes' satirical comedy *Lysistrata*, we consider the political strategies of classical Greek drama. Turning to modern approaches to the subject, we move from Shakespeare (*Troilus and Cressida*, *Coriolanus*) through Brecht (*Mother Courage*) to consider the dramatists' political perspective and its relation to theatrical form. Asking questions about the relationship between art and politics, we consider whether we are entitled to use the same standards in evaluating political theater as we would in discussing other, less engaged works of art. We discuss contemporary political theater in the United States and abroad, including playwright David Rabe's trilogy on the Vietnam war. Finally, the course examines the Arab-Israeli conflict. Credit 3 units.

A&S TH

Drama 487. Theater Culture Studies Seminar

Same as AMCS 486.

Rotating upper-level topics course. Topics come from Theater Culture Studies sequence. Credit 3 units.

A&S TH WI FA AH

Drama 489. The Battle of the Sexes: Sexual Conflict on Stage from Aeschylus to Albee

Same as WGS 489.

Recently, the issue of sexual equality has come back into the news with a vengeance when former Harvard University president, Lawrence H. Summers suggested that there are innate, measurable differences between the sexes. However, the firestorm that followed Summers' "transgression" is not new. Playwrights from ancient Greece to the present day have explored the question of sexual difference in plays from *Agamemnon* to *Who's*

Afraid of Virginia Woolf? When Euripides' *Medea* argues that she would go to battle three times rather than give birth to a single child, or Aristophanes' *Lysistrata* advocates putting a stop to war by having women of Athens deny their husbands sex, they are commenting on questions that have preoccupied us for thousands of years. In this course, we trace the origins and history of sexual conflict through the ages, in works as controversial and revolutionary as Shakespeare's *The Taming of the Shrew* and Ibsen's *A Doll's House*. To what extent have artists in the past endorsed or taken issue with the sexual and societal norms of their ages? To what extent have these and other artists tried to alter our preconceptions in their plays? By examining a series of dramatic texts from different historical periods, we ask ourselves how perceptions have evolved over time, and how artists have historically responded to this age-old question. Credit 3 units.

A&S TH

Drama 493. Senior Project

Specialized study in a selected area in drama. Required of all drama majors not taking Drama 499. Prerequisite: 15 units of advanced work in drama at the 300- or 400-level. Credit 3 units.

Drama 496. Shakespeare Advanced Course *Same as E Lit 496.*

A&S TH FA Lit

Drama 499. Study for Honors

Prerequisites: Senior standing, a cumulative and a major GPA of 3.5 and permission of the chair of the Performing Arts Department. Credit variable, maximum 6 units.

Drama 500. Independent Work

Prerequisite: permission of the department. Credit to be determined in each case. Credit variable, maximum 6 units.

Philosophy

Chair

Mark Rollins
Ph.D., Columbia University

Professors

José Luis Bermúdez
Ph.D., Cambridge University

Dennis DesChene
Ph.D., Stanford University

Marilyn Friedman
Ph.D., University of Western Ontario

Roger Gibson
Ph.D., University of Missouri

John Heil
Ph.D., Vanderbilt University

Larry M. May
Ph.D., New School for Social Research
J.D., Washington University

Stanley L. Paulson
J.D., Harvard University
Ph.D., University of Wisconsin

Joseph S. Ullian
Ph.D., Harvard University

Associate Professors

Eric Brown
Ph.D., University of Chicago

John Doris
Ph.D., University of Michigan

J. Claude Evans
Ph.D., State University of New York–Stony Brook

Clare Palmer
Ph.D., Oxford University

Christopher Wellman
Ph.D., University of Arizona

Assistant Professors

Anne Margaret Baxley
Ph.D., University of California – San Diego

Carl Craver
Ph.D., University of Pittsburgh

Brett Hyde
Ph.D., Rutgers University

Philip Robbins
Ph.D., University of Chicago

Gillian Russell
Ph.D., Princeton University

Adjunct Professors

John Bruer
Ph.D., Rockefeller University

Linda J. Nicholson
Susan E. and William P. Stiritz
Distinguished Professor
of Women's Studies
Ph.D., Brandeis University

Professors Emeriti

Robert B. Barrett, Jr.
Ph.D., Johns Hopkins University

William H. Gass

David May Distinguished University
Professor Emeritus in the Humanities
Ph.D., Cornell University

Lucian W. Krukowski
Ph.D., Washington University

Jerome P. Schiller
Ph.D., Harvard University

Alfred J. Stenner
Ph.D., Michigan State University

Joyce Trebilcot
Ph.D., University of California–Santa
Barbara

Richard A. Watson
Ph.D., University of Iowa

Carl P. Wellman
Hortense and Tobias Lewin Distinguished
University Professor Emeritus in the
Humanities
Ph.D., Harvard University

The word “philosophy” derives from root words that mean “love of wisdom.” Philosophy deals with central questions of human life: *What is truth? How should I live? How should I treat others? What counts as human knowledge? How is the mind related to the body? What is a just society?* Issues such as these are basic to the ways in which we think about ourselves and our world. The search for answers to these sorts of questions is the search for wisdom. Courses in philosophy focus on the writings of great thinkers, past and present, who have devoted their attention to these and related problems. Because philosophers have shaped many of the central ideas on which Western civilization is based, the study of philosophy is essential to a well-rounded liberal arts education.

The range of philosophy is extraordinarily broad. Many modern fields of study originated in philosophy, and philosophy courses are often concerned with fundamental aspects of other fields. For example, philosophy of mind addresses issues in psychology; philosophy of science addresses issues in such fields as biology, physics, and economics; and ethics and political philosophy address issues in political science, in women and gender studies, and in legal studies.

A philosophy major is an excellent preparation for a wide variety of careers. The methods of philosophy emphasize the analysis of concepts and problems, careful reading, clear writing, cogent argumentation, and appreciation of a wide range of perspectives—skills that are crucial in many professions and organizations.

For more information about majoring or minoring in philosophy, consult the departmental Web site:

artsci.wustl.edu/~philos/undergrad.

The Major: Majors must complete 27 units of course work in philosophy, of which at least 6 units must be at the 400 level and an additional 15 units must be at the 300 level or above. Majors are encouraged to take more than this minimum number of courses, especially if they are considering graduate work in philosophy. Majors and minors are encouraged to fulfill the Writing-Intensive

requirement by taking Phil 390 (Philosophical Writing). All majors are required to complete a capstone experience in philosophy, either an Honors thesis (Phil 499) or the Philosophy Capstone Course (Phil 3991). Majors who are planning to do graduate work in philosophy should attain at least reading proficiency in German, Greek, Latin, or French.

Majors must complete at least one Core Course in each of the three areas below. Students who do not take Phil 390 will be required to take one additional Core Course. The Core Courses, by area, are:

1. *Contemporary/analytic philosophy*: Phil 301G, 306G, 307, 315, 321G.
2. *History of Philosophy*: Phil 347C, 349C, 357C.
3. *Value theory*: Phil 331F, 339F, 340F, 345F, 346.

On occasion it may be appropriate to substitute a 400-level course in one of these areas for a 300-level core course; individual petitions for substitutions will be considered by the undergraduate director. Generally, for a course to count either as “core” or as partly satisfying the requirement for 6 units at the 400 level, it must be home-based in philosophy. At most 3 units of credit in Phil 499 or 500 can be counted toward the required 6 units of 400-level course work.

The Minor: To earn a minor in philosophy, students are required to complete 18 units in philosophy, including at least 12 units at the 300 level or above. These 12 units must include at least one Core Course in each of the three designated areas listed above. Many philosophy courses can also be taken as part of a History and Philosophy of Science minor or a Legal Studies minor.

Senior Honors: Eligible majors are encouraged to work toward Senior Honors. To qualify, students must have the agreement of a faculty member to serve as thesis adviser. In addition, they must have, at the end of the junior year, at least a 3.4 GPA in the major, a 3.5 GPA in advanced philosophy courses (300-level and above), and a 3.4 overall GPA. For important additional information regarding Senior Honors, consult the Web page.

Study Abroad: Students can pursue the philosophy major while studying abroad. The department particularly recommends Utrecht University, University College London, and the University of Sussex. Information about study abroad and about specific overseas programs is available from the departmental Web page and the study abroad adviser.

Undergraduate Courses

Phil 100G. Logic and Critical Analysis

Same as Lw St 105G.

Introduction to the elementary tools of logic required for constructing and critically evaluating arguments and the claims they support. Topics include: the nature of an argument; argument structure; how arguments can fail both in structure and in content; formal and informal fallacies; propositional logic and predicate calculus; and critical analysis of rhetorical strategies for presenting arguments. Students are encouraged to develop critical reasoning skills that can be widely applied. Credit 3 units.

A&S LA QA FA SSP

Phil 108. Introduction to Political Theory II

Same as Pol Sci 107.

A&S SS

Phil 120F. Problems in Philosophy

Introduction to philosophical methods and concepts through an investigation of major issues in Western philosophy such as: what counts as knowledge; truth and belief; the existence of God; the mind-body problem; materialism and idealism; moral theory and concepts of justice. A range of historical and contemporary views on these issues are considered. The aim of the course is to prepare students to think and write about philosophical problems on their own. Credit 3 units.

A&S TH FA SSP

Phil 125C. Great Philosophers

Same as Phil 125.

In this course we focus on some of the most important texts in the history of Western philosophy in order to discuss a wide range of central philosophical problems. We typically consider, for example, the existence of God, the justification of claims to knowledge, and the requirements of a good human life, including the demands of morality. Among the philosophers most likely to be studied are Plato, Aristotle, Descartes, Hume, Kant, Marx, Nietzsche, and Wittgenstein. Our goal is not just to appreciate the genius of some great philosophers but also to grapple with the current philosophical problems they have bequeathed to us. Credit 3 units.

A&S TH FA SSP

Phil 127F. Introduction to Philosophy of Religion

There is a fundamental tension between Western philosophical thought, which emphasizes the import and efficacy of reasoned argument, and religious traditions, which stress the primacy of faith over reason. This conflict is the focus of this course. Topics to be considered include: the existence of God; atheism and agnosticism; the immortality of the soul; freedom of the will; the possibility of miracles; and, more generally, the nature of religious knowledge and the significance of religious diversity. Credit 3 units.

A&S TH FA SSP

Phil 131F. Present Moral Problems

Same as Lw St 131F.

An investigation of a range of contemporary moral issues and controversies that draws on philosophical ethics and culturewide moral considerations. Topics may include: racism, world hunger, war and terrorism, the distribution of income and wealth, gender discrimination, pornography, lesbian and gay rights, abortion, euthanasia, and capital punishment. The aim of the course is to present diverse points of view regarding these topics and to provide conceptual and theoretical tools that enable the student to make headway in thinking carefully and critically about the issues. Credit 3 units.

A&S TH FA SSP

Phil 208F. Introduction to Philosophy of Cognitive Science

This course introduces key philosophical issues raised by the advent of cognitive scientific studies of mind. Topics may include: mental imagery concepts, rationality, consciousness and emotion, language and thought, machine intelligence, robotics, free will. Credit 3 units.

A&S TH FA SSP

Phil 224. East Asian Philosophies

Credit 3 units.

A&S TH FA AH

Phil 233F. Biomedical Ethics

Same as AMCS 233, Lw St 233F.

A critical examination, in the light of contemporary moral disagreements and traditional ethical

theories, of some of the moral issues arising out of medical practice and experimentation in our society. Issues that might be discussed include euthanasia, genetic engineering, organ transplants, medical malpractice, the allocation of medical resources, and the rights of the patient. Credit 3 units.

A&S TH FA SSP

Phil 234F. Business Ethics

Study of the nature and justification of economic systems, business organizations, and business practices. Focus on contemporary business and the ideology it embodies. Discussion of moral problems arising in business includes both the analysis of structural factors that cause them and the evaluation of courses of action that might resolve them. Credit 3 units.

A&S TH FA SSP

Phil 235F. Introduction to Environmental Ethics

Same as Phil 2350, AMCS 235, Lw St 235F, EnSt 335F.

A general survey of current issues in environmental ethics, focusing on problems such as the obligation to future generations, protection of endangered species, animal rights, problems of energy and pollution, wilderness, global justice, and business obligations. Students also learn some ethical and political theory. Credit 3 units.

A&S TH FA SSP

Phil 237F. Introduction to Aesthetics

Study of characteristic problems in aesthetics and the philosophy of art, e.g., the nature of aesthetic entities, of aesthetic experience, and of individual differences in the various arts. Primary emphasis on solutions various theories offer to these problems. Credit 3 units.

A&S TH FA AH SSP

Phil 299. Internship in Philosophy

Students receive credit for a faculty-directed and approved internship. Registration requires completion of the Learning Agreement, which is obtained from the Career Center and must be filled out and signed by the Career Center, the site supervisor, and the faculty sponsor prior to beginning internship work. Credit should correspond to actual time spent in work activities, e.g., 8 to 10 hours a week for 13 or 14 weeks to receive 3 units of credit; 1 or 2 credits for fewer hours. Credit variable, maximum 3 units.

FA SSP

Phil 300. Models of Social Science

Same as STA 300.

A&S SS FA SSP

Phil 301G. Symbolic Logic

Same as Ling 301G, PNP 301.

In this course students learn notation that reflects the building blocks of deductive reasoning and facilitates its study. Sentential calculus and quantification theory are developed, emphasizing both their formal properties and their application to arguments. The central concept is validity. Some theoretical questions are considered; the completeness of quantification theory is established. Credit 3 units.

A&S LA FA SSP

Phil 306G. Philosophy of Language

Same as PNP 306, Ling 306G.

A survey of major philosophical problems concerning meaning, reference, and truth as they have been addressed within the analytic tradition. Readings that represent diverse positions on these focal issues are selected from the work of leading philosophers in the field, for example: Frege, Russell, Wittgenstein, Davidson, Quine, Kripke, and Putnam. Students are encouraged to engage critically the ideas and arguments presented, and to develop and defend their own views on the core

topics. Prerequisite: one course in Philosophy at the 100- or 200-level, or permission of the instructor. Credit 3 units.

A&S LA FA SSP

Phil 307. Metaphysics and Epistemology

Same as PNP 307.

An introduction to the philosophical study of the nature of reality (metaphysics) and of human knowledge (epistemology) that relies on techniques of contemporary analytic philosophy. Metaphysical issues may include: the problem of universals, the nature of necessity, and the mind-body problem. Epistemological issues may include: correspondence and coherence theories of truth, the quest for certainty, and the nature of skepticism. Prerequisite: one course in Philosophy at the 100- or 200-level, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 310. Contemporary Jewish Thought

Same as JNE 310.

A&S TH FA Lit SSP

Phil 310I. Topics in Philosophy of Religion

Same as Re St 310I.

A&S TH

Phil 315. Philosophy of Mind

Same as Phil 315, PNP 315.

An introduction to philosophical analyses of the nature of mind, especially those developed by contemporary philosophers. The focus is on questions such as the following: What is a mind? How does it relate to a person's brain? How does it relate to a person's body and the external world? Can a mind exist in a very different kind of body (e.g., a computer or a robot)? Does thinking require a language-like code? If so, can non-linguistic species think? What is it to have a mental image or to experience pain? Prerequisite: one course in Philosophy at the 100- or 200-level, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 316. Mind and Morals

Same as PNP 316.

This course explores a number of issues at the intersection of ethics and cognitive science. Possible topics include: Are we rational? Do we know our own thoughts and motivations? Can one believe that one ought to do something without being motivated to do it? Do emotions impair or enhance our ability to reason? How do moral beliefs develop through childhood? Are traits such as intelligence and character unchangeable, and what implications follow if they are (or are not)? Does retaining my identity over time require having the same mind, and, if so, am I the same person now as I was as a child? Are non-human animals worthy of moral consideration? If brain activity is determined by causal laws, can we have free will? Prerequisite: one course in Philosophy at the 100- or 200-level, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 321G. Philosophy of Science

Same as Phil 321, PNP 321, ASTAT 521A, ASTAT 361A.

Pivotal concepts common to empirical sciences are examined and clarified. These include: explanation, confirmation, prediction, systematization, empirical significance, and the relationship of all these concepts to the structure of scientific theory. Examples may be drawn from both contemporary and historical science, including the social, biological, and physical sciences. Students with a background in science are particularly encouraged to consider this course. Prerequisite: one course in Philosophy at the 100 or 200-level, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 331F. Classical Ethical Theories

Same as STA 373F, Lw St 331F, Phil 331.

Intensive readings of great works in the history of ethics, especially by Plato, Aristotle, Hume, Kant, and Mill. Topics may include: the sources of moral knowledge, the nature of practical moral judgment, the moral role of emotion and desire, weakness of will, moral autonomy, and the universality of moral norms. Prerequisite: one course in Philosophy at the 100- or 200-level, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 332I. Feminist Philosophy

This course focuses on vital normative issues of government, community, culture, and interpersonal relationships that bear on women's lives in distinctive ways. We consider diverse topics from varied feminist perspectives. Probable topics include: race/ethnicity and gender, care and justice, varieties of oppression, lesbianism, sexuality, radical democracy, violence against women, and whether philosophical modes of investigation are biased against women. Credit 3 units.

A&S SD TH

Phil 335. Topics in Feminist Thought

Credit 3 units.

A&S SD TH FA SSP

Phil 339F. Philosophy of the Arts

An examination both of general issues that apply to all types of art and of issues specific to particular art forms. For example, what is art? What are the central artistic values: beauty, truth, emotional expressiveness, representational power, or something else? Does art have a moral or political function? How can we account for the history of art and for different artistic styles? In regard to selected forms, there are important questions concerning how pictures represent, whether music and dance are forms of "language," and the nature of literary interpretation. Some consideration is given to the relation of psychology and theories of the mind to art. Prerequisite: one course in Philosophy at the 100- or 200-level, or permission of the instructor. Credit 3 units.

A&S TH FA AH SSP

Phil 340F. Social and Political Philosophy

Same as STA 370F, Lw St 340F, AMCS 3403, Phil 340.

Study of certain fundamental issues concerning government, society, and culture. For example: what are the nature and limits of legitimate political authority? Are ordinary human beings capable of governing themselves justly? Do citizens have a duty to obey the state? If so, to what extent, if at all, is that duty grounded in consent or contract? Should the state limit or regulate the personal relationships of citizens, such as marriage, family, and sexuality? How should social institutions rectify a history of political or social injustice against oppressed groups? Readings from historical and contemporary sources. Prerequisite: one course in Philosophy at the 100- or 200-level, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 341. Problems of Moral, Legal, and Social Ethics

Same as IAS 341I.

Credit 3 units.

A&S TH

Phil 345F. Issues in Applied Ethics

Advanced study of a selected topic in applied ethics. Abstract ethical theories and methods are brought to bear on the moral problems that arise in an area of social and professional practice such as medicine, business, law, journalism, engineering, or scientific and humanistic research. Possible topics include: reproductive health care and policy, the just distribution of medical resources, the social responsibilities of corporations, accountability

in the media and public office, and the ethics of research on or affecting human subjects. Prerequisite: one course at the 100- or 200-level in applied ethics; or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 346. Philosophy of Law

Same as Phil 346, Lw St 346.

This course first focuses on the philosophical foundations of law, examining both the relationship between law and rules, as well as the types of legal reasoning. Second, the course focuses on philosophical issues that arise in the key substantive areas of law: contracts, torts, property, criminal law, and constitutional law, as well in specialized areas such as family and employment law. The course ends with a brief discussion of several problems in legal ethics. Prerequisite: one previous Philosophy course, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 347C. Ancient Philosophy

Same as Classics 347C, Re St 356C.

An examination of the high-water marks of philosophy in ancient Greece and Rome, focusing primarily on Plato and Aristotle. A wide range of philosophical problems is discussed, including the nature of the good life, the justification of knowledge, and the ultimate nature of mind and world. Attention is paid to how these problems unfolded in their historical context and to how the ancient treatments of them compare to contemporary efforts. Prerequisite: one course in Philosophy at the 100- or 200-level, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 349C. Descartes to Hume

Same as PNP 349.

An examination of major philosophical systems and problems in modern philosophy as presented in the original writings of the 17th and 18th centuries. Topics may include rationalism and empiricism, idealism, materialism, and skepticism, with readings selected from the continental rationalists, Descartes, Spinoza, and Leibniz, and from the British empiricists, Locke, Berkeley, and Hume. Central problems include the mind-body problem, representationalism, and transcendentalism. Prerequisite: one course in Philosophy at the 100- or 200-level or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 357C. Kant and 19th-Century Philosophy

We discuss Kant's "Copernican Turn" in metaphysics and epistemology, as well as his moral philosophy, and we study works of selected 19th-century philosophers such as those of Hegel, Marx, Mill, and Nietzsche. Prerequisite: one course in Philosophy at the 100- or 200-level or the permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 366. Art and the Mind-Brain

Same as PNP 366.

In recent years, there has been a growing interest in the bearing of cognitive science on the perception and understanding of art. This interest has roots in tradition: historically, art, aesthetics, and vision science have often been linked. But the growth of knowledge in cognitive science has opened up new opportunities for understanding art and addressing philosophical questions. The converse is also true. The production, perception, and understanding of art are human capacities that can shed light on the workings of the mind and brain. This course considers questions such as: What is art? How do pictures represent? Does art express emotion? Why does art have a history? Credit 3 units.

A&S TH FA AH SSP

Phil 371F. Contemporary Continental Philosophy

An examination of central texts of 20th-century philosophical thought in France and Germany. The work of Hegel and Heidegger is considered, as well as that of thinkers they have influenced such as Adorno, Gadamer, and Habermas (in Germany), and Sartre, Foucault, Derrida, and Irigaray (in France). These philosophers reject any idea of "pure" knowledge and experience, and have reconceptualized human existence and understanding as fundamentally historicized, embodied, and linguistic. A focal question that this raises is, what does this reconceptualization mean for ideals of humanism? Prerequisite: one course in Philosophy at the 100- or 200-level or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 375. Existentialism

Same as Phil 375.

The philosophical systems of selected philosophers such as Kierkegaard, Nietzsche, and Sartre are examined to determine their historical origins, their ontological and epistemological ramifications, and their relationships to contemporary philosophy. Prerequisite: one course in Philosophy at the 100- or 200-level or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 378F. Philosophy of Literature

What is a literary work? Do certain interpretations of literary works (e.g., the author's) have more authority than others? What makes a literary work good? Is the answer to this question culturally relative? Why do we react emotionally to fiction even when we know that it isn't true? What do metaphors teach us about the nature of meaning and thinking? In this course we examine these and other questions. Most of the readings are drawn from philosophy, but we also have occasion to read some fiction, poetry, and literary criticism. Prerequisite: one course in Philosophy at the 100- or 200-level or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 381. Pragmatism

The focus of this course is the classical pragmatist movement, a cluster of then-highly controversial ideas developed from the 1870s through the 1940s by Peirce, James, Dewey, Meade, and C. I. Lewis. Widely regarded as the distinctively American contribution to the history of philosophy, it has been profoundly influential in shaping much subsequent American philosophical theory, especially the work of recent and contemporary analytically oriented philosophers. We concentrate on classical pragmatism in the writings of its early proponents but pay some attention also to the prominence of pragmatic elements in the thought of Carnap, Quine, Davidson, Rorty, Putnam, and Goodman. Credit 3 units.

A&S SS

Phil 382. Early 20th-Century Philosophy

The philosophy of the early 20th century represents a watershed in the history of Western philosophy, as the point when analytic and "Continental" approaches went their separate ways (despite common roots in Kantian philosophy) and also as the point when philosophy of language and philosophy of science emerged as central fields of philosophy. Against the background of the work of Frege, Husserl, and the neo-Kantians, this course examines the exchanges among the philosophers of this period (including Russell, Wittgenstein, Moore, and the Vienna Circle), which set much of the analytic agenda for the rest of the century on such topics as meaning, reference, the unity of science, and the fact-value distinction. Prerequisite: one course in philosophy at

the 100- and 200-level or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 390. Philosophical Writing

This seminar has a different topic of central philosophical importance each semester. Significant attention is also devoted to conceiving, researching, writing, revising, critiquing, and presenting philosophical essays. To see topics scheduled for coming semesters, go to <http://arts.wustl.edu/~philos/undergrad/text/390.html>. Limited to 15 students. Priority is given to philosophy majors and minors who have not yet completed their writing-intensive requirement. Credit 3 units.

A&S TH WI

Phil 395. PNP Seminar

Same as PNP 395.

A&S SS WI

Phil 399I. Philosophy Capstone Course

This course focuses either on classic writings from the past century or on contemporary writings that address a major philosophical concern, such as "The Meaning of Life" or "The Concept of Self." In either case, the course draws together a variety of philosophical specializations. Must be taken by all philosophy majors who are not writing an Honors project. Work for the course typically consists of one written project, one oral presentation, and one commentary on another student's oral presentation. Prerequisites: Senior standing, major in philosophy, preference given to those majors not pursuing Honors. Credit 3 units.

A&S TH

Phil 401. Set Theory

Same as Ling 401.

An introduction to Zermelo-Fraenkel set theory and the foundations of mathematics. A framework is constructed in which standard mathematics can be embedded. Topics include relations, functions, the systems of natural numbers, rationals, and reals, finite and infinite sets, ordinals and cardinals, and the axiom of choice and its equivalents. Prerequisite: Phil 301G or equivalent or background in pure mathematics. Credit 3 units.

A&S TH FA SSP

Phil 403. Math Logic I

Same as Ling 403.

A first course in mathematical logic, an introduction to both proof theory and model theory. The structure and properties of first-order logic are studied in detail, with attention to such notions as axiomatic theory, proof, model, completeness, compactness, and decidability. Prerequisite: Phil 301G or equivalent or a background in mathematics. Credit 3 units.

A&S TH FA SSP

Phil 404. Mathematical Logic II

Same as Ling 404.

Godel's Incompleteness Theorem: its proof, its consequences, its reverberations. Prerequisite: Philosophy 403 or a strong background in mathematics. Credit 3 units.

A&S TH FA SSP

Phil 405. Philosophical Logic

Same as PNP 405.

What the philosophy student needs to know of logic, its techniques, and its use as a tool in philosophical analysis. Some attention to the history of the subject and to its metatheory. Prerequisite: previous exposure to formal logic, or permission of instructor. Credit 3 units.

A&S LA FA SSP

Phil 4060. Semantics

Same as Ling 4060.

A&S LA

Phil 4061. Topics in the Philosophy of Language

Focus on the work of a single philosopher of language such as Carnap, Chomsky, Foucault, or Kripke, or on a central topic such as the theory of reference, the theory of meaning, or the problem of cross-cultural translation. Prerequisite: one course in epistemology, philosophy of language, or analytic philosophy, or permission of instructor. Credit 3 units.

A&S TH

Phil 4065. Advanced Philosophy of Language

Same as Ling 4065.

An advanced-level treatment of basic topics in the philosophy of language as this discipline is understood in the analytic tradition. The main positions and the problems they pose are surveyed; focal themes include meaning, reference, and truth. The aim of the course is to help students develop effective expository techniques and to provide them with the necessary conceptual resources to analyze and criticize different theoretical views. Prerequisites: one course in Philosophy at the 300-level, graduate standing, or permission of the instructor. Credit 3 units.

A&S LA FA SSP

Phil 410. Theories of Perception

Same as PNP 410.

A consideration of recent work in philosophy and cognitive science on the nature of perception and its contribution to thought, knowledge, and behavior. Special attention is paid to two questions: To what extent can perceptual experience be changed through learning? In what sense do perceptual states have content? The relation of these issues to more general theories of mental content, to the possibility of objective and theory-neutral observation in science, and to the directness or indirectness of perception will be discussed. Prerequisite: one course in Philosophy at the 300-level, graduate standing, or permission of instructor. Credit 3 units.

A&S TH FA SSP

Phil 4141. Advanced Epistemology

Competing theories of knowledge and belief justification are considered. Careful attention is given to selected problems such as skepticism, certainty, foundations, coherence, perception, induction. Prerequisite: one course in Philosophy at the 300-level, graduate standing, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 4142. Advanced Metaphysics

Same as PNP 4142.

Through readings from both classical and contemporary sources, a single traditional metaphysical concern will be made the subject of careful and detailed analytic attention. Possible topics include such concepts as substance, category, cause, identity, reality, and possibility, and such positions as metaphysical realism, idealism, materialism, relativism, and irrealism. Prerequisite: one course in Philosophy at the 300-level, graduate standing, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 418. Current Controversies in Cognitive Science

Same as PNP 418.

An advanced survey of current debates in cognitive science with an emphasis on the philosophical issues raised by these debates. Topics may include: evolutionary psychology; innateness and neural plasticity; perception and action; consciousness; connectionism; robotics; embodied cognition; moral reason; emergence and artificial life; concepts and content; animal cognition. Prerequisite: one course in Philosophy at the 300-level, graduate standing, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 419. Philosophy of Psychology*Same as PNP 419.*

An investigation of the philosophical presuppositions and implications of various traditions in psychology, including behaviorism, Gestalt, and cognitivism, with a special emphasis on the development of the information processing approach of contemporary cognitivism. The conception of psychological phenomena, data, and explanation central to each of these traditions are examined, and typical topics include the debates between propositional and imagistic models of representation, different accounts of concepts and categorization, and the relation of psychology to ethics. Prerequisite: one previous course in Philosophy at the 300-level, graduate standing, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 4202. Contemporary Feminisms*Same as WGS 420.*

A&S SD TH FA SSP

Phil 4210. Advanced Philosophy of Science

An advanced survey of debates central to contemporary philosophy of science. These include the controversies generated by critiques of 20th-century logical positivism and logical empiricism and by a range of contextualist alternatives to this "received view"; the ongoing debate between scientific realists and anti-realists, irrealists, and constructive empiricists; competing proposals for naturalizing philosophical studies of science; and recent reassessments of concepts of objectivity, theories of evidence, models of explanation, and unity of science theses. Examples are drawn from a range of sciences, contemporary and historical. Prerequisite: one course in Philosophy at the 300-level, graduate standing, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 4211. Philosophy of Social Science*Same as Lw St 4211, STA 4211.*

In what respects is inquiry in the social sciences like that of the natural or physical sciences, and in what respects is it different? Are the differences appropriate to the different subject matters or are they mere coincidences of the history of science? This course is an advanced survey of dominant "naturalist," "anti-naturalist," and "critical" responses to these questions. Topics include: concepts of explanation and interpretation; the role of idealizations; and standards of evidence and testing strategies in the social sciences. Graduate students and undergraduate majors in the social sciences may find this course particularly relevant. Prerequisite: one course in Philosophy at the 300-level, graduate standing, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 4212. Philosophy of Neuroscience*Same as PNP 4212.*

This course focuses on the historical roots of neuroscience as well as its contemporary developments. Topics include: (1) the nature of explanatory strategies in neuroscience; (2) the relation between neuroscience research and higher-level disciplines such as psychology; and (3) the epistemology of the investigatory tools of neuroscience. Prerequisite: one previous course in Philosophy at the 300-level, graduate standing, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 426. Theories of Concepts*Same as PNP 426.*

Concepts are the building blocks of thought. They are implicated in just about every cognitive task. Beyond that, there is little consensus. What information do concepts encode? How are they acquired? How are they combined to form thoughts?

How are they related to perception and imagery? Each of these questions has been answered in numerous ways. In this course, we explore competing theories of concepts that have been proposed by philosophers, psychologists, and other cognitive scientists. No prior acquaintance with these issues is required. Prerequisite: one previous course in Philosophy at the 300-level, graduate standing, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 4310. 20th-Century Metaethics

An examination of metaphysical and epistemological issues in ethics. Topics include: the nature of the good and the right, the meaning of ethical terms, the logic of moral argument, and the status of moral knowledge. We consider philosophical works written since 1900 by such authors as Moore, Ross, Stevenson, Ayer, Foot, Hare, Brink, Harmon, Blackburn, and McDowell. Prerequisite: one previous course in Philosophy at the 300-level, graduate standing, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 4315. Normative Ethical Theory

An exploration of the three major normative ethical theories debated by philosophers in the past 100 years: Kantian ethics, utilitarianism, and virtue theory. Authors covered in the course may include: Henry Sidgwick, R. M. Hare, R. B. Brandt, John Rawls, Bernard Williams, Philippa Foot, Thomas Nagel, Christine Korsgaard, Michael Slote, and Barbara Herman. Prerequisite: one course in Philosophy at the 300-level, graduate standing, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 4320. British Moralists

An investigation of the work of the great British moral philosophers of the 17th to 19th centuries, especially Hobbes, Hume, and Mill. Other figures may include Reid, Butler, Hutcheson, Bentham, and Sidgwick. In considering these philosophers, we explore the relations between normative ethics, moral psychology, and political philosophy, and may include a discussion of legal, social, and economic philosophies as well. Prerequisite: one course in Philosophy at the 300-level, graduate standing, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 438. Aesthetics

A careful consideration of selected issues regarding the experience of visual art, architecture, music, or literature, as well as of the power or beauty of nature, people, and artifacts. For example, is there a special form of aesthetic experience or aesthetic attitude? In what do aesthetic power and beauty consist? Are they different in art and nature? Do the artists' intentions matter? Some central concerns are: how do visual art and literary texts have "meaning," what role do the viewer's or reader's interpretations play, and how might recent work in cognitive science and social theory shed light on these issues. Prerequisite: one course in Philosophy at the 300-level, graduate standing, or permission of the instructor. Credit 3 units.

A&S TH FA AH SSP

Phil 4400. Advanced Social and Political Philosophy

A selective investigation of one or two advanced topics in the philosophical understanding of society, government, and culture. Readings may include both historical and contemporary materials. Possible topics include: liberalism, socialism, communitarianism, citizenship, nationalism, cosmopolitanism, social contract theory, anarchism, and the rights of cultural minorities. Prerequisite:

one course in Philosophy at the 300-level, graduate standing, or permission of the instructor.

Credit 3 units.

AS TH F SSP

Phil 442. Social and Political Philosophy

Credit 3 units.

A&S TH

Phil 445. Topics in the Philosophy of Law*Same as Pol Sci 4450, AMCS 443.*

Selected concepts and problems in the philosophy of law. Special attention to their explication and resolution in terms of classical and contemporary theories of the nature of law. Prerequisite: senior standing, or permission of instructor. Credit 3 units.

A&S LA

Phil 446. Philosophy of Law

This course considers such topics as: the nature of law and its relationship to systems of norms; the legal enforcement of morals; and the nature of harm and its role in punishment. We consider such theorists as: John Stuart Mill, Patrick Devlin, H.L.A. Hart, Joel Feinberg, Michael Moore, and Ronald Dworkin. Prerequisite: senior standing, or permission of instructor. Credit 3 units.

Phil 4461. The Rule of Law*Same as Pol Sci 4461, Lw St 4461.*

Credit 3 units.

A&S TH

Phil 447. Topics in Metaphysics

Persons, Time & Consciousness. The course surveys a number of related issues about personal identity. What are persons? Do persons really exist? Are persons metaphysically different from tables and chairs? How do persons persist over time, if at all? Does consciousness have a special role to play in determining personal identity? Does consciousness have a certain unity? Credit 3 units.

A&S TH

Phil 451. Plato*Same as Classics 451, Re St 455.*

An examination of some of Plato's most important dialogues, typically including the Gorgias, Phaedo, and Republic, with the aim of grasping the development of Plato's most influential thoughts in ethics and in metaphysics and epistemology. In order to provide both historical understanding and philosophical evaluation, attention is paid to the context and structure of the dialogues and to the best of recent secondary literature. Prerequisite: one course in Philosophy at the 300-level, graduate standing, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 452. Aristotle*Same as Classics 452.*

This course offers a maximally full and detailed introduction to the works of Aristotle. His logic, natural philosophy, psychology, metaphysics, ethics, and political philosophy are discussed, and stress is laid on the interpretive problems facing contemporary philosophers seeking to understand Aristotle's achievement. Prerequisite: one course in Philosophy at the 300-level, graduate standing, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 4530. Hellenistic Philosophy*Same as Classics 4350.*

The Hellenistic Age, traditionally dated from the death of Alexander and his (Macedonian) Empire at 323 BCE to the birth of Augustus' (Roman) Empire in 31 BCE, gave the West three of its most innovative and influential schools of philosophy: Epicureanism, Skepticism, and Stoicism. This course investigates the central features of their thought. Special attention is paid to the still-relevant debates between the Stoics and Skeptics

about the possibility of knowledge, to the disagreements among all three schools about the issues of freedom, responsibility, and determinism, and to their ethical theories. Prerequisite: one course in Philosophy at the 300-level, graduate standing, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 4550. Continental Rationalism

A rationalist is a philosopher for whom at least one certain truth is inborn or comes from reason rather than from empirical or sensory experience. The major systemic writings of Descartes, Spinoza, and Leibniz are examined with a focus on the question: does the epistemology determine the ontology of these philosophical systems, or vice versa? The lines of development connecting these philosophers are traced, and such enduring problems as the relation of mind to body are examined. Prerequisite: one course in Philosophy at the 300-level, graduate standing, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 456. Empiricist Philosophies

Major writings of Locke, Berkeley, Hume, and others are read and discussed for the purpose of discerning interrelations between ontological and epistemological principles. The stress is on problems that are crucial in the history of Western philosophy. Prerequisite: 6 units in philosophy or permission of instructor. Credit 3 units.

Phil 4570. Kant's Critique of Pure Reason

An in-depth investigation of Kant's *Critique of Pure Reason*, one of the most important books in the history of Western philosophy. Some supplementary readings from other philosophers are used to situate Kant's work in a systematic and historical context, to present some "Kantian" positions in current philosophy, and to bring in some important contrasting views and criticisms. Prerequisite: one course in Philosophy at the 300-level, graduate standing, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 4575. Kant and Kantian Practical Philosophy

An in-depth examination of Kant's practical philosophy: his moral and political theory. Readings include the *Critique of Practical Reason*, parts of the *Metaphysics of Morals*, *Perpetual Peace*, and other writings. Supplementary readings are used to situate Kant's work in its systematic and historical context, to provide orientation in the world of Kant scholarship, and to introduce important contrasting views and criticisms. We also discuss recent reformulations of Kantian themes in the works of contemporary philosophers. Prerequisite: one course in Philosophy at the 300-level, graduate standing, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 4602. Hegel and Hegelianism

Same as Re St 4703.

A&S TH FA SSP

Phil 464. Advanced Continental Philosophy

A study of selected texts by such major figures of 20th-century continental philosophy as Husserl, Heidegger, Merleau-Ponty, Sartre, de Beauvoir, Levinas, Habermas, Foucault, Derrida, and Irigaray. Such topics as phenomenology, hermeneutics, existentialism, critical theory, structuralism and post-structuralism are investigated. Prerequisite: one course in Philosophy at the 300-level, graduate standing, or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Phil 465. Topics in the History of Philosophy

Study of individual philosophers or themes from the ancient, medieval, and/or modern periods. Examples: Spinoza, St. Thomas Aquinas, neo-Platonism, universals in ancient and medieval thought, ancient and modern theories of space and time. Prerequisite: 6 units in philosophy or permission of instructor. Credit 3 units.

A&S LA

Phil 4751. Intellectual History of Feminism

Same as WGS 475.

A&S TH FA Lit

Phil 484. Topics in Analytic Philosophy

Focus on the work of a single contemporary analytic philosopher such as Davidson, Putnam, or Strawson, or a central problem area such as epistemological relativism or the problem of the identity of physical objects. Prerequisite: one course in epistemology, philosophy of language, or analytic philosophy, or permission of instructor. Credit 3 units.

A&S TH

Phil 492. Honors Seminar in Jewish Studies

Same as JNE 415.

A&S TH

Phil 499. Study for Honors

Prerequisites: senior standing, a 3.4 minimum grade point average overall, a 3.4 minimum grade point average in philosophy courses, a 3.5 grade point average in advanced philosophy courses, level 300 and above, and the permission of the department. Applications and further information are available in the Department of Philosophy. See further: artsci.wustl.edu/~philos/undergrad/honors.html. Credit 3 units.

A&S TH FA SSP

Phil 500. Independent Work

Prerequisites: junior standing and permission of the department. Credit variable, maximum 6 units.

Philosophy-Neuroscience-Psychology

Director

José Luis Bermúdez, Professor (Philosophy and Philosophy-Neuroscience-Psychology)
Ph.D., Cambridge

Endowed Professors

John Baugh

Margaret Bush Wilson Professor in Arts & Sciences (African and African American Studies)
Ph.D., University of Pennsylvania

Pascal R. Boyer

Henry Luce Professor of Collective and Individual Memory (Anthropology)

Ph.D., University of Paris-Nanterre

Steven E. Petersen

James S. McDonnell Professor of Cognitive Neuroscience (Neurology, Neurological Surgery, and Psychology)
Ph.D., California Institute of Technology

Henry L. Roediger, III

James S. McDonnell Distinguished University Professor (Psychology)
Ph.D., Yale University

Rebecca Treiman

Burke and Elizabeth High Baker Professor of Child Developmental Psychology
Ph.D., University of Pennsylvania

David C. van Essen

Edison Professor of Neurobiology (Anatomy and Neurobiology)
Ph.D., Harvard Medical School

James V. Wertsch

Marshall S. Snow Professor in Arts & Sciences (Anthropology, International and Area Studies, Education)
Ph.D., University of Chicago

Participating Faculty

Richard A. Abrams, Professor (Psychology)
Ph.D., University of Michigan

Charles Anderson, Research Professor (Anatomy & Neurobiology, Biomedical Computing, Physics Department)
Ph.D., Harvard

David A. Balota, Professor (Psychology)

Ph.D., University of South Carolina

Deanna M. Barch, Associate Professor (Psychology)

Ph.D., University of Illinois

Joe Barcroft, Assistant Professor (Romance Languages and Literatures)
Ph.D., University of Illinois at Urbana-Champaign

Cindy Brantmeier, Assistant Professor
(Applied Linguistics and Spanish)
Ph.D., Indiana University at Bloomington

Todd S. Braver, Associate Professor
(Psychology)

Ph.D., Carnegie Mellon University

John Bruer, Professor
(Philosophy)

Ph.D., Rockefeller University

Carl F. Craver, Assistant Professor
(Philosophy and Philosophy-Neuroscience-
Psychology)

Ph.D., University of Pittsburgh

Dennis DesChene, Professor
(Philosophy)

Ph.D., Stanford

John Doris, Associate Professor
(Philosophy)

Ph.D., The University of Michigan, Ann
Arbor

Janet M. Duchek, Associate Professor
(Psychology)

Ph.D., Washington University

Stanley Finger, Professor
(Psychology)

Ph.D., Indiana University

Leonard S. Green, Professor
(Psychology)

Ph.D., State University of New York–Stony
Brook

John Heil, Professor
(Philosophy)

Ph.D., Vanderbilt

Brett D. Hyde, Assistant Professor
(Philosophy, Linguistics and Philosophy-
Neuroscience-Psychology)

Ph.D., Rutgers University

Larry L. Jacoby, Professor
(Psychology)

Ph.D., Southern Illinois University–
Carbondale

Brett Kessler, Assistant Professor
(Psychology)

Ph.D., Stanford University

Joseph L. Price, Professor
(Anatomy and Neurobiology)

D. Phil., Oxford University

Marcus E. Raichle, Professor
(Radiology)

M.D., University of Washington

Philip A. Robbins, Assistant Professor
(Philosophy and Philosophy-Neuroscience-
Psychology)

Ph.D., University of Chicago

Mark Rollins, Associated Professor
(Philosophy and Philosophy-Neuroscience-
Psychology)

Ph.D., Columbia University

R. Keith Sawyer, Associate Professor
(Education)

Ph.D., University of Chicago

Mitchell S. Sommers, Associate Professor
(Psychology)

Ph.D., University of Michigan

Paul S. G. Stein, Professor
(Biology)

Ph.D., Stanford University

Desirée A. White, Associate Professor
(Psychology)

Ph.D., Washington University

Jeffrey M. Zacks, Assistant Professor
(Psychology)

Ph.D., Stanford University

Philosophy-Neuroscience-Psychology (PNP) is an interdisciplinary program that provides an opportunity to examine the mind from multiple perspectives. If you choose to major in PNP, you will learn to bring some of the newest findings in science to bear on some of the oldest questions in philosophy; equally important, you will see new questions emerge and learn to pursue those as well. Examples include: Is the mind–brain a single entity, or does having a mind involve something over and above the activity of a brain? What assumptions are made by cognitive psychologists when they divide mental activity into separate processes and use response times or other measures of task performance to describe those processes? What assumptions are made by neuroscientists when they use imaging techniques to determine where in the brain a cognitive process is carried out? What are we to make of Chomsky’s claim that language is an innate “mental organ” designed to generate an infinite number of sentences? As a PNP major you will seek answers to questions such as these in courses offered by PNP’s affiliated departments.

The PNP major may be taken on its own, or in combination with one or more other majors. The major begins with an introductory sequence of courses designed to lay the foundations for interdisciplinary inquiry. Students then gain a basic grounding in relevant areas of Philosophy and Psychology. These core requirements provide students with a foundation for more specialized interdisciplinary study. Students can choose between two tracks in the PNP major. Students interested in the biological underpinnings of the mind can choose the Cognitive Neuroscience (CN) track, which integrates the study of higher brain functioning with behavioral research directed at understanding activities such as perceiving, attending, remembering, and acting. The Language, Cognition, and Culture (LCC) track addresses the importance of language in human cognition, and the integration of cognition with one’s cultural environment. The choice between LCC and CN is usually made in the junior year. The final stage in the PNP major is the depth requirement, which consolidates the knowledge and skills gained in your chosen track. It is highly recommended that students undertake a capstone experience as part of the depth requirement. This will allow students to engage in an independent project or study that will draw together different strands of the major, or allow for a deeper study of a particular area.

The PNP major at a glance

- Core requirements:**
Introductory sequence (6 units at level 100/200 from an approved list)
and
Core courses in Philosophy (3 prerequisite units at level 100/200 plus 6 units at level 300/400 from an approved list)
and
Core courses in Psychology (3 prerequisite units at level 100 plus 6 units at levels 300/400 from an approved list).
- Track-specific requirements:**
Cognitive Neuroscience (3 prerequisite units at level 200/300 plus 6 units at level 300/400 from an approved list).
or
Language, Culture, Cognition (6 prerequisite units at level 100/200 plus 6 units at level 300/400 from an approved list).
- Depth requirement:**
9 units at level 300/400 from groupings appropriate to your chosen track. These units are in addition to the 18 units at level 300/400 required to satisfy the core and track-specific requirements.
- Capstone experience:**
This is required for primary majors and highly recommended for second majors. It consists of either:
 - A PNP Honors project (PNP 499, 6 units; see below);
 - The 1-unit PNP Book Club plus the PNP Seminar (PNP 395); or
 - The PNP Book Club plus 3–6 advanced units of independent study in an affiliated discipline (Psychology 500, Anthropology 500, etc.).
 Units from a capstone experience can count toward satisfying the depth requirement.

Beginning the major

There are two entry sequences for the major. The PNP Sequence (NS/SS) includes:

PNP 200. Introduction to the Cognitive Sciences (SS)

PNP 201. Inquiry in the Cognitive Sciences (NS) or Psych 301 (NS)

The Mind, Brain and Behavior Sequence (NS/SS) includes:

MBB/PNP 120 (formerly HewP 120). Introduction to the Mind–Brain (NS)

MBB/PNP 122 (formerly HewP 122). Introduction to the Mind–Brain II (SS) or PNP 200 (SS)

The Philosophy prerequisite consists of 3 units at the 100 or 200 level. The best choices for PNP students are Phil 100: Logic and Critical Analysis (LA, QA), Phil 120: Problems in Philosophy (TH) Phil 125: Great Philosophers (TH). The core Philosophy requirements consist of 6 units at the 300 or 400 level from an approved list.

The Psychology prerequisite is Psych 100B: Introduction to Psychology (SS). The core Psychology requirements consist of 6 units at the 300 or 400 level from an approved list. These must include either

PNP/Psych 360: Cognitive Psychology *or* PNP/Ling 408/Psych 433: Psychology of Language *unless* MBB 120/PNP 120 (formerly HewP 120) was completed with a grade of B– or higher.

The prerequisite for the Cognitive Neuroscience track is Biol 3050: Principles of Biology III *or* Psych 3401: Biological Psychology. The track-specific requirements on this track are PNP/Biol/Psych 3411: Principles of the Nervous System *and* PNP/Psych 3604: Cognitive Neuroscience.

The prerequisites for the Language, Culture, and Cognition track are Ling/Anthro 170: Introduction to Linguistics *and* Anthro/Ling 215: Language, Culture, and Society. The track-specific requirements on this track are 6 units at the 300 or 400 level to be chosen from an approved list.

For further details of the structure of the PNP major, including a full survey of prerequisites and distribution requirements, please obtain a copy of the *PNP Handbook* from the PNP Office, 225 Busch Hall, or consult the PNP Web page at <http://artsci.wustl.edu/~pnp/undergrad.html>.

Total units

The total number of units required for the PNP major will vary, depending upon track and individual trajectory, but students on the Cognitive Neuroscience track will typically take 27–30 units of advanced credit (42 units overall), while students on the Language, Cognition, and Culture track will typically take 27 advanced units (45 units overall).

Senior Honors in PNP

Students are encouraged to work toward Senior Honors in PNP. PNP Honors students must have an overall GPA of 3.5 and take PNP 499 (Study for Honors). In the Study for Honors, students carry out an interdisciplinary research project under the direction of one or more members of the PNP faculty as listed above. The results of the project are presented in a written Honors Thesis.

Taking more than one major

The College of Arts & Sciences requires that you have at least 18 units of stand-alone advanced credit (300-level and above) for each major. You should bear in mind that there is an important difference between

1. The overall number of units required for a major (the 18-unit requirement)
2. The distribution requirements of a major.

You may satisfy the PNP distribution requirements by taking appropriately cross-listed courses, even if those courses count toward the 18 units of advanced credit required for another major. However, no course may count toward satisfying the 18-unit rule for more than one major.

Example 1. Suppose that you are double-majoring in PNP and in Philosophy and in your junior year you take Philosophy of Mind (PNP/Phil 315). You may count this *either* toward the 18 units required for the Philosophy major *or* toward the 18 units required for the PNP major—but not toward both. However, you may count this course

both toward the core contemporary/analytic requirement in Philosophy *and* toward the depth requirement in PNP.

Example 2. Suppose that you are double-majoring in PNP on the Cognitive Neuroscience track and in Biology. Because you are on the Cognitive Neuroscience track in PNP, you are required to take Principles of the Nervous System (PNP/Biol 3411). You may count this course *both* toward the Cognitive Neuroscience track requirement *and* toward the Area 2 distribution requirement for the Biology major. However, you may only count this course *either* toward the 18 units required for the Biology major *or* toward the 18 units required for the PNP major—but not toward both.

The minor in PNP

You are required to complete 15 units, of which 9 must be at the 300 level. The minor is composed of a 6-unit introductory sequence (PNP 200 and 201 *or* Mind 120 and 122), followed by

- 3 units in Philosophy (PNP/Phil 315: Philosophy of Mind *or* PNP/Phil 306G: Philosophy of Language)
- 3 units in Neuroscience (PNP/Biol 3411: Principles of the Nervous System *or* PNP/Psych 3604: Cognitive Neuroscience)
- 3 units in Psychology (PNP/Psych 360: Cognitive Psychology *or* PNP 408/Psych 433: Psychology of Language)

Undergraduate Courses

PNP 122. Introduction to the Study of the Mind–Brain II

Same as MBB 122.

A&S SS

PNP 200. Introduction to the Cognitive Sciences

We will seek to understand the mind-brain by integrating findings from several of the cognitive sciences, including philosophy, psychology, neuroscience, linguistics, anthropology, and artificial intelligence. This course will consider multiple perspectives on such topics as mental imagery, concepts, rationality, consciousness, emotion, language, thought, memory, attention, and machine intelligence. It is required for PNP majors entering Washington University in Fall 2001 or later, and is best taken in fall of the sophomore year. Alternatively, the requirement can be satisfied by taking the first two courses in the Mind, Brain, and Behavior program (formerly known as Hewlett Program in Study of the Mind–Brain). Prerequisite: completion of at least one of the following courses: Psych 100B, Phil 120F, Phil 125C, Biol 296A, or Ling 170D. Credit 3 units.

A&S SS

PNP 201. Inquiry in the Cognitive Sciences

Understanding the mind-brain involves orchestrating a variety of conceptual tools and modes of inquiry from the cognitive sciences. This course offers a hands-on introduction to a variety of research tactics used in the behavioral and biological sciences and emphasizes the advantages of combining them. For example, neuroimaging can enhance the interpretation of experiments by cognitive psychologists, and modeling can be used to simulate and understand the effects of brain lesions. This course is required for PNP majors entering Washington University in Fall 2001 or later,

and is best taken in spring of the sophomore year. Alternatively, the requirement can be satisfied by Psych 301. Prerequisite: PNP 200. Credit 3 units.

A&S NS QA

PNP 300. Models of Social Science

Same as STA 300.

A&S SS FA SSP

PNP 3001. Research in the Mind–Brain

Same as MBB 300.

A&S NS

PNP 301. Symbolic Logic

Same as Phil 301G.

A&S LA FA SSP

PNP 3011. Experimental Psychology

PNP 3051. Topics Seminar: Collective and Individual Memory

Same as STA 3051.

A&S SS FA SSP

PNP 306. Philosophy of Language

Same as Phil 306G.

A&S LA FA SSP

PNP 307. Metaphysics and Epistemology

Same as Phil 307.

A&S TH FA SSP

PNP 309. Syntactic Analysis

Same as Ling 309.

A&S LA

PNP 313. Phonological Analysis

Same as Ling 313.

A&S LA

PNP 314. Sociolinguistics, Literacies, and Communities

Same as Educ 314.

A&S LA

PNP 315. Philosophy of Mind

Same as Phil 315.

A&S TH FA SSP

PNP 3151. Introduction to Social Psychology

Same as Psych 315.

A&S SS FA SSP

PNP 316. Mind and Morals

Same as Phil 316.

A&S TH FA SSP

PNP 320. Historical and Comparative Linguistics

Same as Ling 320.

A&S LA FA Lit

PNP 321. Philosophy of Science

Same as Phil 321G.

A&S TH FA SSP

PNP 3211. Developmental Psychology

Same as Psych 321.

A&S SS FA SSP

PNP 323. Play and Development

Same as Psych 323.

A&S SS FA SSP

PNP 330. Sensation and Perception

Same as Psych 330.

A&S NS FA NSM

PNP 3383. Cognition and Culture

Same as Anthro 3383.

A&S SS FA SSP

PNP 340. Linguistic Pragmatics

PNP 3401. Biological Psychology

Same as Psych 3401.

A&S NS FA NSM

PNP 3411. Principles of the Nervous System

Same as Biol 3411.

A&S NS FA NSM

PNP 349. Descartes to Hume*Same as Phil 349C.***A&S** TH **FA** SSP**PNP 350. Physics of the Brain***Same as Physics 350.***A&S** NS **FA** NSM**PNP 355. Physics of Vision***Same as Physics 355.***A&S** NS **FA** NSM**PNP 358. Language Acquisition***Same as Psych 358.***A&S** SS **FA** SSP**PNP 360. Cognitive Psychology***Same as Psych 360.***A&S** NS **FA** NSM**PNP 3604. Cognitive Neuroscience***Same as Psych 3604.***A&S** NS **FA** NSM**PNP 361. Psychology of Learning***Same as Psych 361.***A&S** NS **FA** NSM**PNP 362. The Biological Basis of Human Behavior***Same as Anthro 362.***A&S** CD NS SD **FA** NSM**PNP 366. Art and the Mind-Brain***Same as Phil 366.***A&S** TH **FA** AH SSP**PNP 380. Human Learning and Memory***Same as Psych 380.***A&S** NS **FA** NSM SSP**PNP 390. PNP Book Club**

Each time this course is offered, a book is selected that does an exemplary job of bringing together insights and results from multiple disciplines in targeting an important topic. We read and discuss the book and possibly a small amount of supplementary reading. A short presentation and paper is required. Credit 1 unit.

A&S SS**PNP 395. PNP Seminar***Same as Phil 395.*

Readings on a selected topic with an emphasis on presentation, discussion, and writing. Prerequisite: varies with topic. Credit 3 units.

A&S SS, WI**PNP 396. Linguistics Seminar: Metrical Stress Theory***Same as Ling 396.***A&S** TH**PNP 3ABR. PNP Coursework Completed Abroad**

Credit variable, maximum 12 units.

PNP 4001. Introduction to Neuropsychology*Same as Psych 4001.***A&S** NS **FA** NSM**PNP 4031. Biological Clocks***Same as Biol 4031.***A&S** NS WI **FA** NSM**PNP 404. Laboratory of Neurophysiology***Same as Biol 404.***A&S** NS WI **FA** NSM**PNP 4046. Developmental Neuropsychology***Same as Psych 4046.***A&S** NS WI **FA** NSM**PNP 4047. History of Neuroscience***Same as Psych 4047.***A&S** SS **FA** SSP**PNP 405. Philosophical Logic***Same as Phil 405.***A&S** LA **FA** SSP**PNP 406. Primate Ecology and Social Structure***Same as Anthro 406.***A&S** NS **FA** NSM**PNP 4060. Semantics***Same as Ling 4060.***A&S** LA**PNP 408. Psychology of Language***Same as Psych 433.***A&S** SS **FA** SSP**PNP 410. Topics Seminar: Law, Language, and Culture***Same as STA 410.***A&S** SS **FA** SSP**PNP 4101. Theories of Perception***Same as Phil 410.***A&S** TH **FA** SSP**PNP 4121. Language and Power***Same as Anthro 4121.***A&S** SS **FA** SSP**PNP 4122. Language and Gender***Same as Anthro 4122.***A&S** SD SS **FA** SSP**PNP 4142. Advanced Metaphysics***Same as Phil 4142.***A&S** TH **FA** SSP**PNP 418. Current Controversies in Cognitive Science***Same as Phil 418.***A&S** TH **FA** SSP**PNP 419. Philosophy of Psychology***Same as Phil 419.***A&S** TH **FA** SSP**PNP 4212. Philosophy of Neuroscience***Same as Phil 4212.***A&S** TH **FA** SSP**PNP 426. Theories of Concepts***Same as Phil 426.***A&S** TH **FA** SSP**PNP 4301. Contemporary Topics in Cognitive Development***Same as Psych 4301.***A&S** SS WI **FA** SSP**PNP 4315. Culture, Language, and the Education of Black Students***Same as Educ 4315.***A&S** CD SS **FA** SSP**PNP 4418. Computational Modeling in Cognitive Neuroscience***Same as Psych 4418.***A&S** NS **FA** NSM**PNP 448. Topics Seminar: Trauma and Memory***Same as STA 448.***A&S** SS **FA** SSP**PNP 4488. The Cognitive Neuroscience of Film***Same as Psych 4488.***A&S** NS**PNP 4651. History of Psychology***Same as Psych 4651.***A&S** TH **FA** SSP**PNP 466. Second Language Acquisition***Same as Ling 466.***A&S** LA**PNP 467. Grammar and Vocabulary Acquisition***Same as Span 467.***A&S** LA**PNP 469. Reading and Writing in a Second Language***Same as Span 469.***A&S** TH**PNP 472. History of the English Language***Same as E Lit 472.***A&S** LA **FA** Lit**PNP 4765. Biological Basis of the Major Mental Disorders***Same as Psych 4765.***A&S** NS **FA** NSM**PNP 499. Study for Honors**

Prerequisite: Senior standing, a grade point average of 3.50 overall, and permission of the department. Credit 3 units.

A&S SS**PNP 500. Independent Work**

Prerequisites: minimum of junior standing and written permission of a PNP-affiliated faculty member and of the PNP undergraduate coordinator, and either PNP 200 or MBB 120A. Credit variable; maximum 6 units. A maximum of 3 units may be applied toward upper division credits required for the major. Contact the department for further details. Credit variable, maximum 6 units.

Physical Education

Director of Athletics and Coordinator of Physical Education

John Schael, Associate Professor
M.Ed., Miami University

As an undergraduate student, you may take both lecture-laboratory and performance courses through the Department of Athletics. A total of 12 performance units may be included in the 120 units required for graduation. Grades received for physical education courses do not count toward the grade point average.

Undergraduate Courses

PE 108. Pep Band

Pep Band is a performance group that plays at Bears' football and basketball home games as well as an occasional away game. Grading is based on attendance at practice and games. Open to all musicians who are dedicated to team spirit. A limited number of instruments are available for those who don't have theirs on campus. For more information (instruments, schedules, etc.) see our Web site at www.rescomp.wustl.edu/~pepband. Please e-mail pepband@rescomp.wustl.edu if you are interested in taking the class. Credit 1 unit.

PE 115. Topics in Physical Education:

Beginning Weight Training

Major emphasis is on strength development. Credit 1 unit.

PE 116. Topics in Physical Education:

Beginning Racquetball

Credit 1 unit.

PE 117. Advanced Racquetball

Credit 1 unit.

PE 119. Intermediate and Advanced

Racquetball

Credit 1 unit.

PE 120. Topics in Physical Education: Varsity Sports.

Prerequisite: permission of instructor. Credit 1 unit.

PE 1201. Fundamentals of Rowing for Fitness

This course focuses on the effective use of Concept II rowing machines as tools to learn the rowing stroke as well as to maintain aerobic fitness and develop strength. Emphasis is placed on the correct use of technique to decrease risk of injury; varying duration and intensity of work on the machine to develop different energy systems; using these new skills in developing lifetime fitness. Instruction includes the use of videotape and video monitoring. Athletic shoes and clothes that are not baggy are needed to participate. There is a minimum amount of running or light low-impact aerobic activity required as a warm-up. Credit 1 unit.

PE 121. Topics in Physical Education: Varsity Sports

Prerequisite: permission of instructor. Credit 1 unit.

PE 124A. Fundamentals of Rowing for Fitness

This course focuses on the effective use of Concept II rowing machines as tools to learn the rowing stroke as well as to maintain aerobic fitness and development strength. Emphasis is placed on the correct use of technique to decrease risk of injury; varying duration and intensity of work on the machines to develop different energy systems; using these new skills in developing lifetime fitness. Instruction included the use of videotape and

video monitoring. Athletic shoes and clothes that are not baggy are needed to participate. There is a minimum amount of running or light low-impact aerobic required as a warm-up. Credit 1 unit.

PE 132. Topics in Physical Education:

Beginning swimming

Credit 1 unit.

PE 134. Topics in Physical Education:

Lifeguard Training

This course provides skill instruction and knowledge needed to prevent and respond to aquatic emergencies in a pool setting. Successful completion of requirements results in certification in American Red Cross Lifeguard Training for swimming pools, CPR, and First Aid. Prerequisite: swimming test given during the first week of class. Credit 1 unit.

PE 135. Topics in Physical Education: Step Aerobics

A low-impact aerobic class in which choreography and equipment are combined to meet the needs of participants at all levels of fitness. There is a fee of \$45.00 for this course. Credit 1 unit.

PE 136. Topics in Physical Education:

Independent Fitness and Conditioning.

Students complete fitness testing at the beginning and end of the semester. Individual workout schedules are followed outside of class time. Credit 1 unit.

PE 137. Spinnin'

Music, stationary bicycles, and an instructor who cues you to ride through hills, valleys, and other terrain, changing resistance and pace to simulate different types of riding. All levels welcome—you can tailor the ride to fit your personal fitness goals and needs. A water bottle and towel are required for this class. There is a \$45.00 fee. Credit 1 unit.

PE 139. Topics in Physical Education:

Advanced Tennis

Credit 1 unit.

PE 140. Topics in Physical Education:

Beginning Tennis

Credit 1 unit.

PE 143. Topics in Physical Education:

Intermediate and Advanced Tennis

Credit 1 unit.

PE 148. Topics in Physical Education:

Individual Physical Education

Prerequisite: medical referral. Credit 1 unit.

PE 155. Topics in Physical Education:

Practicum in Sports Leadership

Participation in formal leadership tasks under the direction of the Washington University Athletic Department personnel. Selection of task and scope of work to be determined before enrollment by conference with instructor. Prerequisite: permission of the department. Credit 1 unit.

PE 208. Topics in Physical Education:

Introduction to Lifetime Fitness

Knowledge of healthy eating, body composition, and fitness conditioning are shared through lectures and activities such as running, walking, swimming, and weight lifting. Prerequisite: student must be able to participate in course-required physical activities. Credit 1 unit.

PE 209. Independent Fitness and Conditioning

Students complete fitness testing at the beginning and end of the semester. Individual workout schedules are followed outside of class time. Class meets for lectures/discussion one day every other week on topics/issues of fitness and wellness. Prerequisite: PE 108, Introduction to Lifetime Fitness. Credit 1 unit.

PE 210. Topics in Physical Education:

Beginning Racquetball

Credit 1 unit.

PE 211. Topics in Physical Education:

Intermediate Racquetball

Credit 1 unit.

PE 212. Topics in Physical Education:

Intermediate and Advanced Basketball.

Designed to develop an appreciation for basketball through team competition and activity. Individual instruction and skill development are also available. Credit 1 unit.

PE 214. Topics in Physical Education:

Advanced Weight Training

Major emphasis on muscular strength and flexibility through free weight resistance exercise. Pre- and post-assessment of physical fitness levels may be established. Prerequisite: PE 215, Beginning Weight Training. Credit 1 unit.

PE 215. Weight Training: Beginning Weight Training.

Major emphasis on strength development. Credit 1 unit.

PE 216. Soccer

Designed to develop an appreciation for soccer through the development of soccer skills, concepts of group play and team competition.

Note: Eight- or nine-week course. All students who register must check in with the departmental office during the first two weeks of the semester. Credit 1 unit.

PE 220. Topics in Physical Education: Varsity Sports

Prerequisite: permission of the department. Credit 1 unit.

PE 2201. Fundamentals of Rowing for Fitness

This course focuses on the effective use of Concept II rowing machines as tools to learn the rowing stroke as well as to maintain aerobic fitness and develop strength. Emphasis is placed on the correct use of technique to decrease risk of injury; varying duration and intensity of work on the machine to develop different energy systems; using these new skills in developing lifetime fitness. Instruction includes the use of videotape and video monitoring. Athletic shoes and clothes that are not baggy are needed to participate. There is a minimum amount of running or light low-impact aerobic activity required as a warm-up. Credit 1 unit.

PE 221. Topics in Physical Education: Varsity Sports

Prerequisite: permission of the department. Credit 1 unit.

PE 232. Topics in Physical Education: High Intensity Conditioning

Varied program of high-intensity conditioning techniques designed for individual needs. Supervised areas covered are: cardiovascular and strength testing; weight training; plyometric training; flexibility and stretching, and aerobic and anaerobic training. Credit 1 unit.

PE 234. Topics in Physical Education:

Lifeguard Training

The course provides skill instruction and knowledge needed to prevent and respond to aquatic emergencies in a pool setting. Successful completion of requirements results in certification in American Red Cross Lifeguard Training for swimming pools, CPR, and First Aid. Prerequisite: swimming test given during the first week of class. Credit 1 unit.

PE 235. Topics in Physical Education: Step Aerobics

Section 01: Step Plus. Primarily designed around step aerobics with occasional workouts using

other fitness techniques, i.e., box aerobics, interval training.

Section 02: Combo Training. Combination of many fitness techniques, i.e., step aerobics, box aerobics, low-impact.

There is a fee of \$45.00 for this course. Credit 1 unit.

PE 236. Topics in Physical Education: Fitness And Conditioning

Students complete fitness testing at the beginning and end of the semester. Individual workout schedules are followed outside of class time.

Section 01. Step Plus. Primarily designed around step aerobics with occasional workouts using other fitness techniques; such as box aerobics, interval training.

Section 02. Combo Training. Combination of many fitness techniques, such as step aerobics, box aerobics, low-impact.

Prerequisite: PE 208. Credit 1 unit.

PE 237. Spinnin'

Credit 1 unit.

PE 238. Topics in Physical Education: Intermediate Volleyball

Credit 1 unit.

PE 239. Topics in Physical Education

Credit 1 unit.

PE 240. Topics in Physical Education: Beginning and Intermediate Tennis

Eight- or nine-week course. All students who register must check in with the departmental office during the first two weeks of the semester. Credit 1 unit.

PE 241. Topics in Physical Education: Beginning Tennis

Eight- or nine-week course. All students who register must check in with the departmental office during the first two weeks of the semester. Credit 1 unit.

PE 248. Topics in Physical Education: Individual Physical Education

Prerequisite: medical referral needed. Credit 1 unit.

PE 255. Topics in Physical Education: Practicum in Sports Leadership

Participation in formal leadership tasks under the direction of the Washington University Athletic department personnel. Selection of task and scope of work to be determined before enrollment by conference with instructor. Prerequisite: permission of the department. Credit 1 unit.

PE 258. Spinnin'

Music, stationary bicycles, and an instructor who cues you to ride through hills, valleys, and other terrain, changing resistance and pace to simulate different types of riding. All levels welcome—you can tailor the ride to fit your personal fitness goals and needs. A water bottle and towel are required for this class. There will be a \$45.00 fee. Credit 1 unit.

PE 291. Fundamentals of Athletic Training

Same as Educ 291.

Study of the duties of the athletic trainer, in relation to physical education classes, competitive sports, and recreation, including study and practice of First-Aid care and prevention of injuries. Credit variable, maximum 3 units.

PE 310. Water Safety Instructor

This course is designed to prepare aquatic professionals to teach progressive levels of swim lessons. Students learn to analyze human movement in the water and develop competency in class management, teaching, evaluation, safety, supervision, leadership, communication, and administrative of aquatic education programs. Successful

completion of all class requirements results in certification in American Red Cross Water Safety Instructor. Fee of \$175.00 covers all class books, supplies, and certificate processing. Prerequisite: advanced swimming skills and knowledge of water safety will be tested on the first day of class. The class is taught at the Center of Clayton facility. Credit 2 units.

PE 311. Emergency Medical Technician—Ambulance

Topics covered are those required by the State of Missouri for licensing. In addition to TTh sessions, attendance at two Saturday classes of eight hours each is mandatory (TBA). Also required are 24 hours of emergency room observation (TBA) and 10 hours internship (TBA). There is a fee of \$550.00 plus an additional \$114 for books and supplies payable to the IHM Health Center. Offered spring semester. Students provide their own transportation. Credit 3 units.

PE 312. Health and Wellness

The course provides current information related to health, wellness, and lifestyles. Students have the opportunity to explore their own attitudes, values, and beliefs associated with these topics. Credit 3 units.

A&S SS

PE 500. Independent Study in Physical Education or Health Education

Credit variable, maximum 3 units.

Physics

Chair

John W. Clark

Wayman Crow Professor of Physics in Arts & Sciences

Ph.D., Washington University

Endowed Professors

Kenneth F. Kelton

Arthur Holly Compton Professor of Physics
Ph.D., Harvard University

James G. Miller

Albert Gordon Hill Professor of Physics
Ph.D., Washington University

Stuart A. Solin

Charles M. Hohenberg Professor of Experimental Physics

Ph.D., Purdue University

Clifford M. Will

James S. McDonnell Professor of Physics
Ph.D., California Institute of Technology

Professors

Carl M. Bender

Ph.D., Harvard University

Claude W. Bernard

Ph.D., Harvard University

Thomas Bernatowicz

Ph.D., Washington University

James H. Buckley

Ph.D., University of Chicago

Anders E. Carlsson

Ph.D., Harvard University

Mark S. Conradi

Ph.D., Washington University

Ramanath Cowsik

Ph.D., University of Bombay

Willem H. Dickhoff

Ph.D., Free University, Amsterdam

Michael W. Friedlander

Ph.D., University of Bristol

Patrick C. Gibbons

Ph.D., Harvard University

Charles M. Hohenberg

Ph.D., University of California—Berkeley

Martin H. Israel

Ph.D., California Institute of Technology

Jonathan I. Katz

Ph.D., Cornell University

Kazimierz Luszczyński

Ph.D., University of London

Richard E. Norberg

Ph.D., University of Illinois

Michael C. Ogilvie

Ph.D., Brown University

James S. Schilling

Ph.D., University of Wisconsin—Madison

Wai-Mo Suen

Ph.D., California Institute of Technology

Joint Professors

Shankar M. L. Sastry

(Mechanical Engineering)

Ph.D., University of Toronto

Lee G. Sobotka

(Chemistry)

Ph.D., University of California–Berkeley

Associate Professor**Ralf Wessel**

Ph.D., University of Cambridge

Assistant Professors**Mark Alford**

Ph.D., Harvard University

Ramki Kalyanaraman

Ph.D., North Carolina State University

Henrik Krawczynski

Ph.D., University of Hamburg

Yan-Mei Wang

Ph.D., University of California–Berkeley

Lecturer**Rebecca L. Trousil**

Ph.D., Washington University

Professors Emeriti**Dan I. Bolef**

Ph.D., Columbia University

James H. Burgess

Ph.D., Washington University

Peter A. Fedders

Ph.D., Harvard University

Peter R. Phillips

Ph.D., Stanford University

John H. Scandrett

Ph.D., University of Wisconsin–Madison

J. Ely Shrauner

Ph.D., University of Chicago

Ronald K. Sundfors

Ph.D., Cornell University

Jonathan Townsend

Ph.D., Washington University

Physics is the discipline that deals with the most fundamental aspects of our universe, such as the properties of atoms, nuclei, and elementary particles, the nature of the forces between them, and the collective behavior of atoms in solids, liquids, and gases. It deals with the entire universe, from its birth to its ultimate fate. At the same time, physics provides the tools that help us to understand extremely complex everyday things, such as the behavior of sand piles, the strength of materials, or processes in the brain. Physics developed when people realized that nature operates according to simple mathematical rules; it seeks to discover and understand those rules. Its early successes in comprehending motion, thermodynamics, electricity, and magnetism provided a foundation on which other physical sciences have grown.

If you are planning a career in science and technology or to pursue graduate studies in physics, astronomy, earth sciences, environmental sciences, medical physics, meteorology, or oceanography, a major in physics provides a solid foundation. The program is sufficiently flexible to allow you to combine this major with a second major in chemistry, mathematics, or engineering, or with pre-medical studies and other disciplines in the

humanities and social sciences.

Our programs are designed to give you, in addition to the fundamentals of physics, a broad range of skills in laboratory techniques, critical thinking, computer use, and teamwork, which will serve you well in your chosen career. You may design a program of study, in consultation with your adviser, to meet your personal goals and interests. As a physics major, you are strongly encouraged to participate in physics research projects directed by faculty members.

The Physics 197-198 sequence is an advanced calculus-based introduction to physics intended for adequately prepared students interested in majoring in physics. An alternative sequence, Physics 117–118, may also be used to enter the major program but is primarily intended for students who want an introduction to the physical sciences and for those who are preparing for professional study of various kinds, including medicine. The latter sequence also fulfills the requirements of the College of Architecture.

The department offers several other courses of general interest to the nonscience student. In most cases these have no prerequisite. Most form part of natural science clusters.

The Major: As prerequisites for the major, you should complete Physics 197-198 or Physics 117-118 your first year. You should consider taking Physics 217, 316, 318, and 411 in your second year.

For the major, you are required to complete a minimum program of 21 units of advanced courses in physics. These 21 units must include Physics 322, 411, 421, and one other laboratory course, chosen from Physics 316, 321, 360, 451, and 452. The remaining three courses must be at the 300 and 400 levels, excluding Physics 303, 304, 341, and 342. You are also required to take Chemistry 111, 112, 151, and 152, preferably in your first year. Mathematics through Math 217 is required for the major. A 1-unit research seminar, Physics 482, is also required for the major.

If you are preparing for graduate study in physics or astronomy, you should consider taking, in addition to the above requirements, Physics 422, 463, and 471, as well as Physics 427, 464, 472, 474, 476, and additional laboratory courses. You also should consider additional mathematics and physics courses, including Physics/Math 501 and 502.

If you are preparing for employment after the A.B. degree, you should take additional laboratory courses from Physics 316, 320, 321, 451, and 452. Other courses that are particularly relevant are Physics 314, 350, 351, 355, 422, 427, 463, 471, and 472. You should also consider Chem 421, 435, and 436.

If you are preparing for medical school, you should give special consideration to Physics 314, 316, 321, 350, 351, and 355.

The Minor: You are required to complete Physics 197-198 or 117-118, together with 217, 318, and one additional 3-unit course at the 300 or 400 level for a total of 17 units.

The Biomedical Physics Minor: You are re-

quired to complete Physics 117-118 or 197-198; two courses from 314, 350, 351, and 355; and one course from 316, 321, and 322 and 360. New courses are being developed that will also satisfy these requirements.

Senior Honors: You are encouraged to work toward Honors in physics. To qualify, you must meet the academic requirements of the College and successfully complete a suitable project under the supervision of a faculty member in the department. The project, whether experimental or theoretical, should demonstrate your capacity for independent work. You must apply to the Undergraduate Studies Committee no later than the beginning of the senior year. Your application should include a description of the proposed project, co-signed by the supervising professor. A written report of the completed work must be submitted to the committee by a deadline in March. By enrolling in Physics 499, you may earn up to 6 units of credit for the Honors project.

Undergraduate Courses**Physics 101A. Basic Physical Science***Same as Physics 101.***Physics 102A. Physical Science***Same as Physics 102A.***Physics 107A. How Things Work**

Why is the sky blue? How can a baseball curve? Natural and man-made phenomena can be understood by simple and basic ideas of physics. This course illustrate these underlying principles by using examples from everyday life as well as from physics and other fields. Because the phenomena are many and the principles are few, we find that apparently very different events sometimes have similar explanations; we come to understand how the stretching of a rubber band is related to ice skating, and how the blue of the sky is related to the red of the sunset and the white color of milk. No prerequisites. Credit 3 units.

A&S NS QA FA NSM

Physics 110A. Awesome Ideas in Physics*Same as Physics 110.*

The ideas of physics that have revolutionized our perception of the world and reality. Emphasis is on understanding a selected set of crucial concepts without losing track of the numbers. Using the writings of Hawking, Feynman, and Lightman, a study is made of such topics as energy and conservation laws, the relativity of time, the wave-particle duality, the modern microscopic picture of matter at the smallest and the largest distance scales, and the history of the universe. Must be taken for a letter grade. No prerequisites. Credit 3 units.

A&S NS QA FA NSM

Physics 111. Variational Calculus—A Mathematical Blade for Cutting-Edge Science

Variational calculus, a fancy generalization of ordinary calculus, is the study of functionals, which are functions of functions. In ordinary calculus, which is the study of functions of numbers, one tries to find the number that extremizes (maximizes or minimizes) a function. In variational calculus, one tries to find the special function that extremizes a functional. Variational calculus dates back to the late 17th and 18th centuries when it was invented to solve the famous brachistochrone problem. The brachistochrone is the name given to the special path that a particle must follow to minimize its time of flight if it is falling from one point to another point not directly beneath it. Galileo incorrectly stated in 1638 that this path was an arc of a circle. The correct path was dis-

covered independently by Newton, Leibniz, l'Hopital, and the brothers Johann and Jakob Bernoulli. (Newton and Leibniz argued for years about whose solution was the earliest!) The applications of variational calculus are ubiquitous in modern science. Variational calculus is the mathematical setting for describing the physical world. In all areas of classical and quantum physics, the physical world is expressed in terms of functions that extremize specific functionals. In this seminar, variational calculus is explained at an elementary level and many of its applications in science are examined. A good understanding of elementary first-year calculus is required to take this seminar. Credit 3 units.

A&S NS QA

Physics 117A. General Physics I

Same as Physics 2110.

Introduction to the concepts, laws, and structure of physics. Mechanics, including Newton's laws, energy, linear momentum, angular momentum, the conservation laws, gravitational force, harmonic motion, wave motion, interference of waves, sound, the second law of thermodynamics, relativity. Prerequisite: previous or concurrent enrollment in Math 131 or permission of instructor. Three class hours and a two and one-half hour laboratory session a week. Credit 4 units.

A&S NS QA FA NSM

Physics 118A. General Physics II

Continuation of Physics 117A. Introduction to concepts, laws, and structure of physics: electricity and magnetism, electromagnetic forces, direct current circuits, capacitance and inductance, electromagnetic radiation, light, geometrical and physical optics, interference and diffraction, structure of matter. Prerequisite: Physics 117A or permission of instructor. Three class hours and a two and one-half hour laboratory session a week. Credit 4 units.

A&S NS QA FA NSM

Physics 125A. Solar System Astronomy

Same as Physics 125.

Designed for the nonscience major, this course deals with the planets, their moons and rings, comets, meteorites and interplanetary dust particles. In order to understand both classical astronomy and the results obtained from modern telescopes and the space program, basic scientific ideas (including optics and the laws of motion) are reviewed first. There will also be some discussion of astronomical history to show how we have arrived at our present ideas of the structure and evolution of the solar system. Prerequisite: High school algebra and trigonometry or concurrent enrollment in Math 131. Credit 3 units.

A&S NS QA FA NSM

Physics 126A. Stars, Galaxies, and Cosmology

Intended as a general survey for the nonscience major. Topics include the structure and evolution of stars, such as red giants, white dwarfs, neutron stars, pulsars, and black holes; galaxies, and quasars; and cosmology and the big bang theory. Prerequisite: high school algebra and trigonometry, or concurrent enrollment in Math 131. Credit 3 units.

A&S NS QA FA NSM

Physics 141. Selected Topics in Physics I

Topics of special interest (e.g., superconductivity, quasicrystals, neural networks, chaos, etc.) may be studied under the supervision of a faculty member, variously by lectures, seminars, or individual study or research. Students hoping to arrange such a course must prepare a proposal and secure consent to undertake direction of the course from a faculty member and finally secure approval of the department chair. Credit variable, maximum 3 units.

A&S NS FA NSM

Physics 142. Selected Topics in Physics I

Topics of special interest (e.g., holography, relativity, nuclear power, computer applications in physics, etc.) may be studied under the supervision of a faculty member, variously by lectures, seminars, or individual study or research. Students hoping to arrange such a course must prepare a proposal and secure the instructor's consent to undertake direction of the course from a faculty member and finally secure approval of the department chair. Credit variable, maximum 3 units.

A&S NS FA NSM

Physics 171A. Physics and Society

Same as EnSt 272A.

Introduction to physics: its goals, methods, and relevance for society. Topics include energy as a unifying principle of physics and society's use of energy: resources and costs. Nuclear energy: history, technology, radiation, waste, weapons. Global climate change: the greenhouse effect, the hole in the ozone layer. Science and government. Bad science, pseudoscience, antiscience. Intended for science and nonscience majors. Must be taken for a letter grade. Credit 3 units.

A&S NS QA FA NSM

Physics 197. Physics I

An advanced introduction to central concepts in physics for students who desire to major in physics or another physical science, or who have a special interest in physics. The course is structured around three themes that are treated in depth: conservation laws, Newtonian physics, and special relativity. The course structure emphasizes active learning and problem solving by the student. Co-requisite: Math 132 (Calculus II) or permission of the instructor. Concurrent registration in a Physics 117 lab section is required. Students who are enrolled in or have already taken Physics 117 are ineligible for enrollment in this course. Credit 4 units.

A&S NS

Physics 198. Physics II

Continuation of Physics 197. An advanced introduction to central concepts in physics for students who desire to major in physics or another physical science, or who have a special interest in physics. The course is structured around three themes that are treated in depth: electricity and magnetism, quantum physics, and statistical and thermal physics. The course structure emphasizes active learning and problem solving by the student. Prerequisites: Physics 197 and Calculus II, or permission of the instructor. Concurrent registration in a Physics 118 lab section is required. Students who

A&S Requirements for College of Arts & Sciences students (for more information, see page 27).

CD = Cultural Diversity

LA = Languages and the Arts

NS = Natural Sciences and Mathematics

QA = Quantitative Analysis

SD = Social Differentiation

SS = Social Sciences

TH = Textual and Historical Studies

WI = Writing-Intensive Course

FA Requirements for College of Art students (for more information, see page 305).

AH = Art History

Comp = English Composition

Lit = Literature

NSM = Natural Sciences or Mathematics

SSP = Social Sciences or Philosophy

are enrolled in or have already taken Physics 118 are ineligible for enrollment in this course. Credit 4 units.

A&S NS

Physics 210A. Epic of Evolution: Life, Earth, and the Cosmos

Same as EPSc 210A.

A&S NS FA NSM

Physics 216. Introduction to Relativity: The Special Theory

Same as Physics 216.

Introduction to the special and general theories of relativity. Einstein's postulates of the principle of relativity and the constancy of the speed of light. Simple kinematics and dynamics: simultaneity, time dilation, space-time diagrams, twin and other "paradoxes," $E = mc^2$, laws of motion. Elements of general relativity; curved space-time, experimental tests, black holes, gravitational waves. Prerequisite: Physics 117A or permission of the instructor. Credit 1 unit.

A&S NS FA NSM

Physics 217. Introduction to Quantum Physics

Theoretical and experimental basis for quantum mechanics, following the historical development of 20th-century physics. Failure of classical physics; the Bohr theory of the atom; the Heisenberg uncertainty principle; the Schrodinger equation; atomic and molecular structure. Prerequisites: Physics 117A and 118A. Credit 3 units.

A&S NS FA NSM

Physics 241. Select Topics in Physics II

Topics of special interest (e.g., superconductivity, quasicrystals, neural networks, chaos, etc.) may be studied under the supervision of a faculty member, variously by lectures, seminars, or individual study or research. Students hoping to arrange such a course must prepare a proposal and secure consent to undertake direction of the course from a faculty member and finally secure approval of the department chair. Credit variable, maximum 3 units.

A&S NS FA NSM

Physics 242. Selected Topics in Physics II

Topics of special interest (e.g., holography, relativity, nuclear power, computer applications in physics, etc.) may be studied under the supervision of a faculty member, variously by lectures, seminars, or individual study or research. Students hoping to arrange such a course must prepare a proposal and secure the instructor's consent to undertake direction of the course from a faculty member and finally secure approval of the department chair. Credit variable, maximum 3 units.

A&S NS FA NSM

Physics 303A. Introduction to Modern Physics

Designed specifically for students who are not physics majors. This is a course emphasizing a variety of topics in modern physics such as the special and general theories of relativity, the Big Bang theory, quantum physics, the wave-particle duality for light and matter, lasers and superconductivity, and elementary particle physics. This course does not count toward a major in physics. Prerequisites: high-school algebra and trigonometry and sophomore standing. Credit 3 units.

A&S NS FA NSM

Physics 304A. Physics and Controversy: Galileo, Newton, and O

A focus on the controversies surrounding these scientists, as their effects on society became apparent. For each, there is an introduction to the basic science so that the social implications of the work can be understood in context. No prior knowledge of physics is assumed. Prerequisites: high school algebra and sophomore standing. Must be taken for grade. Credit 3 units.

A&S NS FA NSM

Physics 312. Introduction to Astrophysics

Introduction to modern astronomy and astrophysics: stellar structure and evolution, nucleosynthesis, galactic structure, cosmology. Prerequisites: Physics 117A and 118A or permission of instructor. Credit 3 units.

A&S NS FA NSM

Physics 314. Physics of the Heart

Same as BME 314.

A lecture and demonstration course that may be of particular interest to premedical and life-science students. Basic physics of the human cardiovascular system. Elasticity of vessels: properties of elastin and collagen. Energetics of the circulation: arterial and venous blood pressure, total fluid energy, gravitational potential energy, kinetic energy. Streamline flow and turbulence: effects of stenosis. Static and dynamic energy consumption of the heart: cardiac efficiency, the tension-time integral, Laplace's law, Starling's law. Metabolism of cardiac muscle. Electrophysiology: the heartbeat and cardiac arrhythmias. The physics of phonocardiograms, echocardiograms, and other noninvasive techniques for physical assessment of cardiac abnormalities, including ischemia and myocardial infarction. Models of mechanical properties: contractile element, series elastic and parallel elastic elements. Prerequisite: prior completion (or concurrent registration in) Physics 118A or permission of instructor. Credit 3 units.

A&S NS FA NSM

Physics 316. Optics and Wave Physics**Laboratory**

Introduction to optics and to treatment of experimental data. Experiments and lectures on refraction, interference, diffraction, polarization, and coherence properties of waves with emphasis on light. Data analysis using statistical methods. Prerequisite: Physics 117A, 118A. Credit 3 units.

A&S NS FA NSM

Physics 318. Introduction to Quantum**Physics II**

Application of elementary quantum principles to atomic and molecular physics, solid-state physics, and nuclear and particle physics. Prerequisite: Physics 217. Credit 3 units.

A&S NS FA NSM

Physics 321. Electronics Laboratory

Elements of linear and nonlinear circuits, amplifiers, feedback, with applications in experimental physics. Prerequisite: Physics 118A, or permission of instructor. Two three-hour laboratories and two one-hour lectures a week. Credit 3 units.

A&S NS FA NSM

Physics 322. Physical Measurement Laboratory

A variety of classical and modern experiments in physics including three experiments in nuclear radiation and four experiments with biophysical content. Use of computers in experiment control, data acquisition, and data analysis. Development of skills in writing lab notebooks and formal reports and giving short oral reports on experiments. Prerequisites: Physics 318 and Physics 321 or permission of the instructor. Two lab periods and one discussion period per week. Credit 3 units.

A&S NS WI FA NSM

Physics 341. Selected Topics in Physics III

Topics of special interest (e.g., superconductivity, quasicrystals, neural networks, chaos, etc.) may be studied under the supervision of a faculty member, variously by lectures, seminars, or individual study or research. Students hoping to arrange such a course must prepare a proposal and secure consent to undertake direction of the course from a faculty member and finally secure approval of the department chair. Credit variable, maximum 3 units.

A&S NS FA NSM

Physics 342. Selected Topics in Physics III

Topics of special interest (e.g., holography, relativity, nuclear power, computer application in physics, etc.) may be studied under the supervision of a faculty member, variously by lectures, seminars, or individual study or research. Students hoping to arrange such a course must prepare a proposal and secure the instructor's consent to undertake direction of the course from a faculty member and finally secure approval of the department chair. Credit variable, maximum 3 units.

A&S NS FA NSM

Physics 350. Physics of the Brain

Same as PNP 350.

Concepts and techniques of physics are applied to study the functioning of neurons and neuronal circuits in the brain. Neurons and neural systems are modeled at two levels: (i) at the physical level, in terms of the electrical and chemical signals that are generated and transmitted and (ii) at the information-processing level, in terms of the computational tasks performed. Specific topics include: neuronal electrophysiology, neural codes, neural plasticity, sensory processing, neural network architectures and learning algorithms, and neural networks as dynamical and statistical systems. Course grade is based primarily on an individualized term project. Prerequisite: Physics 117A, 118A or permission of the instructor. Credit 3 units.

A&S NS FA NSM

Physics 351. Introduction to Biomedical Physics

Principles and application of key physical methods used in the diagnosis and treatment of diseases, and in biomedical research. Topics include interaction of radiation with living systems; fundamentals of optical and electron microscopy; imaging via X-rays, magnetic resonance, and ultrasound; and electrical properties of organs and cells. Prerequisite: Physics 117-118. Credit 3 units.

A&S NS FA NSM

Physics 355. Physics of Vision

Same as PNP 355.

How do the eyes capture an image and convert it to neural messages that ultimately result in visual experience? This lecture and demonstration course covers the physics of how we see. The course is addressed to physics, premedical, and life-sciences students with an interest in biophysics. Topics include physical properties of light, evolution of the eyes, image formation in the eye, image sampling with an array of photoreceptors, transducing light into electrical signals, color coding, retinal organization, computing with nerve cells, compressing the 3-dimensional world into optic nerve signals, inferring the 3-dimensional world from optic nerve signals, biomechanics of eye movement, engineered vision in machines. The functional impact of biophysical mechanisms for visual experience will be illustrated with psychophysical demonstrations. Prerequisite: prior completion of (or concurrent registration in) Physics 117A or permission of instructor. Credit 3 units.

A&S NS FA NSM

Physics 360. Biophysics Laboratory

This laboratory course consists of "table-top" experiments in biological physics that are designed to introduce the student to concepts, methods, and biological model systems in biophysics. Most experiments combine experimentation with computer simulations. The list of available experiments includes electrophysiology, human bioelectricity, optical tweezers, ultrasonic imaging, mass spectrometer, and viscosity measurements. Prerequisite: Prior completion of Physics 117A, 118A, or permission of instructor. Credit 3 units.

A&S NS

Physics 411. Mechanics

Motion of a point particle, rotational motion, oscillation, gravitation and central forces, Lagrangian and Hamiltonian formulation. Prerequisites: Physics 117A, 118A and Math 217 or permission of instructor. Credit 3 units.

A&S NS FA NSM

Physics 421. Electricity and Magnetism

Starting from Coulomb's law, the Biot-Savart law, and Faraday's law, the electrical and magnetic fields are defined and applied. Maxwell's equations are derived and their consequences, such as electromagnetic waves and relativity, are explored. Prerequisites: Physics 117A, 118A and Math 217 or permission of instructor. Credit 3 units.

A&S NS FA NSM

Physics 422. Electricity and Magnetism II

Applications of Maxwell's equations: dielectric and magnetic materials, potential theory, generation and propagation of electromagnetic waves, reflection, refraction, waveguides, antennas. Prerequisite: permission of instructor. Credit 3 units.

A&S NS FA NSM

Physics 427. Introduction to Computational Physics

Lectures and hands-on experience in computational physics combining topics in numerical analysis, algorithms, statistics, visualization, and computer algebra with projects in contemporary areas of physics. Prerequisites: Physics 217 or equivalent and familiarity with a programming language. Credit 3 units.

A&S NS FA NSM

Physics 441. Selected Topics in Physics IV

Topics of special interest (e.g., holography, relativity, nuclear power, computer applications in physics, etc.) may be studied under the supervision of a faculty member, variously by lectures, seminars, or individual study or research. Students hoping to arrange such a course must prepare a proposal and secure the instructor's consent to undertake direction of the course from a faculty member and finally secure approval of the department chair. Credit 3 units.

A&S NS FA NSM

Physics 442. Selected Topics in Physics IV

Topics of special interest (e.g., holography, relativity, nuclear power, computer applications in physics, etc.) may be studied under the supervision of a faculty member, variously by lectures, seminars, or individual study or research. Students hoping to arrange such a course must prepare a proposal and secure the instructor's consent to undertake direction of the course from a faculty member and finally secure approval of the department chair. Credit variable, maximum 3 units.

A&S NS FA NSM

Physics 450. Physics of the Brain

Contents are the same as Physics 350. Also intended for graduate students. Includes a more sophisticated term project than Physics 350. Prerequisite: Physics 117A, 118A, or permission of instructor. Credit 3 units.

A&S NS FA NSM

Physics 451. Advanced Laboratory I

Applications of analog and digital electronics and microprocessor techniques, followed by projects in modern physics with concurrent lectures on methods of experimental physics. Prerequisite: Physics 322 or permission of instructor. Two laboratories a week. Credit 3 units.

A&S NS FA NSM

Physics 452. Advanced Laboratory II

Applications of analog and digital electronics and microprocessor techniques, followed by projects in modern physics with concurrent lectures on

methods of experimental physics. Prerequisite: Physics 322 or permission of instructor. Two laboratories a week. Credit 3 units.

A&S NS WI FA NSM

Physics 455. Physics of Vision

How do the eyes capture an image and convert it to neural messages that ultimately result in visual experience? This lecture and demonstration course covers the physics of how we see. The course is addressed to physics, premedical, and life-sciences students with an interest in biophysics. Topics include physical properties of light, evolution of the eyes, image formation in the eye, image sampling with an array of photoreceptors, transducing light into electrical signals, color coding, retinal organization, computing with nerve cells, compressing the 3-dimensional world into optic nerve signals, inferring the 3-dimensional world from optic nerve signals, biomechanics of eye movement, engineered vision in machines. The functional impact of biophysical mechanisms for visual experience will be illustrated with psychophysical demonstrations. Prerequisite: prior completion of (or concurrent registration in) Physics 117A or permission of instructor. Credit 3 units.

A&S NS FA NSM

Physics 463. Statistical Mechanics and Thermodynamics

Basic methods of classical and quantum statistical mechanics, thermodynamics, and transport theory. Prerequisite: Physics 217 or permission of instructor. Credit 3 units.

A&S NS FA NSM

Physics 464. Mechanics of Continuous Media

Fundamentals of fluid dynamics. Generation propagation and detection of acoustic waves in fluids and solids. Elastic, thermal, and piezoelectric properties of isotropic and anisotropic solids. Prerequisites: vector calculus and intermediate thermodynamics or permission of instructor. Credit 3 units.

A&S NS FA NSM

Physics 471. Quantum Mechanics

Same as ESE 431.

Origins of quantum theory, wave packets and uncertainty relations, Schroedinger's equation in one dimension, step potentials and harmonic oscillators, eigenfunctions and eigenvalues, Schroedinger's equation in three dimensions, the hydrogen atom, symmetry, spin and the periodic table, approximation methods for time independent problems, quantum statistics. Prerequisites: Math 217, Physics 217, and Physics 421 or permission of instructor. Credit 3 units.

A&S NS FA NSM

Physics 472. Solid State Physics

Crystal structures, binding energies, thermal properties, dielectrics, magnetism, free electron theory of metals, band theory, semiconductors, defects in solids. Prerequisite: Physics 471. Credit 3 units.

A&S NS FA NSM

Physics 474. Introduction to Nuclear and Particle Physics

Basic properties of nuclei, particle scattering, radioactivity, systematics of nuclear stability, nuclear reactions, nuclear models, nuclear forces, elementary particles. Prerequisite: Physics 471. Credit 3 units.

A&S NS FA NSM

Physics 476. Astrophysics

Physical processes in stars; stellar populations; birth, evolution, and death of stars; energy generation; nucleosynthesis; variable stars; supernovae; collapsed objects; selected topics in galactic astrophysics, cosmology, and exobiology. Prerequisites: Physics 411, 421, and 463, or permission of instructor. Credit 3 units.

A&S NS FA NSM

Physics 478. From Black Holes to the Big Bang

An introduction to general relativity. The goal is to illustrate important features of general relativity without the full-blown mathematics of Einstein's equations, by restricting attention to spherically symmetric space-times. Topics include: principle of equivalence; curved space-time; spherical stars and black holes; the Big Bang model, observational cosmology. Prerequisite: Physics 411 or permission of instructor. Credit 3 units.

A&S NS FA NSM

Physics 482. Research Seminar

Designed to introduce students to current developments in physics and to research carried out by faculty. Topics vary each year. Each member of the department addresses issues in his/her particular specialty. Required of all majors and first-year graduate students. Undergraduates are advised to take this seminar in their junior year. Credit 1 unit.

A&S NS FA NSM

Physics 499. Honors Program

Prerequisites: junior standing, an average grade of B or better, and permission of the department chair. Program and credit to be determined. Credit variable, maximum 6 units.

A&S NS FA NSM

Physics 500. Independent Work

Prerequisites: senior standing and permission of the department chair. Program and credit to be determined. Credit variable, maximum 6 units.

Physics 501. Theoretical Physics

Same as Math 501.

The first part of a two-semester course reviewing the mathematical methods essential for the study of physics. Theory of functions of a complex variable, residue theory; review of ordinary differential equations; introduction to partial differential equations; integral transforms. Prerequisite: undergraduate differential equations (Math 217) or permission of instructor. Credit 3 units.

Physics 502. Methods of Theoretical Physics II

Same as Math 502.

Continuation of Physics 501. Introduction to function spaces; self-adjoint and unitary operators; eigenvalue problems, partial differential equations, special functions; integral equations; introduction to group theory. Prerequisite: Physics 501 or permission of instructor. Credit 3 units.

Political Economy

Director

Norman J. Schofield

William Taussig Professor of Political Economy

(Economics)

Ph.D.s, Government and Economics, Essex University, Litt.D., Liverpool University, Doctorate in Economic Sciences, Université de Caen

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Spencer T. Olin Professor in Arts & Sciences (Economics)

Ph.D., University of California–Berkeley

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(Economics)

Ph.D., Massachusetts Institute of Technology

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(Economics)

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Marcus Berliant

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Sunita Parikh

(Political Science)
Ph.D., University of Chicago

Guillermo Rosas

(Political Science)
Ph.D., Duke University

Andrew Sobel

(Political Science)
Ph.D., University of Michigan

Assistant Professors**Ethan Bueno De Mesquita**

(Political Science)
Ph.D., Harvard

Nathan Jensen

(Political Science)
Ph.D., Yale

Andrew Mertha

(Political Science)
Ph.D., University of Michigan

Andrew Rehfeld

(Political Science)
Ph.D., University of Chicago

The program in Political Economy offers students majoring in economics or political science an interdisciplinary second major that provides the opportunity to gain an understanding of the theoretical bases of both fields and to undertake research on current policy issues in political economy.

Students majoring in political science gain an appreciation of the deductive methods of economics and the role of economic forces in politics. Economics majors see the wider applicability of economic theory and learn how politics interact with economic behavior in the real world.

This approach to political economy emphasizes (1) theories of individual and group decision making and (2) the effect of institutional structure on the performance of economic and political systems. Perspectives gained in these core areas can enrich students' further study of such diverse fields as public policy making, economic history, American political institutions, and industrial organization.

Central to the program is the senior seminar, taught by one of the faculty members of the Center in Political Economy. Enrollment in the senior seminar is restricted to seniors who are second majors in political economy and to senior economics and political science students with strong backgrounds in both fields. New theoretical developments and recent empirical studies in political economy form the foundation of the seminar. Students prepare term papers that demonstrate their ability both to understand theory and to apply it to substantive issues.

Students choosing political economy as a second major will be especially well prepared for graduate study in economics, political science, or business, and for both academic and nonacademic careers in policy analysis, business administration, law, governmental relations, and other fields.

Second Major: A student majoring in economics or political science who selects a second major in political economy is assigned an adviser from the program who as-

sists in organizing the student's course of study.

Requirements are as follows:

1. At least 18 units of approved courses at the 300 level or above. None of the 18 units may be counted toward the first major, and no more than 3 of the 18 units may be earned in the department of the first major.

Economics majors must include among the 18 units of required credit at least 9 units of political science; political science majors must include at least 9 units of economics.

Published prerequisites for courses numbered 300 and above must be fulfilled to satisfy the requirements for enrollment (including Econ 103B, 104B, 401, or 402). Econ 103B, 104B may not be counted toward the 18-unit requirement.

2. At least 3 units of credit in each of the core areas of the program; namely

- (1) theory of decision making and
- (2) institutions.

3. Senior Seminar in Political Economy (Pol Econ 498) in addition to the 18 required units (see above).

Honors Program: Students with a strong record of academic achievement may apply for the Honors program at the end of the junior year. First majors in economics with the second major in political economy are asked to complete 12 units of political science, completing 21 rather than 18 hours in the second major. Three of the four political science courses required are to be completed at the 400 or 500 level. First majors in political science with the second major in political economy are asked to complete 12 units of economics, choosing either Price Theory (Econ 401) or Income and Employment Theory (Econ 402), also completing 21 rather than 18 hours in the second major. Two of the four economics courses must be taken at the 400 level.

Honors students are also required to enroll in Honors Research (Pol Econ 488) and to complete a thesis (approximately 40 pages or 10,000 words) based on research undertaken under the supervision of one of the fellows of the Center in Political Economy. Interested students should see the director of the program to discuss research projects.

Undergraduate Courses**Pol Econ 3103. Topics in Politics**

Same as Pol Sci 3103.

A&S SS **FA** SSP

Pol Econ 3131. Russian Politics

Same as Pol Sci 3131.

A&S SS **FA** SSP

Pol Econ 353. The Economics of the Law

Same as Econ 353.

A&S SS **FA** SSP

Pol Econ 3781. Topics in Politics: Israeli Politics

Same as Pol Sci 3781.

A&S CD SS **FA** SSP

Pol Econ 401. Price Theory

Same as Econ 401.

A&S SS **FA** SSP

Pol Econ 402. Income and Employment Theory

Same as Econ 402.

A&S SS **FA** SSP

Pol Econ 413. Introduction to Econometrics

Same as Econ 413.

A&S SS **FA** SSP

Pol Econ 435. Open Economy Macroeconomics

Same as Econ 435.

A&S SS **FA** SSP

Pol Econ 451. Environmental Policy

Same as Econ 451.

A&S SS **FA** SSP

Pol Econ 458. The Theory of Property Rights

Same as Econ 458.

A&S SS **FA** SSP

Pol Econ 467. Game Theory

Same as Econ 467.

A&S SS **FA** SSP

Pol Econ 488. Honors Thesis Research

Adviser's approval required. Credit 3 units.

A&S SS

Pol Econ 490. Independent Study

Prerequisite: permission of department. Credit variable, maximum 6 units.

Pol Econ 495. Readings in Political Economy

By arrangement with Political Economy Faculty. Credit variable, maximum 3 units.

Pol Econ 498. Senior Seminar in Political Economy

Same as Pol Sci 498.

Special topics in the theory and applications of political economy. Property rights theory and topics from the theory of games, with applications to economic history, development politics, American political institutions, and other fields. Each student is responsible for class presentation of research in one of these theoretical or applied areas. Required for the second major in Political Economy. Credit 3 units.

A&S SS

Pol Econ 499. Senior Honors Thesis

Independent research for Honors thesis. Students individually investigate a topic under the supervision of a Political Economy faculty sponsor. Credit 3 units.

Political Science

Chair

Itai Sened, Professor
Ph.D., University of Rochester

Endowed Professors

Randall Calvert
Thomas F. Eagleton University Professor of
Public Affairs and Political Science
Ph.D., California Institute of Technology

James L. Gibson
Sidney W. Souers Professor of Government
Ph.D., University of Iowa

Jack Knight
Sidney W. Souers Professor of Government
Ph.D., University of Chicago

Norman J. Schofield
William Taussig Professor of Political
Economy
Ph.D., Essex University

Steven S. Smith
Kate M. Gregg Professor of Social Sciences
and Director of the Weidenbaum Center on
the Economy, Government, and Public Policy
Ph.D., University of Minnesota

Professors

William R. Lowry
Ph.D., Stanford University

Gary J. Miller
Ph.D., University of Texas–Austin

Associate Professors

Brian F. Crisp
Ph.D., University of Michigan

Matthew Gabel
Ph.D., University of Rochester

Andrew Martin
Ph.D., Washington University

Sunita Parikh
Ph.D., University of Chicago

Andrew Sobel
Ph.D., University of Michigan

Assistant Professors

Ethan Bueno de Mesquita
Ph.D., Harvard University
Ph.D., Yale University

Mona L. Krook
Ph.D., Columbia University

Francis Lovett
Ph.D., Columbia University

Andrew Mertha
Ph.D., University of Michigan

Michael Minta
Ph.D., University of Michigan

David Park
Ph.D., Columbia University

Andrew Rehfeld
Ph.D., University of Chicago

Guillermo Rosas
Ph.D., Duke University

Professors Emeriti

Marvin J. Cummins
Ph.D., University of Colorado

James W. Davis
Ph.D., University of Michigan

John H. Kautsky
Ph.D., Harvard University

Victor T. Le Vine
Ph.D., University of California–Los Angeles

Robert H. Salisbury
Sidney W. Souers Professor Emeritus of
Government
Ph.D., University of Illinois–Urbana

John Sprague
Ph.D., Stanford University

Political science offers you the opportunity to explore the study of political life within the context of a broad liberal arts education. This diverse program of study provides you with a strong foundation in social science research methods and with experience in assessing political events from both a theoretical and empirical perspective.

When you major in political science, you take courses in the areas of American politics, comparative politics, international politics, political and social theory, and formal and mathematical approaches to politics. You also may choose to design an independent study course that addresses your individual interests and concerns.

Because political science is a broad discipline, you may choose to combine the major with such related fields as African and African American studies; anthropology; economics; environmental studies; history; international studies; Jewish, Islamic, and Near Eastern studies; Latin American studies; philosophy; psychology; and women and gender studies.

You may pursue individual study in political science with faculty members through directed readings, research, and fieldwork. As a political science major, you may take advantage of internships available within the St. Louis community, at the Washington Center in Washington, D.C., and at the New York State Assembly. The department features intensive Honors seminars on particular topics. The Undergraduate Political Science Association is an active organization that meets regularly.

Majoring in political science can prepare you well for professional training and advanced study in law, business, education, journalism, policy analysis, political science, public administration, social work, and urban planning. Political science graduates enter careers in business; federal, state, and local government agencies; media; and public and private organizations.

The Major: You are required to complete a minimum of 30 graded units in political science, including at least 18 units at the 300 and 400 levels. Of these 18 units, you must complete one 3-unit course from three of the following five fields (for a total of 9 units): American politics and government; comparative politics; international politics; political

and social theory; and methods of political research and analysis. All majors are required to take at least 6 units of introductory course work (Pol Sci 101B, 102B, or 103B); as well as a 200- or 300-level course on research methods within the department. No more than 6 of the 30 units may be from directed readings, research, or fieldwork or internships.

For more detailed information about the political science major, you should contact the department or consult the handbook for political science majors, *Guide to Undergraduate Study*, the departmental bulletin board, or the departmental newsletter.

The Minor: You are required to complete a minimum of 15 graded units in political science, including at least 9 units from the 300 and 400 levels. No more than 3 units may be from directed readings, research, or fieldwork or internships.

Senior Honors: You are encouraged to work toward Senior Honors. You must apply during your junior year for admission, which must be approved by a departmental Honors committee. To qualify for Honors, you must meet specific requirements, including enrolling in an Honors seminar and completing a thesis under the supervision of a faculty member. You may receive up to 6 units of credit for Honors Thesis (Pol Sci 415).

Undergraduate Courses

Pol Sci 101B. American Politics

Same as Lw St 101B, AMCS 101B.

This course provides an overview of the politics of the American system of government. Among the topics to be covered are the historical developments of American politics, federalism, political participation (voting, interest groups, parties), institutions (congress, the courts, the president), and public opinion. A theme underlying our examination of these and other topics is the fact that political actors are purposive in their strategic pursuit of various objectives. We explore the many impacts this aspect of political behavior has on institutions and the interactions between political actors throughout the American political system. Credit 3 units.

A&S SS FA SSP

Pol Sci 102B. Comparative Politics

Same as Lw St 102B.

One of the primary goals of a course in comparative politics is to familiarize students with a broad array of political systems. The approach taken in this course can best be characterized as the active acquisition and use of a set of tools for looking at the political world. In other words, instead of putting emphasis on what textbook writers think political scientists know, in this course the emphasis is on “how we know what we know” and on building knowledge. This approach equips students with a set of tools to use long after the course is over. These comparative tools are focused on historical, recent, and current events, and students are provided the opportunity to delve more deeply into a study of the parts of the world most they find most interesting. Credit 3 units.

A&S SS FA SSP

Pol Sci 103B. International Politics

Same as Pol Sci 103B.

Globalization, the accelerating rate of interaction between people of different countries, creates a qualitative shift in the relationship between nation-states and national economies. Conflict and war is one form of international interaction.

Movement of capital, goods, services, production, information, disease, environmental degradation, and people across national boundaries are other forms of international interactions. This course introduces the study of global political-economic relations. We focus upon building a toolkit that will help us understand the micro-foundations of the globalization of material and social relations. Credit 3 units.

A&S SS FA SSP

Pol Sci 1041. Freshman Seminar: Introduction to Political Theory I

Why is democracy a good form of government? What if a benevolent dictator arose who wrote and enforced laws that were just and equitable? What if she honored the sanctity of human life and its flourishing, guaranteed a full range of liberties to her citizens—including political ones, such as the right of free speech and organization (but not including the right to rule)? Given the problems of most living democracies, why wouldn't this be a better regime than a democratic one? And are people really capable of governing themselves anyway; why should we trust them so? In short, what's so special about "democracy" and its corresponding idol, "public opinion," that people bow to them as hallowed virtues of a good society? In this class we provide a framework in which these and other central questions of political theory have been and can be addressed. This course is designed to introduce students to the main theoretical issues of Western political theory, including but not limited to the following concepts: justice, legitimacy, equality, democracy, liberty, sovereignty, and the role of history in the political and social world. In short, the questions are meant to explore the underlying assumptions and themes of contemporary politics and political science research today. The course is designed around the careful reading of primary text materials and engagement with contemporary problems of politics available on the front pages of any daily newspaper. Although designed as a two-semester class, students may enroll in either one or both. In this first semester we lay out the fundamental themes of political theory in Plato's *Republic* and Aristotle's *Politics* asking, among other things, what justice is and what place democracy has among other forms of government. Passing briefly on Augustine and Aquinas' struggle with religion and civil society, we emerge in modernity with Machiavelli's *Prince* and question whether the "good" and the "political" are or ought to be different aims. We conclude the semester with the social contract theory of Hobbes and Locke in which political legitimacy is based on the terms familiar to citizens of modernity: the right to rule is somehow related to a citizen's consent to be governed. In the spring semester we turn to the struggle that modernity and the Enlightenment raised for issues of politics including that of history, nature, institution building, and economics, guided by the texts of Rousseau, Hamilton and Madison, Tocqueville, Mill, Marx, Nietzsche, and Weber. Credit 3 units.

A&S SS

Pol Sci 106. Introduction to Political Theory: Classics of Social and Political Thought

Same as Pol Sci 1041.

Why is democracy a good form of government? What if a benevolent dictator arose who wrote and enforced laws that were just and equitable? What if she honored the sanctity of human life and its flourishing, guaranteed a full range of liberties to her citizens—including political ones, like the right of free speech and organization (but not including the right to rule)? Given the problems of most living democracies, why wouldn't this be a better regime than a democratic one? And are people really capable of governing themselves anyway; why should we trust them so? In short, what's so special about "democracy" and its corre-

sponding idol, "public opinion," that people bow to them as hallowed virtues of a good society? In this class we provide a framework in which these and other central questions of political theory have been and can be addressed. This course is designed to introduce students to the main theoretical issues of Western political theory, including but not limited to the following concepts: justice, legitimacy, equality, democracy, liberty, sovereignty and the role of history in the political and social world. In short, the questions are meant to explore the underlying assumptions and themes of contemporary politics and political science research today. The course is designed around the careful reading of primary text materials and engagement with contemporary problems of politics available on the front pages of any daily newspaper. Although designed as a two-semester class, students may enroll in either one or both. In this first semester we lay out the fundamental themes of political theory in Plato's *Republic* and Aristotle's *Politics* asking, among other things, what justice is and what place democracy has among other forms of government. Passing briefly on Augustine and Aquinas' struggle with religion and civil society, we emerge in modernity with Machiavelli's *Prince* and question whether the "good" and the "political" are or ought to be different aims. We conclude the semester with the social contract theory of Hobbes and Locke in which political legitimacy is based on the terms familiar to citizens of modernity: the right to rule is somehow related to a citizen's consent to be governed. In the spring semester we turn to the struggle that modernity and the Enlightenment raised for issues of politics including that of history, nature, institution building, and economics, guided by the texts of Rousseau, Hamilton and Madison, Tocqueville, Mill, Marx, Nietzsche, and Weber. Prerequisites: Preference given to freshmen and sophomores. Juniors and seniors by permission of instructor. Credit 3 units.

A&S SS

Pol Sci 107. Introduction to Political Theory II
Same as Lw St 108, STA 127, Phil 108.

If a majority of citizens wanted to elect a tyrant, should we allow it? If not, are we really committed to democracy and political equality? What role do institutions play in limiting and protecting the rights of individuals against the democratic state without giving up a commitment to majority rule? And why should we share modernity's commitment to democracy and political equality? What was lost in the move from pre-modern conceptions of a natural or divine order (represented in the rule by aristocracies and monarchies) to more "reasoned" and "enlightened" sensibilities? Has this move toward democracy and equality been inevitable? Is the dominance of democracy—and capitalism more generally—a mere step toward some other end state, or does it indeed represent the "end of history"? In this class we provide a framework in which these and other central questions of political theory have been and can be addressed. This course is designed to introduce students to the main theoretical issues of Western political theory, including but not limited to the following concepts: justice, legitimacy, equality, democracy, liberty, sovereignty and the role of history in the political and social world. In short, the questions are meant to explore the underlying assumptions and themes of contemporary politics and political science research today. The course is designed around the careful reading of primary text materials and engagement with contemporary problems of politics available on the front pages of any daily newspaper. Although designed as a two-semester class students may enroll in either one or both. In this second semester we begin with Rousseau's critique of modernity and his corre-

sponding construction of the "General Will." We continue with the new institutionalism represented by Madison and Hamilton in *The Federalist* where, among other things we see the institutional struggle to contain the tyranny of democratic government, that of majority rule. We continue with Tocqueville's *Democracy in America* asking what citizens must do to maintain democratic institutions to avoid such a tyranny, followed by Mill's arguments in *On Liberty* in which he sets forth the particular value of free speech and social nonconformity to the life blood of a democratic society. We confront further critiques of modernity in Marx and Nietzsche. We conclude with Weber's assessment of politics in the modern world. Credit 3 units.

A&S SS

Pol Sci 160. Freshman Seminar: World Politics and Global Economy

Same as IAS 160.

A&S SS

Pol Sci 170. Freshman Seminar: Introduction to Political Theory II

If a majority of citizens wanted to elect a tyrant, should we allow it? If not, are we really committed to democracy and political equality? What role do institutions play in limiting and protecting the rights of individuals against the democratic state without giving up a commitment to majority rule? And why should we share modernity's commitment to democracy and political equality? What was lost in the move from pre-modern conceptions of a natural or divine order (represented in the rule by aristocracies and monarchies) to more "reasoned" and "enlightened" sensibilities? Has this move toward democracy and equality been inevitable? Is the dominance of democracy—and capitalism more generally—a mere step toward some other end state, or does it indeed represent the "end of history"? In this class we provide a framework in which these and other central questions of political theory have been and can be addressed. This course is designed to introduce students to the main theoretical issues of Western political theory, including but not limited to the following concepts: justice, legitimacy, equality, democracy, liberty, sovereignty, and the role of history in the political and social world. In short, the questions are meant to explore the underlying assumptions and themes of contemporary politics and political science research today. The course is designed around the careful reading of primary text materials and engagement with contemporary problems of politics available on the front pages of any daily newspaper. Although designed as a two-semester class, students may enroll in either one or both. In this second semester we begin with Rousseau's critique of modernity and his corresponding construction of the "General Will." We continue with the new institutionalism represented by Madison and Hamilton in *The Federalist* where, among other things we see the institutional struggle to contain the tyranny of democratic government, that of majority rule. We continue with Tocqueville's *Democracy in America* asking what citizens must do to maintain democratic institutions to avoid such a tyranny, followed by Mill's arguments in *On Liberty* in which he sets forth the particular value of free speech and social nonconformity to the life blood of a democratic society. We confront further critiques of modernity in Marx and Nietzsche. We conclude with Weber's assessment of politics in the modern world. Credit 3 units.

A&S SS

Pol Sci 202. Crossing Borders I

Same as IAS 202.

A&S CD SS

Pol Sci 208B. African-American Studies: an Introduction*Same as AFAS 208B.***A&S SD TH FA SSP****Pol Sci 2121. Topics in Politics: Liberalism and Its Critics**

This course is intended primarily for first-year and sophomore students. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP**Pol Sci 2131. International Conflicts and Conflict Resolution***Same as IAS 213.***A&S SS FA SSP****Pol Sci 2182. Introduction to the Sociology of Law**

General introduction to perspectives of the sociology of law, emphasizing the analyses of legal phenomena as a set of established social activities. As a fundamental social science course, the essential focus is on the general patterns of legal institutions and processes and on the influences of social forces on those legal patterns—most especially on the various links between the American legal system and American society. Credit 3 units.

A&S SS FA SSP**Pol Sci 2222. Seminar in Law and Society***Same as Focus 222.***A&S SS FA SSP****Pol Sci 226. The Immigrant Experience***Same as AMCS 202.***A&S CD SS FA SSP****Pol Sci 300. Models of Social Science***Same as STA 300.***A&S SS FA SSP****Pol Sci 3010. Gender and Politics***Same as WGS 3012.*

This course surveys central topics in the study of gender and politics, covering such issues as women's participation in political parties and social movements, women as voters and candidates in political elections, feminism and the state, and gender and international politics. It draws on examples from various world regions and time periods to analyze similarities and differences across cases around the globe. Credit 3 units.

A&S SS**Pol Sci 3020. "The New World Order" and American Foreign Policy****Pol Sci 3023. Introduction to Quantitative Methods**

This is an introduction to research methodology and quantitative analysis for social scientists. This class introduces students to social scientific inquiry and basic statistical tools used to study politics. Students learn to study politics with the help of measurement, descriptive analysis, correlation, graphical analysis, hypothesis testing, confidence intervals, analysis of variance, and regression analysis. The course includes classroom lectures and computer lab time to enable students to work hands-on with datasets. Basic math skills (algebra) are recommended. Recommended for the Liberal Arts and Business (LAB) Certificate. Credit 3 units.

A&S SS**Pol Sci 3040. Politics and Film**

Film can be both a powerful way to convey political messages and a revealing portrait of the political culture of the times. This course uses weekly films as a starting point to explore questions about political behavior, beliefs, and culture. We see and compare how Hollywood films, independent productions, documentaries, and foreign films approach political issues. Credit 3 units.

A&S SS**Pol Sci 3060. Literacy Education in the Context of Human Rights and Global Justice***Same as Educ 306.***A&S SS****Pol Sci 3066. The City in the 19th and 20th Centuries***Same as History 3066.***A&S SD TH FA SSP****Pol Sci 3071. History of Law in American Life I: English and Colonial Foundations to 1776**

Credit 3 units.

A&S SS FA SSP**Pol Sci 3072. Cracks in the Republic: Discontent, Dissent, and Protest in America During the 1960s and 1970s***Same as History 3072.***A&S SD TH FA SSP****Pol Sci 307C. History of Law in American Life I: English and Colonial Foundations to 1776***Same as History 307C.***A&S TH FA SSP****Pol Sci 3093. Politics of the European Union***Same as IAS 3094, EuSt 3093.*

This class is designed to introduce undergraduates at the junior and senior level to the history and politics of the European Union (EU) and European integration. In the first part of the class, students learn about the interplay of theory and practice in the history of European integration. In the second part, we study the institutions and decision-making processes with reference to the theoretical concepts developed earlier in the course. From there we examine some of the key EU policies and their implementation in the third part of the course. In the final two sections of the course, we look at constitutional politics, and some of the more recent policies and developments. Credit 3 units.

A&S SS**Pol Sci 3103. Topics in Politics:***Same as Pol Econ 3103, ISA 3103.*

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP**Pol Sci 3131. Russian Politics***Same as IAS 3131, Russ St 3131, EuSt 3131, Pol Econ 3131.*

This course focuses on political and economic transformations in the Russian Federation. It explores several topics in detail, with an emphasis on what social science can add to our understanding of events, and how these events offer opportunities to enrich social science. There are three primary areas of focus: the Soviet collapse; parties and elections; and the political economy of economic reform. Students are responsible for the material in required readings and lectures. Instructor attempts to devote at least half of the second weekly meeting to a discussion of readings assigned for that week. Students should come to class prepared to discuss the readings. Finally, given the highly unstable nature of the subject matter, there is no substitute for regularly keeping up with the news. This requires tracking the developments consistently in either a major daily newspaper or one of the major online news digests on the region. Classroom participation counts in the final grade. Credit 3 units.

A&S SS FA SSP**Pol Sci 3140. Topics in Latin-American History and Politics***Same as LatAm 3140, IAS 3140.*

A course devoted to the exploration of "marginalized" groups in Latin-American history and poli-

tics, with a focus on group decisions to organize politically in the contemporary setting. Credit 3 units.

A&S SS**Pol Sci 316B. African-American Politics***Same as AMCS 316B, AFAS 3161.*

This course examines the historical and contemporary efforts by African Americans to gain full inclusion as citizens in the U.S. political system. The course focuses on topics such as the politics of the civil rights movement; African-American political participation; and the tension between racial group politics and class politics. Credit 3 units.

A&S SS**Pol Sci 3171. Topics in Politics***Same as STA 3171.*

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS WI FA SSP**Pol Sci 3192. Modern South Asia***Same as History 3192.***A&S CD TH FA SSP****Pol Sci 320B. Politics of the Arab World***Same as IDEV 320B, IAS 320B, JNE 323B.*

Survey of the politics in North Africa and the near East, including those of both "Arab" (members of the Arab League) and non-Arab (Iran, Turkey, Israel) states. The course focuses on such topics as Islamic fundamentalism, Arab nationalism and pan-Arabism, political and socio-economic development strategies, intra- and interstate conflict, political associational dynamics, street and grass-root politics, and leadership problems. The Arab-Israeli conflict is examined as a catalyst for both internal and external politics in the region. Credit 3 units.

A&S SS FA SSP**Pol Sci 3211. Public Opinion and American Democracy***Same as AMCS 327, Pol Sci 321.*

This course is about the salience of public opinion and its influence on American politics. Topics to be covered include many of the theories developed to explain how public opinion is formed, if and why it changes, and the relationship between public opinion and the political behavior of citizens and elites. Therefore, the course describes and analyzes many of the factors that influence the formation, structure, and variation in public opinion: information processing, education, core values, racial attitudes, political orientation (ideology and party identification), political elites, social groups, the media, and religion. Additional topics include presidential approval, congressional approval, and the relationship between public opinion and public policy. Credit 3 units.

A&S SS FA SSP**Pol Sci 3212. Latin America: From Colonialism to Neo-Colonialism***Same as History 321C.***A&S CD TH FA SSP****Pol Sci 3253. Democratic Politics in Eastern and Central Europe***Same as IAS 3263, Russ St 3253, EuSt 3253.*

This course covers major issues of post-communist political development in Eastern and Central Europe and the post-Soviet states. The primary focus is on systems of political institutions, their origin, and their influence on the choice of political strategies in general and on the development of party systems in particular. Course requirements, in addition to attendance, participation, and familiarity with the readings, include three country-spe-

cific case studies and two classroom presentations during the semester. We rely heavily on Internet sources and periodicals in addition to the basic readings. Credit 3 units.

A&S SS FA SSP

Pol Sci 326B. Latin-American Politics

Same as LatAm 326B, IAS 326B.

This course is an introduction to the politics in Latin America, focusing on the trend toward the establishment of democracy. We examine the impact of political culture, economic development, and the legacy of authoritarian regimes on contemporary politics. The course also reviews many of the most pressing challenges confronting Latin-American governments: the role of the military in politics, the reform of political institutions, threats from radical guerrillas and drug traffickers, debt and economic restructuring, and relations with the United States. Country studies focus on Argentina, Brazil, Chile, Peru, Mexico, and Nicaragua. Credit 3 units.

A&S SS FA SSP

Pol Sci 327B. African Politics

Same as IDEV 327B, IAS 327B, AFAS 327B.

A survey of politics in the states of sub-Saharan Africa. The major topics include colonial politics, nationalism, independence and its consequences, ideology, leadership and governance, military intervention and rule, ethnic and other conflicts, current political and economic crises, as well as the recent wave of "re-democratization" and the emergence of South Africa as a majority-ruled political system and regional power. Credit 3 units.

A&S SS FA SSP

Pol Sci 3280. Political Intolerance in World Politics

Same as IAS 3280.

This course is an investigation into the meaning, causes, and consequences of political intolerance. Instructor's goal is to expose students to contemporary research on a) how political intolerance is conceptualized and understood, especially within the context of theories of democracy; b) how political intolerance can be measured, both at the level of the individual and the institution/society; c) where intolerance originates, both in terms of individual psychology and system-level politics; and d) what consequences flow from intolerance, especially in terms of legal and extra-legal political repression, as well cultural consequences (e.g., a "culture of conformity"). The course makes little distinction between American politics and politics in other parts of the world (although no knowledge of specific non-U.S. systems is required as a prerequisite). Prerequisite: Political Science methods course (or equivalent). Credit 3 units.

A&S SS

Pol Sci 3292. Topics in Politics: Modern South Asian Politics

Same as IAS 3292.

This course focuses on the recent political history and development of South Asia. It begins with a review of the British colonial period and the Independence movement. The remainder of the course examines different political issues in India, Pakistan, Bangladesh, and Sri Lanka. Topics include political mobilization, land reform, law and politics, social movements, religious and caste politics, the rise of religious nationalism, and political control of the economy. Course Web site: <http://artsci.wustl.edu/~polisci/parikh/asian/>. Credit 3 units.

A&S SS FA SSP

Pol Sci 3293. Modern South Asian Politics

Same as AMCS 3292.

A&S SS FA SSP

Pol Sci 330. Topics in Politics

This course is intended primarily for sophomores

and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 331. Topics in Politics: Theories of Justice

Same as Lw St 331.

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 331B. Gender and American Politics

Same as WGS 3313, Lw St 3310, AMCS 3312.

This course examines the ways in which issues pertaining to gender are salient in U.S. politics. The course is divided into four parts. First, we will examine theoretical approaches to the study of gender and politics, including the use of gender as an analytical category, and the relationship between gender, race, ethnicity, and power. Second, we study gender-based social movements, including the suffrage and women's rights movements, women's participation in the civil rights movement, the contemporary feminist and anti-feminist movements, the gay rights/queer movement, and the women's peace movement. Third, we examine the role of gender in the electoral arena, in terms of how it affects voting, running for office, and being in office. Finally, we examine contemporary debates about public policy issues, including the integration of women and gays in the military, sexual harassment, pornography, and equal rights. Credit 3 units.

A&S SD SS FA SSP

Pol Sci 332. Topics in Politics

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 3321. Topics in Politics:

Constitutionalism and Democracy

Same as Lw St 3321, IAS 332, AMCS 3321.

An introductory analysis of a range of issues related to constitutions and democratic government. The main focus is on such theoretical questions as: Why do societies produce constitutions? Why do subsequent generations abide by them? What is the relationship between constitutional principles and democratic decision-making? Who benefits from constitutional constraints? Credit 3 units.

A&S SS

Pol Sci 3322. Topics in Politics

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 3325. Topics in Politics: Constitutional Politics in the United States

Same as Lw St 3325, AMCS 3325.

This course is a study of several aspects of U.S. constitutional politics apart from Supreme Court decisions, including the convention and ratification, amendment, major changes without amendment, and problems in maintaining and applying the constitution. Prerequisite: Pol Sci 101B American Politics. Credit 3 units.

A&S SS FA SSP

Pol Sci 332B. Environmental and Energy Issues

Same as Pol Sci 3311, AMCS 332B, IAS 332B, Lw St 332B, EnSt 332.

This course considers the major issues in these increasingly important areas of public policy. We discuss the importance of political processes and actors on such phenomena as pollution, global warming, and wilderness protection. This course

emphasizes the American experience but also considers international implications. Two lectures and one section meeting each week. Credit 3 units.

A&S SS FA SSP

Pol Sci 333. Topics in Politics

Same as WGS 336, AMCS 333.

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 3331. Economics of the European Union

Same as Econ 333.

A&S SS

Pol Sci 333B. Individual and Community

Same as STA 301B.

A&S SD SS FA SSP

Pol Sci 334. Topics in Politics

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 335. Topics in Politics

Same as IDEV 335.

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 336. Topics in Politics

Same as STA 3361, East Asia 3364, AMCS 3332.

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 3361. China Under Revolution and Reform

Same as IAS 336.

A&S CD SS

Pol Sci 337. Topics in Politics

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 3371. Topics in Politics

Same as Lw St 3371.

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 338. Topics in Politics

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 3381. Topics in Politics: National Security, Civil Liberties, and the Law

Same as AMCS 3381, Lw St 3381.

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 3384. Topics in Politics

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 339. Topics in Politics*Same as IDEV 338.*

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP**Pol Sci 340. Topics in Politics***Same as French 340.*

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP**Pol Sci 340I. Topics in Political Thought***Same as STA 340I, STA 3410.*

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP**Pol Sci 3402. Topics in Political Thought***Same as Lw St 3402.*

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP**Pol Sci 341I. Topics in Politics**

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP**Pol Sci 342. The American Presidency***Same as AMCS 342.*

Consideration of part played by the president in American politics and public policy. The powers of the president; the staffing and organization of the executive office; the relations of the president with Congress, the bureaucracy, and other participants in American politics; presidential elections. Recommended: Pol Sci 101B. Credit 3 units.

A&S SS FA SSP**Pol Sci 342B. Elections and Reform***Same as AMCS 342B, IAS 342B, ISA 342B.*

This course examines the problem of how politicians and policies are selected by citizens. How elections are conducted has enormous impact on what sorts of choices are offered to voters, what sorts of coalitions politicians form, and whose interests get represented in the policymaking process. For this reason, politicians fight tenaciously to shape the rules under which they compete. This course examines electoral systems and current proposals for electoral reform in a broad array of cases, both in the United States and abroad. Topics covered include proportional representation, redistricting, direct democracy, term limits, campaign finance, and presidential elections. Credit 3 units.

A&S SS FA SSP**Pol Sci 344. Courts and Civil Liberties***Same as AMCS 344.*

This course focuses on constitutional law principles in the Bill of Rights and examines how Supreme Court decisions influence these principles in everyday life. We explore how the courts, and particularly the Supreme Court, have interpreted these rights in light of changing times and emerging issues. Topics include the First Amendment; free exercise of religion and the establishment clause; freedom of speech, assembly, and association; freedom of the press; the Fourth Amendment and the rights of those accused and convicted of crimes; the right to privacy, including reproductive freedom and the right to die; equal protection and civil rights, including race, gender,

sexual orientation; immigrants' rights, and voting rights; and civil liberties after September 11. Recommended for the Liberal Arts and Business (LAB) Certificate. Credit 3 units.

A&S SS FA SSP**Pol Sci 344I. Defendant's Rights***Same as AMCS 344I, Lw St 344I.*

This course explores the operations of the American criminal justice system. Substantial emphasis on the constitutional rights accorded to the criminally accused. Readings consist primarily, but not exclusively, of Supreme Court cases. Credit 3 units.

A&S SS FA SSP**Pol Sci 349I. Europe in the 20th Century (1914–1945)***Same as History 349.***A&S TH FA SSP****Pol Sci 3502. Politics, Economics, and Welfare***Same as Econ 350.***A&S SS FA SSP****Pol Sci 3510. Topics in American Politics: The Supreme Court**

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP**Pol Sci 352. Media and Politics**

Consideration of the mass media role in shaping American social and political life. Topics: historical development of both electronic and print media, internal decision-making criteria and structures, interaction between the media and governmental and economic institutions, and effects of a mediated environment in shaping the consciousness of modern people. Particular attention paid to the ways a mass communication system could and actually does knit the policy together. Credit 3 units.

A&S SS FA SSP**Pol Sci 353. The American Legal System***Same as Lw St 363, AMCS 346.*

Survey of the legal system in the United States, including state and federal court systems, major areas of substantive law, the roles of lawyers and judges, the nature and limitations of legal analysis, and the role of law in U.S. society. Requirements include writing assignments and class participation and presentations. Prerequisite: sophomore standing or permission of instructor. Credit 3 units.

A&S SS FA SSP**Pol Sci 356. Women and the Law***Same as WGS 356I.***Pol Sci 356I. Topics in Politics***Same as IAS 3560, East Asia 356I.*

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS**Pol Sci 357B. Gender Politics in Global Perspective***Same as WGS 357B, IAS 357B.*

The 1990s have been the decade of globalization. Changes such as the fall of the Berlin Wall, the end of the Cold War, North American Free Trade Agreement (NAFTA), the European Union and the advent of the Internet and CNN have fundamentally altered the lives of people all over the world. What have these changes meant for women? This course examines the impact of global change on women and contemporary issues facing women in the Americas, Europe, Africa, and Asia. In particular, we study the emergence of

women's movements; women's participation as soldiers, guerrillas, and civilians in international conflict; the status of women in elective office; women's participation in the global economy; conflicts between first-world and third-world women; and the role of the United Nations in promoting advances in the status of women. Credit 3 units.

A&S SS FA SSP**Pol Sci 358. Law, Politics, and Society***Same as Pol Sci 358, AMCS 358, Lw St 358.*

This course is an introduction to the functions of law and the legal system in American society. The course material stresses the realities of the operation of the legal system (in contrast to legal mythology), as well as the continuous interaction and feedback between the legal and political systems. There are four specific objectives to the course: (1) to introduce students to legal concepts and legal theories; (2) to analyze the operation of the appellate courts, with particular emphasis on the U.S. Supreme Court; (3) to analyze the operation of American trial courts, especially juries and the criminal courts; and (4) to examine the linkages between culture and law. Credit 3 units.

A&S SS FA SSP**Pol Sci 3610. Legislative Politics**

This course is an introduction to the politics of the U.S. Congress and the federal lawmaking process. We focus on the behavior of individual legislators and the role that they play in crafting federal legislation in policy areas such as health care, civil rights, and the environment. In general we examine questions such as: Why do legislators behave as they do? Whose interests are being represented? Credit 3 units.

A&S SS**Pol Sci 362. Politics and the Theory of Games**

This course is intended to cover through analytical discussion and illustrations the basic concepts and major achievements of game theory in different sub-fields of research in the social sciences today. We discuss examples of the usefulness of cooperative and non-cooperative game theory to the study of human behavior in general and political science and political economy in particular. Credit 3 units.

A&S SS FA SSP**Pol Sci 362I. Learning by Playing Games in Economics and Politics***Same as Econ 326I.*

In this course we cover the basic primitives and more sophisticated tools of game theory as they are used in contemporary political science. The course covers advanced introductory level contemporary research in game theory as the central analytical tool in studying the sciences of politics, economics, and business. We look into real case studies, run several basic game experiments in class, and—in general—have a lot of fun. Credit 3 units.

A&S SS FA SSP**Pol Sci 363. Quantitative Political Methodology***Same as ASTAT 513A, ASTAT 330A.*

This is an introduction to research methodology and quantitative analysis for social scientists. Students are introduced to the logic of social scientific inquiry and to the basic statistical tools used to study politics. Students learn and apply the following to answer substantive questions: measurement, descriptive analysis, correlation, graphical analysis, hypothesis testing, confidence intervals, analysis of variance, and regression analysis. Major components of the course include learning how to collect, manage, and analyze data using computer software, and how to effectively communicate to others results from statistical analyses. Students work collaboratively on research projects in which they pose their own questions, design a study, collect and analyze the data, and present

their findings in a research paper. Credit 3 units.

A&S QA SS FA SSP

Pol Sci 3680. The Cold War, 1945–1991

Same as History 3680.

A&S TH FA SSP

Pol Sci 369. Topics in Public Policy

Same as IAS 369, East Asia 369, ISA 369.

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS WI FA SSP

Pol Sci 372. Topics in International Politics

Same as IAS 372.

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 3721. Topics in International Political Economy

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 372C. Law in American Life II

Same as History 372C.

A&S SD TH FA SSP

Pol Sci 373. International Political Economy

Same as IDEV 373, IAS 373, STA 393, ISA 373.

Analysis of the interplay of economics and politics in the world arena, focusing primarily on the political basis of economic policies in both advanced and less developed societies. Treating differing perspectives on the international economy, production, trade and finance, and international economic relations. Prerequisite: junior standing, or permission of instructor. Credit 3 units.

A&S SS FA SSP

Pol Sci 3741. History of U.S. Foreign Relations Since 1945

Same as History 3741.

A&S TH FA SSP

Pol Sci 378. Topics in International Politics

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 3781. Topics in Politics: Israeli Politics

Same as Pol Econ 3781, IAS 3781, JNE 5781, JNE 3781.

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S CD SS FA SSP

Pol Sci 3782. Topics in Comparative Politics

Same as IAS 3782.

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS

Pol Sci 388. African-American History Since Emancipation

Same as History 388C.

A&S SD TH FA SSP

Pol Sci 398. Topics in Politics

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit variable, maximum 3 units.

A&S SS FA SSP

Pol Sci 399. Topics in Politics

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 3991. American Culture and Politics Since 1945

Same as History 383.

A&S TH FA SSP

Pol Sci 400. Research Experience in

Institutional Analysis

Same as ISA 400.

Pol Sci 4010. Pluralism, Liberalism, and Education

Same as AMCS 4010, STA 4010.

How should liberal democratic states respond to religious and cultural pluralism? In what ways is pluralism different from mere disagreement, and what normative implications does pluralism have for public policy? How can liberal states justify using their coercive power against a background of pluralism and in ways that systematically disadvantage certain religious and cultural groups in society? In particular, what is to be done when religious parents and the liberal state make conflicting judgments about the proper education of children? When should the state defer to parental judgments and what are the grounds for legitimately refusing to do so? Readings are taken from contemporary political philosophy. Prerequisites: Pol Sci 106, Pol Sci 107, Phil 340, or permission of instructor. Credit 3 units.

A&S SS

Pol Sci 4020. The Legal Landscape in a Changing American Society

Same as AMCS 4020.

This course is designed to examine the qualitative relationship between transformations in law in America and the structure of American behavioral patterns and values. The course scrutinizes some intersections between the changes in contemporary legal practices and the values that Americans place on their legal system. The materials cover the structural aspects of the legal system and its place in American society and not the law's doctrinal features (i.e., specific substantive areas of the law). Rather the course examines how the organization and functioning of the law seems to be reflective of the values and changes in American society. Potentially, this review includes appraisals of such topics as: (a) Americans' perceptions of their legal agents; (b) law and the mass media; (c) concerns about the jury system; (d) the use (and abuse?) of litigation and its alternatives; (e) inequalities in access to the legal system; and (f) the transformations in the legal profession. Credit 3 units.

A&S SS

Pol Sci 4024. The Meaning of National Security in the 21st Century

Same as IAS 402.

A&S SS

Pol Sci 4031. Speak Out! Contending Perspectives on Global Issues

Same as IAS 4030.

This course examines the most pressing global issues, looking at them from many different perspectives. Topics to be included in the course include global security, population growth and its problems, migration and the plight of refugees, environmental degradation and its potential solutions, and the growth of information technology and its limits (or not) on individual rights. In addition to looking at these issues in a global context, we also examine particular cases to see what individual governments are trying to do to solve some of these problems. The course is based heavily on

discussion and debate, so students are expected to complete each week's readings prior to section. Prerequisite: Pol Sci 101B, 102B, or 103B. Credit 3 units.

A&S SS WI

Pol Sci 405. Topics in Political Thought

Same as Anthro 4051, IAS 4051, AMCS 4050.

Credit 3 units.

A&S SS FA SSP

Pol Sci 406. Topics in Political Thought

Questions regarding the relationship between the state and civil society are among the most enduring in political science—and the most pressing in contemporary political practice. This course examines an array of texts in political theory and recent empirical studies of the relationship between state and civil society. Among the questions we address are: What kinds of groups “count” as being part of civil society? What is the relationship between the state and civil society in a democracy? Can we meaningfully distinguish between political associations and economic associations? What is the relationship between voluntary associations and the market? What is the purpose of civil society? This course focuses on close readings of the assigned texts and consideration of contemporary understandings of the topic. It is aimed at students interested in comparative politics, political philosophy, and political economy. Credit 3 units.

A&S SS FA SSP

Pol Sci 4064. Advanced Seminar in Chinese Politics

Same as IAS 4064.

This course explores changes currently unfolding in China. It analyzes such topics as the dramatic organizational changes facing the Chinese government bureaucracy and the evolving role of the Chinese Communist Party through in-depth class discussions and paper presentations on various domestic and foreign policy issue areas. These include the economic and political transformation of the Chinese state as it enters the World Trade Organization, the elite politics of succession, the role of China's military in shaping foreign policy, Sino-U.S. relations, and Cross-Straits relations, among others. Prerequisites: Pol Sci 3361 (China Under Revolution and Reform) or permission by professor. Credit 3 units.

A&S SS

Pol Sci 407. Topics in Political Thought

Same as Ital 473.

A&S TH WI FA SSP

Pol Sci 412. Directed Readings

This is a course of readings in political science taken under the direction of an instructor in the department. Credit variable, maximum 3 units.

A&S SS FA SSP

Pol Sci 413. Directed Research

Research activities or project in political science done under the direction of an instructor in the department. Credit variable, maximum 3 units.

A&S SS FA SSP

Pol Sci 4131. Intolerance and Prejudice

Same as Psych 413.

A&S SS FA SSP

Pol Sci 414. Directed Field Work

This course is a field work project carried out under the direction of an instructor in the department. Credit variable, maximum 9 units.

A&S SS FA SSP

Pol Sci 415. Honors Thesis

Intensive research leading to Honors thesis. To be conducted under the supervision and guidance of a faculty sponsor of the thesis. Credit variable, maximum 3 units.

A&S SS FA SSP

Pol Sci 419. Teaching Practicum in Political Science

This course is an opportunity for undergraduates to assist in course instruction, tutoring, and preparation of problems, readings, and exam materials with permission and under supervision of instructor. This course counts toward up to 6 hours of credit in an advanced field for the Political Science major. Credit variable, maximum 3 units.
A&S SS FA SSP

Pol Sci 4212. Elections

This course examines how politicians and policies are selected by citizens in democracies. The literature exploring the rules and procedures that govern elections is perhaps the most theoretically and empirically sophisticated body of knowledge in the study of politics. We explore how differences in these institutional rules across a variety of democracies shape the types of strategic choices voters make, the coalitions that legislators form, whose interests are represented, the structure of parties, the career paths of politicians, and the policies that governments pursue. We further investigate how, when, and why electoral rules are changed with reference to several recent cases of electoral reform. Credit 3 units.
A&S SS

Pol Sci 4231. Democratic Institutions in Latin America

Same as IAS 4232, LatAm 4231.

How do the institutional designs of contemporary democratic governments help us understand the nature and quality of representation? We concentrate on variations in the powers granted presidents by constitutions as well as the institutional determinants of whether executives are likely to find support for their policies in the legislature. In addition, we explore how incentives established by electoral laws influence the priorities of members of Congress. Given all these variations in democratic institutional design, can voters go to the polls with the confidence that politicians will implement the economic policies for which their parties have long stood or which they promised in their campaigns? Credit 3 units.
A&S SS FA SSP

Pol Sci 424. Topics in Comparative Politics

Same as IAS 424.

Credit 3 units.
A&S SS FA SSP

Pol Sci 4241. Topics in American Politics: Race and Politics

Same as AFAS 4483.

From the moment enslaved Africans were brought to American shores, race and racism has been central to the American political project. In this class we examine how notions of race and racism inform conceptions of citizenship, the allocation of state resources, the development of political parties, and political participation. We also examine the ways that race and racism influence public opinion. Credit 3 units.
A&S SS FA SSP

Pol Sci 426. Topics in American Politics: Politics of the Civil Rights Movement

Same as AFAS 4262, AMCS 4261.

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.
A&S SD SS FA SSP

Pol Sci 4260. Writing about Civil Rights

Same as AMCS 4260.

The substantive goal of this course is to study the civil rights movement in order to learn more about the role of social movements, federalism, the legislative process, the presidency, political parties, and the courts in American politics. This is a writ-

ing-intensive seminar, limited to 18 students, each of whom writes three essays. Each student submits an early draft of each essay, which is edited and returned to the student for polishing. There are review sessions on grammar, punctuation, word usage, and paragraph construction. The readings for the course include some of the best essays on the subject of civil rights by W.E.B. DuBois, Malcolm X, Martin Luther King, and others. Prerequisite: Pol Sci 101B Credit 3 units.
A&S SS WI

Pol Sci 4263. Systems of Inequality

Same as Anthro 4261.

A&S SD SS WI FA SSP

Pol Sci 4264. Inequality Across States and Markets

Same as STA 4262.

A&S SS FA SSP

Pol Sci 4271. Topics in Comparative Politics

Same as EuSt 4271, Russ St 4271, IAS 4272.

Credit 3 units.

A&S SS WI FA SSP

Pol Sci 427A. Topics in American Politics: Organizational Micro Politics

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS

Pol Sci 428. Topics in Comparative Politics: Separatist Politics

Same as Anthro 4283, EuSt 428, IAS 428.

Examination of factors that lead to—or prevent—the disintegration of countries into two or more separate entities. Explores why some countries remain unified, despite the presence of factors that would seemingly break the country apart, while other countries fall apart even though strong religious, ethnic, or regional differences are not present. Some of the cases include the separation of Czechoslovakia into two distinct countries, Canada's attempt to keep Quebec in the federation, attempts by the Basque region in Spain to splinter from the state, the separatist tendencies in Ireland and Scotland vis-à-vis England, and the separation of Pakistan from India in 1947. Credit 3 units.

A&S SS WI

Pol Sci 4281. Comparative Political Parties

Same as IAS 4281.

An introduction to theories and concepts used in the analysis of political parties in democratic regimes, with emphasis on the classic literature covering West European advanced industrial democracies and the more recent scholarship on Latin-American party systems. The course illuminates the complex aims, consequences, and characteristics of modern party politics. Credit 3 units.
A&S SS FA SSP

Pol Sci 4301. Multilevel Modeling

Same as ASTAT 430.

A&S NS

Pol Sci 432. Topics in Comparative Politics

Same as East Asia 4321, STA 432, IAS 4322.

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 4335. Topics in Comparative Politics

Same as IAS 4335.

Credit 3 units.

A&S SS FA SSP

Pol Sci 4342. Political Safeguards of Federalism

Same as IAS 4342

Federalism is an important topic in such diverse

settings as North America, Latin America, South Africa, the former Soviet Union, and Europe. One of the most difficult questions of a federal theory is how to preserve institutional stability and, in particular, how to protect constitutional separation of powers between the state and federal governments. In the American context, since 1954 when Herbert Wechsler introduced an influential legal theory of "political safeguards of federalism," it has been argued that the protection of state interests is provided within the structure of the American political process. The political process creates incentives for both state and federal politicians to sustain federal institutions and, thus, makes those institutions self-enforceable. This course critically explores the theory of political safeguards of institutional stability referring to the experiences of the U.S. and other federations. With this focus, we review major theories of federalism, with the readings drawn equally from political science, legal studies, and economics. All students are responsible for the material in the required readings. Participation in classroom discussions counts heavily in the final grade. Credit 3 units.
A&S SS FA SSP

Pol Sci 4353. The Political Economy of the European Union

Same as IAS 4353, EuSt 4353.

This course addresses economic and political aspects of the development of the European Union. We complement the survey of major theories of European integration in political science with a look at how political scientists and economists evaluate the recent institutional innovations. Credit 3 units.

A&S SS FA SSP

Pol Sci 437. Topics in Comparative Politics

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 439. Topics in Comparative Politics

Same as IAS 439.

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 4402. Topics in Political and Social Theory: Constitutionalism

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS

Pol Sci 4432. Politics of Post-Soviet Countries (Commonwealth of Independent States)

Same as IAS 4432, Russ St 4432, EuSt 4432.

The Commonwealth of Independent States is a proud name for an unruly group of new countries that emerged on the ruins of the formerly powerful U.S.S.R. While sharing the common Soviet legacy in politics as well as in economics, the 12 countries of the Commonwealth are very different in almost any other regard. This lecture and discussion course explores similarities and differences in their current economic and political development, with a goal of addressing through such a comparison important theoretical issues of transitions to democracy and market. Credit 3 units.

A&S SS FA SSP

Pol Sci 4450. Rights, Institutions, and the Law

Same as Phil 445.

A&S LA

Pol Sci 4461. The Rule of Law

Same as Phil 4461.

A&S TH

Pol Sci 4483. Topics in American Politics: Black Politics

Same as AFAS 448.
A&S SS FA SSP

Pol Sci 4501. Topics in Political Theory: Intellectual History of Feminism

Same as WGS 475.
A&S TH FA Lit

Pol Sci 4502. Topics in Political Thought: Rights, Institutions, and the Law

Same as Lw St 4502.
Credit 3 units.

A&S SS FA SSP

Pol Sci 4503. Topics in Political Thought: Order, Diversity, and the Rule of Law

Same as Lw St 4503, STA 4503, ISA 4503.

This course is a seminar in which we explore questions of social order and cooperation in culturally diverse societies. This involves both a general consideration of processes by which social cooperation is achieved and maintained and a specific analysis of the implications of social diversity for these processes. Major topics to be considered include: social capital, trust, community, civil society, social norms, and the rule of law. Special emphasis is given to the relationship between formal (legal) and informal means of fostering cooperation. Credit 3 units.

A&S SD SS WI FA SSP

Pol Sci 4504. Contemporary Democratic Theory

Contemporary debates in democratic theory have produced a number of challenging and provocative accounts of how democratic institutions can and should work. In this course we analyze a number of competing theories of democracy and assess the similarities and differences among them. Although the course focuses primarily on theoretical issues, special attention is given to how empirical research in the social sciences on democratic institutions and procedures informs and clarifies these debates. Credit 3 units.

A&S SS WI FA SSP

Pol Sci 451. Topics in American Politics: Supreme Court

Same as AMCS 456.

This seminar has two purposes: to introduce students to the state of the art in studies of the Supreme Court and to cover a series of particular topics with emphasis on the major controversies within the field of law and the courts. Credit 3 units.

A&S SS FA SSP

Pol Sci 4513. Topics in Politics: Criminal Law and Criminal Justice: Homicide

Same as STA 4513, Lw St 4513, AMCS 4513.

Seminar investigates current controversies surrounding the homicide laws. Topics include the definitions of homicide and claims of self-defense, the controversies about admissions of evidence at various stages of prosecution, and the debates about the use of capital punishment (including the capital punishment of youths). Includes general academic readings, readings of recent court opinions, and guest discussants from the legal community. Credit 3 units.

A&S SS WI FA SSP

Pol Sci 4522. Topics in American Politics

Same as AMCS 4522.

This course is intended primarily for sophomores and juniors. The topic of this course varies by semester, dependent on faculty and student interests. Credit 3 units.

A&S SS FA SSP

Pol Sci 4532. Seminar in Constitutional Politics

This course is intended for students who have already completed significant upper-division courses in U.S. constitutional law or constitutional politics. After general discussion concerning the creation, interpretation, implementation, enforcement, and change of U.S. constitutional provisions, students, in consultation with the instructor, pursue outside research on a specific topic. That individual research guides class discussion during the latter two-thirds of the semester; the class as a whole is assigned readings on each individual research topic. Written assignments are designed to satisfy College of Arts & Sciences guidelines for writing-intensive courses. Credit 3 units.

A&S SS FA SSP

Pol Sci 4551. Seminar in Political Economy

Same as Econ 4551.

Collective decision-making in organizations, organization design, links between markets and government, collective preferences, institutions, democracy and deliberation, constitution design. Credit 3 units.

A&S SS

Pol Sci 456. Topics in American Politics

Credit 3 units.

A&S SS FA SSP

Pol Sci 4561. Urban Politics

Same as AMCS 4560, AFAS 4561, URST 4561.

Cities are "where the action is" in American society. Whether the problem is racism, poverty, law and order, pollution, or whatever, the city is the setting. This course is designed to provide an overview of urban problems and policies from a political point of view. An underlying concern is the effect of urban governmental structures and federal policies upon these problems and policies. Also addressed are the secret histories of cities, as this history is deeply intertwined with the history of social inequality. Some argue that as the central purpose of 20th-century cities (to provide a hub for cheap labor and manufacturing) no longer exists ... perhaps the city is an obsolete entity. Others argue that cities like Detroit and St. Louis, if re-visualized, represent the future. Who is right? Credit 3 units.

A&S SS

Pol Sci 458. Topics in American Politics: Marriage of Government and Business

Same as Econ 456.

A&S QA SS FA SSP

Pol Sci 4621. Politics and the Theory of Games

Same as ISA 4621.

This course covers basic primitives and more sophisticated tools of game theory as they are used in contemporary political science. It covers some issues in the forefront of contemporary research in game theory as the central analytical tool in studying the science of politics. The main substantive issues are the emergence of law and order in society, markets versus political mechanisms and the distinctive characteristics of parliamentary versus presidential democratic systems. The course also includes some real case studies, basic experiments, and—in general—a lot of fun. Credit 3 units.

A&S SS FA SSP

Pol Sci 464. Topics in American Politics: The United States in Vietnam: Origins, Developments, and Consequences

Same as History 4894.

A&S TH FA SSP

Pol Sci 467. Topics in American Politics

Same as AMCS 463.

Credit 3 units.

A&S SS FA SSP

Pol Sci 4689. American Intellectual History to 1865

Same as History 4689.

A&S TH

Pol Sci 4730. Political Economy of Multinational Enterprises

Same as IAS 4730.

In this class we explore the literature in political science and economics on the relationship between multinational enterprises and domestic governments. The four main themes of the course are: 1) defining and understanding multinational enterprises, 2) governments attracting and competing for multinationals, 3) the impact of multinationals on economic development and groups within society, and 4) attempts to regulate multinationals both domestically and internationally. Credit 3 units.

A&S SS

Pol Sci 4731. Global Political Economy

Same as IAS 4731.

This course borrows on the insights of international relations scholarship and economic theory to develop a broad understanding of international economic relations. Specifically, this course attempts to address the following two sets of questions: 1) How do global economic relations fit into the broader category of international relations? How do the existing theories in international relations (liberalism, realism, and Marxism) help us understand international economic relations between nation-states? 2) What are the effects of these international economic forces (trade, finance, and multinational production) on domestic governments and societies? Credit 3 units.

A&S SS FA SSP

Pol Sci 475. Topics in International Politics: Terrorism and Guerrilla War in International Perspective

Same as IAS 4752, IDEV 432, IDEV 475.

The role of terrorism and guerrilla warfare in national and international politics. Focus on post-World War II events and phenomena: such cases as Northern Ireland, pre-1949 China, pre-1962 Algeria, Vietnam, Iran, Italy, Quebec, Colombia, Nicaragua, the Palestinians, the Bader-Meinhoff group, the Japanese "Red Army." Prerequisite: junior standing or permission of instructor. Credit 3 units.

A&S SS FA SSP

Pol Sci 4761. Politics of International Finance

Same as IAS 4761, ISA 4761.

In this course we examine the complex relationship between international finance, economic development, and domestic politics by drawing on the recent scholarly literature in economics, political science, and finance. The focus is on the theoretical literature on both the determinants of international financial flows and its effects on domestic societies. Specially, we focus on five forms of international finance: 1) international equity markets (stocks), 2) flows of foreign direct investment (multinational corporations), 3) currency markets (with a special focus on currency crisis), 4) international debt, 5) and international aid. Credit 3 units.

A&S SS FA SSP

Pol Sci 4791. Topics in Politics

Same as LatAm 4791, IAS 4791.

Credit 3 units.

A&S SS FA SSP

Pol Sci 4792. Globalization and National Politics

Same as AMCS 4792, IAS 4792, ISA 4792.

This seminar examines globalization and its interaction with national politics. The movement of ideas, capital, goods, services, production, and people across national borders and provide a skeletal framework for the global political economy. Politicians, policy makers, and societies discover new opportunities, but also dilemmas as expanding interdependence challenges traditional notions of sovereignty and national policy autonomy. Prerequisites: 102 or 103. Credit 3 units.

A&S SS (FA) SSP

Pol Sci 480. Topics in International Politics: Growth and Development

Same as ISA 480, IAS 480.

Credit 3 units.

A&S SS (FA) SSP

Pol Sci 482. Public Policy Internships

The public policy internship program offers internships to advanced undergraduates. Internship positions are jointly decided upon by the student and instructor and might include placement in legislators' offices, public interest groups, regional or community organizations, or private businesses with active public policy research interests. Credit variable, maximum 3 units.

A&S SS (FA) SSP

Pol Sci 483. Legal Internships

Same as Lw St 483.

The legal internship program is designed to allow advanced undergraduates the opportunity to undertake an internship in one of a variety of law offices, public and private. Credit variable, maximum 3 units.

A&S SS (FA) SSP

Pol Sci 484. Washington Center Seminar

The Washington Semester program is offered by the Washington Center to enlarge upon the students' internship experience in Washington, D.C. Students can choose the seminar from current course offerings that most closely meet their interests and internship placement. Seminars are taught by Center adjunct faculty. Students meet in a weekly seminar in Washington, D.C. Credit 3 units.

A&S SS (FA) SSP

Pol Sci 4946. The "Federalist" Papers—Ideas and Politics in the Creation of American Republic

Same as History 4946.

A&S TH (FA) SSP

Pol Sci 498. Honors Seminar

Same as Pol Econ 498.

A&S SS

Pol Sci 4987. Anti-slavery: The Legal Assault on Slavery in St. Louis

Same as History 4987.

A&S SD TH

Pol Sci 4999. Introduction to Comparative Civilizational Analysis: United States, China, Japan

Same as History 4999.

A&S TH

Pol Sci 500. Independent Work

This course is an independent study taken under the supervision of an instructor in the department. Credit variable, maximum 3 units.

Praxis

Director

Henry Biggs, Associate Dean
(College of Arts & Sciences)
Ph.D., UCLA
M.B.A., Washington University

Participating Faculty, 2006-08

Carolyn Brown, Lecturer (English)
M.A., University of Missouri at St. Louis

Kathleen Cook, Adjunct Professor
(Anthropology)

Ph.D., Washington University

James W. Davis, Professor
(Political Science)

Ph.D., University of Michigan

Fawn Diaz-Granados, Adjunct Professor
M.Ed., J.D., University of Illinois at Urbana-Champaign

Joy Kiefer, Adjunct Professor
(Anthropology)

Ph.D., Washington University

Gary Miller, Professor
(Political Science)

Ph.D., University of Texas at Austin

Mary Jo Thierry, CAIT Instructor
(Center for the Application of Information Technology)

William Whitaker

(Performing Arts)

M.F.A., Florida Atlantic University

The Praxis Program provides an exciting opportunity to combine the analytical reading, writing, and thinking skills of a liberal arts education with the marketable skills required in the 21st century to take the students into a career path of their own design.

Eligibility Requirements: The program is designed for students entering their sophomore year. Students must fill out an application for the program (available online at artsci.wustl.edu/~college/College/praxis) by the middle of the second semester of their freshman year. Students must have maintained at least a 3.0 grade point average in their first semester to be considered eligible.

Faculty: The Arts & Sciences faculty, from a wide variety of backgrounds, have helped to develop the program and are eager to teach, monitor, and mentor the Praxis students. In addition, leaders in business, non-profit organizations, government, and the like, many of whom discovered the foundation for their success in liberal arts studies, will be lecturers in the signature Praxis courses.

Focused "Workforce" Curriculum: Not only does the Praxis Program provide you with the foundation of a liberal arts education, the curriculum is designed specifically to provide you with many additional tools essential for your future in the world of work. Besides the specialized content of your particular field, you will be acquiring the expertise essential for your first job as well as for careers that may not yet exist:

- Analysis of multiple perspectives essential in the increasing globalization of

- our world
- Critical thinking
- Familiarity with quantitative analysis and methods
- Outstanding writing and speaking skills
- Foreign language literacy and culture
- Team and group work expertise and psychology
- Essential skills in traditional and emerging technology.

Internships: Your Praxis experience culminates in an internship taken normally at the end of your junior year that allows you to synthesize the tools and theories you have learned and to use them in the workplace. Locations for internships may include national and international sites.

Community: The success of our students is central to our program. Your academic advisers as well as each Praxis faculty member assists you in tailoring your education to your own interests and goals. In particular, your own faculty mentor closely monitors your progress. The faculty and staff, you and your fellow Praxis students form a supportive community that stimulates and encourages the highest standards of excellence in your studies and in your chosen careers.

The Program:

1. Leadership and group experience (3 units) (Fall of sophomore year)

Required:

Praxis 100. Leaders in Context

Recommended:

MGT 402. Ethical Issues in Managerial Decision Making

Psych 214. Industrial and Organizational Psychology

2. Information technology skills (1 unit) (Fall of sophomore year)

Required:

Praxis 107. Fluency in Information Technology

Recommended:

One additional course in computer programming or data management, such as:

CSE 100G. Introduction to Computing Skills: General Skills

3. Communication skills, both written and oral (3 units) (Spring of sophomore year)

Required:

Praxis 310. Communication that Works

Recommended:

Drama 311. Exposition

Drama 312. Argumentation

Speech 211. Introductory Public Speaking

4. Analytic and problem-solving ability (6 units)

Required:

Econ 103B. Microeconomics

A second course in analytic skills:

Choose one:

Econ 104B. Macroeconomics

Acct 2610. Principles of Financial Accounting

Phil 100G. Logic and Critical Analysis

5. Quantitative Skills (3 units)

Required: A course in statistics (select one from below):

Math 101. Quantitative Applications in Arts & Sciences

Math 1011. Introduction to Statistics

Math 320. Elementary Probability and Statistics

STA 326. Methods and Reasoning in the Social Sciences I

Psych 300. Introductory Psychological Statistics

Recommended:

Math 131. Calculus I

Math 132. Calculus II

6. International perspective or experience (3 units)

Required—Either:

300 level The study of any language through the

Or:

One course in international economics or economic development, namely:

Anthro 306B. Africa: Peoples and Cultures

Anthro 3322. Brave New Crops

Anthro 4517. Anthropology and Development

Econ 333. Economics of the European Union

Pol Sci 369. Topics in Public Policy

Recommended:

Pol Sci 103B. International Politics

Pol Sci 102B. Comparative Politics

Other courses with an international perspective

7. Internship (3 units)

As the capstone experience of the Praxis program, the internship allows students to put into practice the skills and knowledge learned in the Praxis curriculum. The Praxis internship is conducted with the mentorship of a sponsoring Praxis faculty member, and usually occurs by the end of the junior year. Students should contact the Praxis internship coordinator, Dr. Joy Kiefer, and have a faculty mentor in place before beginning the internship. It is **not possible** to fulfill the internship portion of the Praxis Program with an internship that occurred before completing the majority of Praxis requirements, and the internship should consist of 135 hours.

Upon completion of the internship, there are two options available for students in order to fulfill the Praxis internship requirement. In conjunction with the approval of

the faculty sponsor, the student submits a 10-page paper exploring the relevant issues and questions set by the sponsoring faculty. Depending on the topic, nature of the internship, and discretion of the sponsoring faculty, a daily journal may be submitted in lieu of the 10-page paper. As another option, with the approval of the faculty sponsor, students may enroll in the Political Science course, Organizational Micro-politics, with Professor Gary Miller. In this 400-level writing-intensive course, students have the opportunity to analyze their internship experience through the lens of organizational politics. For full details as to the requirements for this internship, contact the Internship Coordinator, Dr. Joy Kiefer, at jkiefer@wustl.edu.

Undergraduate Courses

Praxis 100. Leaders in Context

This multidisciplinary course offers students in Arts & Sciences a broad introduction to the dynamics of leadership. The readings are drawn from anthropology, political economy, history, and literature, and provide a foundation for understanding how leaders both shape and are constrained by their social, historical, and institutional settings. Students conduct fieldwork and group projects and have a chance to talk with leaders from a variety of organizations. Credit 3 units.

A&S SS

Praxis 107. Fluency in Information Technology

This course provides students with the knowledge to more fully understand information technology. Credit 1 unit.

A&S SS

Praxis 111. Communication That Works

This course focuses on the communication forms and skills essential to contemporary living and working. Various forms of writing for different audiences and purposes: business letters, memoranda, proposals, reports, press releases, speeches, as well as public speaking are practiced and critiqued. The use of technology common in public speaking is practiced and critiqued. The use of technology common in public presentations is expected. Course reading is supplemented with viewing and listening. Final grade is based on combination of quizzes, writing assignments, and demonstration of speaking skills. This course is limited only to students in the Praxis Program. Credit 3 units.

A&S LA

Praxis 129. So You Want to be an Entrepreneur? Building the Innovative Mind through Liberal Arts

It is a little-known truth that more entrepreneurs come out of the Arts & Sciences than any other college. This course begins by exploring why this is so, examining in particular the creative and innovative qualities developed in liberal arts that are crucial to the success of the entrepreneur. We then move on to examine in action, hearing from those in the field and reading of others, learning how the liberal arts proved instrumental in various ways to their development and ultimate success as entrepreneurs. Credit 3 units.

A&S TH

Praxis 285. Communication That Works

This course focuses on the communication forms and skills essential to contemporary living and working. Various forms of writing for different audiences and purposes: business letters, memoranda, proposals, reports, press releases, speeches, as well as public speaking are practiced and critiqued. The use of technology common in public speaking is practiced and critiqued. The use of technology common in public presentations is expected. Course reading are supplemented with viewing and listening. Final grade is based on combination of quizzes, writing assignments, and demonstration of speaking skills. This course is limited only to students in the Praxis Program. Credit 3 units.

Psychology

Chair

Randy L. Larsen

William R. Stuckenberg Professor of Human Values and Moral Development
Ph.D., University of Illinois

Associate Chair

Michael Strube, Professor
Ph.D., University of Utah

Endowed Professors

John Baugh

Margaret Bush Wilson Professor
in Arts & Sciences
Ph.D., University of Pennsylvania

Pascal R. Boyer

Henry Luce Professor of Individual and Collective Memory
(Anthropology)
Ph.D., University of Paris–Nanterre

Steven E. Petersen

James S. McDonnell Professor
of Cognitive Neuroscience
(Neurology and Neurological Surgery)
Ph.D., California Institute of Technology

Thomas Oltmanns

Edgar James Swift Professor
of Arts & Sciences
Ph.D., State University of New York–Stony Brook

Henry L. Roediger, III

James S. McDonnell Distinguished
University Professor
Ph.D., Yale University

Rebecca A. Treiman

Burke and Elizabeth High Baker Professor
of Child Developmental Psychology
Ph.D., University of Pennsylvania

Endel Tulving

Clark Way Harrison Distinguished Visiting
Professor of Psychology
Ph.D., Harvard University

James V. Wertsch

Marshall S. Snow Professor in Arts & Sciences
(Anthropology, International and Area Studies, Education)
Ph.D., University of Chicago

Professors

Richard A. Abrams

Ph.D., University of Michigan

David A. Balota

Ph.D., University of South Carolina

Stanley Finger

Ph.D., Indiana University

Leonard S. Green

Ph.D., State University of New York–Stony Brook

Larry L. Jacoby

Ph.D., Southern Illinois University–Carbondale

Michael Merbaum

Ph.D., University of North Carolina

Mark A. McDaniel

Ph.D., University of Colorado

Martha Storandt

Ph.D., Washington University

Associate Professors

Deanna M. Barch

Ph.D., University of Illinois,
Urbana–Champaign

Todd S. Braver

Ph.D., Carnegie Mellon University

Janet M. Duchek

Ph.D., University of South Carolina

Sandra Hale

Ph.D., University of Wisconsin–Milwaukee

Richard Kurtz

Ph.D., University of Cincinnati

Alan Lambert

Ph.D., University of Illinois,
Urbana–Champaign

Mitchell S. Sommers

Ph.D., University of Michigan

Desirée White

Ph.D., Washington University

Denise E. Wilfley

Ph.D., University of Missouri–Columbia

Assistant Professors

Brian D. Carpenter

Ph.D., Case Western Reserve University

Denise Head

Ph.D., University of Memphis

John J. Hetts

Ph.D., University of California–Los Angeles

Brett Kessler

Ph.D., Stanford University

Kathleen B. McDermott

Ph.D., Rice University

Thomas Rodebaugh

Ph.D., University of North Carolina at
Chapel Hill

Carol Woods

Ph.D., University of North Carolina at
Chapel Hill

Jeffrey M. Zacks

Ph.D., Stanford University

Adjunct Professors

Robert Carney

(Psychiatry)
Ph.D., Washington University

Kenneth Freedland

(Psychiatry)
Ph.D., University of Hawaii

Barry Hong

(Psychiatry)
Ph.D., Saint Louis University

Patrick Lustman

(Psychiatry)
Ph.D., Michigan State University

James D. Miller

(Speech and Hearing)
Ph.D., Indiana University

Marcus E. Raichle

(Radiology)
M.D., University of Washington

Adjunct Associate Professors

C. Robert Almli

(Occupational Therapy)
Ph.D., Michigan State University

John Newcomer

(Psychiatry)
M.D., Wayne State University

John Rohrbaugh

(Psychiatry)
Ph.D., University of Illinois

R. Keith Sawyer

(Education)
Ph.D., University of Chicago

Research Professor

Joel Myerson

Ph.D., Arizona State University

Lecturers

Amy D. Bertelson

Ph.D., Ohio State University

Patricia Cooper

Ph.D., Washington University

David Dodd

Ph.D., University of Utah

Delores Kennedy

Ph.D., Pennsylvania State University

James D. Reid

Ph.D., Fordham University

Professors Emeriti

Jack Botwinick

Ph.D., New York University

Ira J. Hirsh

Ph.D., Harvard University

Jane Loevinger

Ph.D., University of California–Berkeley

Anthony Schumah

Ph.D., Washington University

John A. Stern

Ph.D., University of Illinois

Robert L. Williams

Ph.D., Washington University

Psychology allows you to examine in depth the study of behavior in the areas of aging and development, biological bases of behavior, brain-behavior interactions, clinical and abnormal psychology, cognitive strategies, learning and memory, motivation, personality, sensation and perception, and social interactions.

Because psychology has broad applications to many professions and scientific specialties and helps you develop important thinking and reasoning skills, it is a popular major choice for students pursuing a variety of career and academic paths. You may have a dual major in psychology and another discipline. Courses also are available for non-majors seeking a general survey of psychology. You may design a course of study, in conjunction with your major adviser, that best meets your interests and long-term career goals.

The psychology department at Washington University has particular strengths in the areas of aging, human development, cognitive sciences, history of the neurosciences, operant conditioning, neuropsychology research, personality and abnormal psychology, sensory processes in vision and audition, and social theories of self and social processes.

As a psychology major, you have the opportunity to study with faculty members who are leading scholar-teachers committed to your undergraduate learning experience. You are encouraged to become involved in cutting-edge research with faculty members, who also serve as major advisers. Supervised fieldwork with community service agencies and practicums are available through the degree program. You also may pursue membership in Psi Chi, the national honor society in psychology that encourages scholarship in the advancement of psychology.

A degree in psychology can help you prepare for a variety of graduate programs and careers in business, education, law, medicine, and other health professions, such as clinical psychology and social work.

The Major: You are required to complete Psych 100B (Introduction to Psychology) as a prerequisite to the major and a minimum of 25 additional units in psychology, of which at least 22 units must be at the 300 level or above. For a course to count toward the major in psychology, you must achieve a grade of C– or better.

The required 28 units must include Psych 100B (Introduction to Psychology), Psych 300 (Introductory Psychological Statistics), Psych 301 (Experimental Psychology), and at least one course chosen from each of the following three categories:

Social/Developmental:

- Social Psychology (Psych 315)
- Developmental Psychology (Psych 321)
- Psychology of Adolescence (Psych 325)
- Psychology of Aging (Psych 326)
- Social Gerontology (Psych 427)

Personality/Abnormal:

- Psychology of Personality (Psych 353)
- Behavior Modification and Self-Management (Psych 314)
- Abnormal Psychology (Psych 354)
- Introduction to Clinical Psychology (Psych 357)
- Psychopathology of Childhood (Psych 478)
- Psychology and Psychopathology of the Family (Psych 479)

Brain, Behavior, and Cognition:

- Sensation and Perception (Psych 330)
- Biological Psychology (Psych 3401)
- Cognitive Psychology (Psych 360)
- Cognitive Neuroscience (Psych 3604)
- Psychology of Learning (Psych 361)
- Human Learning and Memory (Psych 380)

- Psychology of Language (Psych 433)

A maximum of 6 units total of approved University College psychology courses, 100-level and 200-level classes, approved cross-listed courses originating from another de-

partment, transfer courses, and independent study-type classes (e.g., Psych 225, 235, 498, 499, 500) may be counted toward the minimum required units needed for the major. (The student, of course, may complete more than 6 units. However, only 6 can be used to satisfy the minimum requirements for the major.)

The Minor: You are required to complete a minimum of 15 units in psychology with a grade of C– or better, 12 of which must be in courses numbered 300 or above. No more than 3 units total of approved cross-listed courses originating outside the Department of Psychology, psychology courses taken in University College, courses taken at other universities, and independent study-type courses may count toward the minor.

Senior Honors: To be admitted into the Honors program, you must have a superior academic record and meet other requirements. You must successfully complete Psych 498 and 499, be supervised by a faculty member in the department, and complete an Honors project and written thesis. Recommendations for Honors are made by the department.

Undergraduate Courses

Psych 100B. Introduction to Psychology

Same as Psych 100B.

A survey and analysis of concepts, theory, and research covering the areas of learning, memory, social, abnormal, clinical, physiological, and sensory psychology. This is a general survey course designed to introduce students to the diversity of areas, approaches, and theories that comprise the study of mind and behavior. Psych 100B is required of all majors and is prerequisite to all upper-level courses in Psychology. Credit 3 units.

A&S SS FA SSP

Psych 102. Seminar: Introduction to Psychology

This seminar will enable students enrolled in Introduction to Psychology (Psych 100B) to explore in greater depth several of the ideas and concepts in contemporary psychology. Concurrent enrollment in Psych 100B required. Credit 1 unit.

A&S SS FA SSP

Psych 109. Research Seminar in Psychology

Weekly presentations by various members of the psychology faculty; introduces students to research areas and current issues. Attendance at all lectures required. Open to freshmen and sophomores only. Prerequisite: Psych 100B. Credit/No Credit only. Credit 1 unit.

A&S SS FA SSP

Psych 221. Introduction to Memory Studies

This course focuses on memory not only as an individual phenomenon but also as the basis for the transmission of culture and the construction of collective identity. We will survey such topics as experimental methods and findings in the study of individual memory; questions of accuracy and vividness of memory and witness reports; repressed memories; transmission of cultural norms and identity through narratives; shared historical memories; individual trauma and historical upheaval; revision of the past and political usage of collective memory. Credit 3 units.

A&S SS

Psych 225. Internship in Psychology

An opportunity to gain practical, applied experience in a nonacademic, community service agency. For description of prerequisites, course goals, agency selection, registration policies, and

course requirements, obtain a copy of “A Guide to Internship in Psychology,” available in Room 225, Psychology Building. This course can be taken only once. Enrollment by the Internship Coordinator only. Credit/No Credit only. Credit 3 units.

FA SSP

Psych 234. Introduction to Speech and Hearing Sciences and Disorders

Same as Educ 234.

A&S SS

Psych 235. Practicum in Applied Behavior

Analysis: Autism/PDD

An opportunity to be trained in applied behavior analytic techniques and to work with a child with autism/pervasive developmental disorder. Training and supervision will be arranged and coordinated by the family of the child and their consultant. To receive credit, students must undertake a year’s work with the child, complete the minimum number of hours of training and therapy, and attend regular therapy meetings. In addition, students must meet with the practicum coordinator for discussion of assigned readings and presentations on autism and therapy. Completion of a paper also is required. For further information and petition form, pick up the Practicum brochure from the department. This course can only be taken once for credit. Credit/No Credit only. Enrollment through the practicum coordinator only. Credit 3 units.

FA SSP

Psych 300. Introduction to Psychological Statistics

Same as STA 340.

Descriptive statistics including correlation and regression. Inferential statistics including nonparametric and parametric tests of significance through two-way analysis of variance. Course emphasizes underlying logic and is not primarily mathematical, although knowledge of elementary algebra is essential. Prerequisite: Psych 100B. Credit 3 units.

A&S NS QA FA NSM

Psych 301. Experimental Psychology

Training in the logic and techniques of psychological research intended to provide students with experience in design and interpretation of psychological research. Emphasis on experimental control, library research, quantitative treatment of data, and clarity of scientific writing. Prerequisites: Psych 300. Credit 4 units.

A&S NS FA NSM

Psych 304. Educational Psychology

Same as Educ 304.

A&S SS FA SSP

Psych 305. Health Psychology

Review and discussion of psychobiological approaches to health, as well as psychological aspects of physical illness. Topics: stress and coping, psychosocial factors in the etiology and progression of chronic illness, and psychological sequelae of chronic illness. There will be an emphasis on research methodology and results. Prerequisite: Psych 100B. Credit 3 units.

A&S SS FA SSP

Psych 3091. Lesbian, Gay, Bisexual Identity Development

Same as WGS 3091.

Examination of sexual orientation and identity. Topics: historical perspectives, gender socialization, identity formation across the life span, cultural prejudices, the liberation movement, and recent legal changes affecting stigmatized minorities. Prerequisite: Psych 100B. Credit 3 units.

A&S SD, SS FA SSP

Psych 314. Behavior Modification and Self-management

Provides an overview of behavior modification and its applications for behavior change in various

personal and social contexts. An important focus will be on how behavioral tools can be used to enhance the personal change process leading to effective self-improvement. Prerequisite: Psy 100B. Enrollment limited to 15. Credit 3 units.

A&S SS

Psych 315. Introduction to Social Psychology

Same as Lw St 315, STA 380, PNP 3151.

Introduction to the scientific study of individual behavior in a social context. Topics: person perception, stereotyping and prejudice, attitudes, memory, and political psychology, among other issues. Prerequisite: Psych 100B. Credit 3 units.

A&S SS FA SSP

Psych 321. Developmental Psychology

Same as PNP 3211.

This course concentrates on the cognitive and social development of the person from conception to adolescence. Topics covered include: infant perception, attachment, cognitive development from Piagetian and information processing perspectives, aggression, and biological bases of behavior. Prerequisite: Psych 100B. Credit 3 units.

A&S SS FA SSP

Psych 3221. Developmental Psychology II: Social Development

Focuses on research and theories pertaining to social development during infancy and childhood. That is, as they develop, how do children interact with, think about, and learn from other people? Topics include: attachment, day care, social cognition, prejudice, aggression, prosocial behavior, morality, gender roles, peer relations, and parenting. Prerequisite: Psych 100B. Credit 3 units.

A&S SS FA SSP

Psych 323. Play and Development

Same as Educ 337, PNP 323.

An examination of current research and theory in play, in development and education, from infancy through the early school years. Topics include play and the development of language, social skills, creativity, and cognitive abilities. We will also examine the uses of play in educational contexts, focusing on preschool and the early primary grades. Prerequisite: Psych 321 or Educ 304. Same as 337 Educ Credit 3 units.

A&S SS FA SSP

Psych 325. Psychology of Adolescence

Same as Educ 325.

A broad introduction to adolescence as a developmental period of transition and change. The major topics include the fundamental changes of adolescence; the context of adolescence; and processes of psychological development. Prerequisite: Psych 100B. Credit 3 units.

A&S SS FA SSP

Psych 326. Introduction to the Psychology of Aging

Study of the processes of aging in the individual in terms of their behavioral effects. Age changes in biological functions, sensation, perception, intelligence, learning, memory, and creativity studied to understand the capacities and potentials of the mature and older person. Prerequisite: Psych 301. Credit 3 units.

A&S SS

Psych 329. The Psychology of Women

Examines the current status of research evidence regarding gender differences in human behavior and compares explanations of gender differences from several theoretical perspectives, including psychoanalytical theory, social learning theory, social/cultural perspectives, evolutionary theory and biological perspectives, and cognitive developmental theory. Discussion of patterns of public attitudes and beliefs about gender roles and gender

differences and their impact on the study of gender issues. Prerequisite: Psych 100B. Credit 3 units.

A&S SS FA SSP

Psych 330. Sensation and Perception

Same as PNP 330.

Structure and function of several sensory systems and techniques for studying them; emphasis on vision. Perceptual experience examined by considering the underlying physiological activity, as well as higher-level cognitive influences. Prerequisite: Psych 100B. Credit 3 units.

A&S NS FA NSM

Psych 331. Introduction to the Psychology of Hearing

This course will examine the perception of auditory stimuli. The focus will be on the psychological response to acoustic events and the mechanism mediating those responses. Topics will include basic acoustic concepts, pitch perception, localization, and auditory stream segregation. Prerequisite: Psych 100B. Credit 3 units.

A&S SS FA SSP

Psych 3401. Biological Psychology

Same as PNP 3401.

An introduction to physiological mechanisms underlying behavior. Topics will include the physiology of nerve cells, anatomy of the nervous system, control of sensory and motor activity, arousal and sleep, motivation and higher mental processes. Prerequisite: Psych 100B. Credit 3 units.

A&S NS FA NSM

Psych 344. Introduction to the Nervous System

Same as Biol 3411.

A&S NS FA NSM

Psych 345. Genes, Environment, and Human Behavior

Same as Psych 534.

This class will examine how genetic influences impact various dimensions of human behavior, ranging from personality to clinical disorders. Topics to be covered include methods used to study genetic influence, how genetic predispositions interact with the environment, and ethical implications of genetic research in psychology. Credit 3 units.

A&S SS

Psych 353. Psychology of Personality

Same as MLA 5115.

Review of basic theoretical orientations to the understanding of personality and complex human behavior. Overview of related techniques, procedures, and findings of personality assessment and personality research. Discussion of critical issues in evaluation of personality theories. Prerequisite: Psych 100B. Credit 3 units.

A&S SS FA SSP

Psych 354. Abnormal Psychology

Same as MLA 5321, MLA 354, Lw St 354.

Survey of deviant and maladjusted behavior including neuroses and psychoses; consideration of biological, social, and individual determinants of maladjustment. Cultural perspectives on mental health and illness. Diagnosis, etiology, and treatment. Review of pertinent research. Prerequisite: Psych 100B. Credit 3 units.

A&S SS FA SSP

Psych 357. Introduction to Clinical Psychology

A survey of clinical psychology. Emphasis is placed on historical and recent developments in the field (e.g., managed care), as well as the consideration of the roles, functions, and techniques of clinical psychologists including psychological testing and psychotherapy. Prerequisite: Psych 100B. Credit 3 units.

A&S SS FA SSP

Psych 358. Language Acquisition

Same as PNP 358, Ling 358, Educ 358.

This course examines the development of language skills in children, asking how children so rapidly learn their first language. Topics include: biological bases of language development; development of phonology, syntax, and morphology; language development in atypical populations; childhood bilingualism; and development of written language skills. Prerequisite: Psych 100B or Ling 170D. Credit 3 units.

A&S SS FA SSP

Psych 360. Cognitive Psychology

Same as PNP 360.

Introduction to the study of thought processing from an information-processing approach. Emphasis on theoretical models grounded in empirical support. Topics include pattern recognition, attention, memory, reasoning, language processes, decision making, and problem solving. Prerequisite: Psych 100B. Credit 3 units.

A&S NS FA NSM

Psych 3604. Cognitive Neuroscience

Same as PNP 3604.

A general introduction to the underlying principles and mechanisms of brain function that give rise to complex human cognitive behavior. Emphasis will be placed on how emerging methods and approaches from both neuroscience and cognitive psychology have been integrated to yield new insights into the organization and structure of higher mental processes. Topics include perception, attention, memory, language, and executive control. Prerequisite: Psych 100B. Credit 3 units.

A&S NS FA NSM

Psych 361. Psychology of Learning

Same as PNP 361, Psych 3611.

Basic learning processes in animals, such as conditioning, reinforcement, punishment, and constraints on learning. Comparisons and interactions between classical and operant conditioning. Consideration given to learning theorists and theories, along with applications from the laboratory to the "real world." Prerequisite: Psych 100B. Credit 3 units.

A&S NS FA NSM

Psych 361A. Psychology of Learning:

Laboratory

This laboratory course is a supplement to the Psychology of Learning (Psych 361) class. Students will gain firsthand experience, via a virtual rat, of principles and procedures related to the acquisition and maintenance of behavior. Weekly lab meetings introduce Pavlovian and Operant principles that are then implemented as laboratory exercises with the virtual rat. Concurrent enrollment in Psych 361 required. Credit 1 unit.

A&S NS

Psych 3621. Topics Seminar: Collective and Individual Memory

Same as STA 3051.

A&S SS FA SSP

Psych 366. Psychology of Creativity

Same as Educ 366.

A&S SS FA SSP

Psych 367. Seminar in Positive Psychology

Reviews the relatively recent development in the field known as "Positive Psychology." Topics may include: happiness and life-satisfaction, positive self-esteem, creativity, caring relationships, love—passionate and otherwise, empathy, optimism, ambition, moral character development, attachment, compassion, forgiveness, helping, work ethics, and successful aging. Designed to take a sampling of those aspects of psychology that emphasize the positive side of human nature. Prerequisite: Psych 100B and at least one 300-level course. Credit 3 units.

A&S SS FA SSP

Psych 380. Human Learning and Memory*Same as PNP 380.*

A survey of issues related to the encoding, storage, and retrieval of information in humans. Topics include memory improvement strategies, people with extraordinary memories, memory illusions and distortions, among other topics. Prerequisite: Psych 100B & Psych 360. Credit 3 units.

A&S NS FA NSM SSP**Psych 4001. Introduction to Neuropsychology***Same as PNP 4001.*

Introduction to the field of brain-behavior relationships: the neurological basis of cognitive and psychological functions such as language, spatial ability, attention, and memory. Selected pathological syndromes associated with brain dysfunction also presented. Limit: 20 junior and senior psychology majors, psychology graduate students, and others with relevant backgrounds. Prerequisite: An introductory course in the neurosciences or one in biological psychology. Credit 3 units.

A&S NS FA NSM**Psych 4044. Topics in Cognitive Neuropsychology**

Advances in the understanding of abilities such as memory, attention, and language will be discussed, with a focus on recent research that integrates the theoretical perspectives of cognitive psychology and neuropsychology. Findings from investigations using neuroimaging techniques, psychophysiological techniques, and patients with brain disorders will be emphasized. Prerequisite: Psych 100B or permission of instructor. Credit 3 units.

A&S NS FA NSM**Psych 4046. Developmental Neuropsychology***Same as PNP 4046.*

Development of the brain and associated changes in cognitive abilities will be discussed, with an emphasis on recent research that integrates the theoretical perspectives of cognitive psychology and neuropsychology. Discussion will focus on early development and disorders affecting the brain such as cerebral palsy, sickle cell disease, and autism. Prerequisite: Completion of a course in developmental psychology, cognitive psychology, or neuropsychology. Credit 3 units.

A&S NS WI FA NSM**Psych 4047. History of Neuroscience***Same as PNP 4047.*

The study of the relationship between brain and behavior from trephination and head injuries in ancient people through ancient Egypt, Greece, and Rome into the Renaissance and more modern times. Emphasis on higher brain functions. Prerequisite: A course in physiological psychology, neuropsychology, or the nervous system, or permission of instructor. Credit 3 units.

A&S SS FA SSP**Psych 4051. Conceptual Issues in Psychology**

Behaviorism has been called a monumental triviality by some while cognitivism is seen by others as prescientific, indeed detrimental to the advancement of psychology. Examination of the theoretical and methodological issues dividing the behaviorists and cognitivists. Credit 3 units.

A&S SS FA SSP**Psych 4081. Topics in Psycholinguistics**

Language is one of the most important things that people learn, and children are able to speak in complex sentences before they can tie their shoes. How do children master this seemingly impossible task? In this course, we will cover theories and research on these issues. We will focus on language development in children who are learning English as their first language, with special consideration given to vocabulary development. We will also consider other populations, including bilingual

children and children with language difficulties. Prerequisite: Psych 100B, completion of a course in developmental psychology, linguistics, and/or speech and hearing sciences. Junior or senior standing. Credit 3 units.

A&S SS WI**Psych 4085. Seminar: Human Memory**

A seminar that explores the primary literature on the scientific study of human memory. Topics include retrieval processes, forgetting, distortions of memory, and individual differences in memory. Prerequisites: Cognitive Psychology (Psych 360), Human Learning and Memory (Psych 380), or permission of instructor. Credit 3 units.

A&S SS**Psych 409. Hypnosis**

Introduction to the history, current research, theories, and clinical applications of hypnosis. Topics covered will include: Induction, susceptibility scales, analgesia, amnesia, age regression, and neuro-behavioral parameters of the hypnotic state. Extensive classroom demonstrations. Prerequisite: Psych 354. Credit 3 units.

A&S SS FA SSP**Psych 409W. Hypnosis**

In-depth examination of hypnosis—its history, theories, current research, and clinical applications. Classroom presentation required, writing intensive course. Prerequisite: Junior or senior standing, Psy 100B, and Psy 354. Credit 3 units.

A&S SS WI**Psych 413. Contemporary Topics in Social Psychology: Intolerance and Prejudice***Same as Pol Sci 4131.*

Consideration of selected contemporary topics in social psychology. Participation in a research project of appropriate scope. Prerequisite: Psych 315. Credit 3 units.

A&S SS FA SSP**Psych 4171. Factor Analysis and Related Methods***Same as ASTAT 440.***A&S NS****Psych 4182. Perception, Thought, and Action**

This course involves reading and discussion of recent journal articles on current topics in visual perception, visual attention, eye movements, and perceptual-motor behavior. The course is conducted like a graduate seminar course with no text book and with fairly unstructured discussions of the readings. Previous course work in Cognitive Psychology, Experimental Psychology, or Perception is required. Credit 3 units.

A&S NS FA NSM**Psych 4191. Psychology and Technology**

Psychological research has been critical to the development of technologies from the submarine to the graphical computer interface. At the same time, psychology has been influenced in theory and in practice by the development of new technologies. This seminar examines these mutual influences, with an emphasis on computing, information technology, and human-computer interaction. Prerequisite: Psych 100B or graduate standing. Credit 3 units.

A&S SS FA SSP**Psych 4201. Categorical Data Analysis***Same as ASTAT 420.***A&S SS****Psych 4215. Critical Issues in Child Psychopathology**

Covers issues that are critical to the emergence and maintenance of child psychopathology. Topics include: attachment; genetics; psychological development; cognitive development; cultural influences, etc. Different models of child psy-

chopathology will be considered. Prerequisite: Psych 100B and Psych 354. Credit 3 units.

A&S SS FA SSP**Psych 4255. Special Topics in Clinical Psychology**

An introduction to what clinical psychologists do, why they do it, and where they do it. Reviews the history and development of clinical practice with special attention to psychological assessment, psychotherapy, theoretical orientations, settings in which psychologists practice, and ethical issues. Written assignments in this writing-intensive course include a research paper, a case study, and a formal analysis of an ethical problem in clinical psychology. Prerequisite: Psych 354. Not open to students who have taken Psych 450 or Psych 357. Credit 3 units.

A&S SS WI FA SSP**Psych 4261. Issues of Disability in Society***Same as OT 426.***Psych 427. Social Gerontology***Same as STA 487, AMCS 4273.*

An introduction to the social aspects of aging. Specific attention is paid to demographics, physical health and illness, mental health, interpersonal relations, work issues, living arrangements, and ethical issues. Prerequisites: Junior or Senior standing and completion of 6 advanced units in Psychology. Credit 3 units.

A&S SS FA SSP**Psych 429. Seminar on Research and Clinical Issues in Family Therapy**

Selected research and clinical issues in family therapy, such as therapy with special family structures and under special conditions. Particular emphasis on the effects and effectiveness of family therapy versus other therapeutic approaches. Prerequisites: Psych 479 or equivalent, and permission of instructor. Credit 3 units.

A&S SS FA SSP**Psych 4301. Contemporary Topics in Cognitive Development***Same as Anthro 4302, PNP 4301.*

Traditional topics in cognitive development, such as conservation, conceptual development, and category formation, examined from both information-processing and Piagetian viewpoints. Prerequisite: Psych 321 or 360. Credit 3 units.

A&S SS W FA SSP**Psych 4302. Cognitive Psychology Applied to Education**

This course is intended to cover topics in the cognitive psychology of human memory, conceptual learning, and comprehension with special focus on areas, theory, and research that have potential application to education. Thus, the course will provide selective coverage of theoretical and empirical work in cognitive psychology that provides potential to inform and improve educational practice. The applicability of these themes will be explicitly developed and evaluated through the primary research literature using educationally oriented experimental paradigms. The course is expected to be of interest and benefit to education majors and to psychology majors interested in cognitive psychology and its applications. Prerequisites: Junior/senior status, 9 units in Psychology and Psych 100B OR Junior/senior status, 9 units in Education and Psych 100B. Credit 3 units.

A&S SS**Psych 431. Hearing***Same as PACS 414.***Psych 433. Psychology of Language***Same as Ling 408, PNP 408.*

Acoustical phonetics and the speech process, auditory perception of speech; development of speech production and perception in children; phonetic,

lexical, and grammatical aspects of language communication. Prerequisite: Psych 360, Ling 170D, or permission of instructor. Credit 3 units.

A&S SS FA SSP

Psych 4351. Reading and Reading Development
Same as Educ 4351.

This course will cover theory and research on skilled reading, including such topics as eye movements and the role of inner speech in reading. Also, we will cover how children learn to read and spell, why some children have difficulty learning to read, and methods of teaching reading. Prerequisite: Permission of course instructor, junior/senior standing, and Psych 358 and Psych 360. Credit 3 units.

A&S SS

Psych 4361. Psychological Perspectives on the Self

Contemporary theories and research related to the self in social psychology. Emphasis on the self as a construct central to understanding important social phenomena. Topics include definitions and measurement of the self; motivational implications of the self for impression management, ability appraisal, and social inference. Prerequisite: Psych 315. Credit 3 units.

A&S SS WI FA SSP

Psych 438. Acoustical Phonetics and Speech Perception

Credit 3 units.

Psych 4408. Trauma and Memory

Same as STA 448.

A&S SS FA SSP

Psych 4411. Topics in Cognitive Neuroscience
Same as Biol 5601.

How the brain organizes behavior, emphasizing higher functions such as perception, language, and attention. Course aims at integration of information from neuro-biological approaches (e.g., single-unit recording, lesion-behavior experiments) and information-processing approaches (e.g., cognitive psychological models, connectionist models). Prerequisite: Psych 3401 or Psych 360 or Psych 3604. Credit 3 units.

A&S NS FA NSM

Psych 4418. Computational Modeling in Cognitive Neuroscience

Same as PNP 4418.

Introduces the ideas and methods used in simulating cognitive and perceptual processes using computational models. The focus will be on neural network mechanisms, which provide a bridge between behavioral and biological levels of analysis. The first half of the course will introduce the basic computational and biological properties of individual neurons and neuronal networks, and the learning mechanisms that organize these networks. The second half of the course will examine how these computational mechanisms can be used to explore a range of cognitive phenomena, including perception, attention, memory, language and higher-level cognition (i.e., executive control). Prerequisite: Cognitive Neuroscience (Psych 3604) or permission of instructor. Credit 3 units.

A&S NS FA NSM

Psych 444. Human Psychophysiology

This course will explore the relationship between mind and body, focusing on issues at the interface of psychology and physiology. The emphasis will be on theory, investigative techniques, basic research findings, and applications of psychophysiology. Topics addressed will include information processing, emotionality, psychopathology, individual differences, biofeedback, the polygraph and lie detection, behavioral medicine, and human sexual response. Prerequisite: Psych 100B. Credit 3 units.

A&S NS FA SSP

Psych 4450. Functional Neuroimaging Methods

This course is intended for students wishing to become sophisticated producers or consumers of functional neuroimaging data. Emphasis is on extracting the most information from neuroimaging techniques toward the goal of answering psychologically motivated questions. A number of issues relating to neuroimaging methodology are covered, including technical principles, acquisition options, potential sources of artifact, experimental design, software tools, and analytical techniques. Class approach is hands-on, with students gaining experience in actually acquiring and working with neuroimaging data. Prerequisites: Graduate standing or permission of instructor. Credit 3 units.

A&S SS FA SSP

Psych 4484. Language, Thought, and Culture

Same as Educ 4484.

A&S SS FA SSP

Psych 4495. Attitude Change and Persuasion

Overview of theory and research in the field of attitudes. Topics include: attitude formation and activation, the attitude-behavior relationship, measuring attitudes, social influence, attitude change, and persuasion techniques. Prerequisite: Psych 315. Enrollment limited to 25. Credit 3 units.

A&S SS FA SSP

Psych 4501. Psychotherapy: Research and Practice

Provides an overview of the fast-changing field of psychotherapy covering both the methods and issues of current clinical practice as well as the problems and issues related to the appraisals of the effectiveness of psychotherapy. Particular attention will be paid to recent developments. Topics discussed are of particular interest to students considering mental health careers emphasizing counseling and psychotherapy. Prerequisite: Psych 354 or 450 or by permission of instructor. Credit 3 units.

A&S SS FA SSP

Psych 450W. Theories of Psychotherapy

In-depth survey of various systems of psychotherapy including psychoanalytic, humanistic, cognitive, behavioral, and eclectic approaches. Major focus on providing a historical perspective for a critical understanding of the development of these therapies. Writing-intensive with 3 papers, one revision each. Classroom presentations also required. Prerequisites: Completed Psych 354 and junior or senior standing. Credit 3 units.

A&S SS WI

Psych 4557. Biopsychosocial Aspects of Eating Disorders and Obesity

The aim of this seminar course is to examine the epidemiology, etiology, prevention, and treatment of body image, eating disorders, and obesity. An emphasis is placed on understanding the characteristic symptoms of excessive dieting, body image disturbance, and binge eating, not only as formal psychiatric syndromes, but as a representation of disregulatory processes reflecting social-cultural, psychological, and biological disturbances. Students also learn about the clinical characteristics, medical sequelae, and physical aspects of eating disorders and obesity. Prerequisites: Psych 100B and Psych 354. Credit 3 units.

A&S SS

Psych 4604. Cognitive Neuroscience

An intensive, case-study based approach to the underlying principles and mechanisms of brain function that give rise to complex human cognitive behavior. Emphasis is placed on understanding and evaluating cutting-edge neuroscience research that has yielded new insights into the organization and structure of higher mental processes. The focus is on developing critical thinking and writing skills via a strong class participation focus and a writing intensive format. Topics include perception, atten-

tion, memory, language, emotion, and executive control. Writing-intensive. Prerequisite: Psych 100B & Biol 3411/Psych 344 or Psych 3401. Credit 3 units.

A&S NS WI

Psych 4611. Psychological Tests and Measurements

Same as Educ 4611.

In what sense can abilities and traits be measured? The history of measurement in psychology traced through abilities, especially general intelligence, objective personality tests, and projective tests. Other topics: recent theories of the nature and organization of intelligence (Cattell and Horn, Sternberg, Fischer), contemporary objections to psychological measurement (S. J. Gould). Prerequisite: Psych 300. Credit 3 units.

A&S SS FA SSP

Psych 4625. Autobiographical Memory

This course investigates how people create and remember their personal life histories, with an emphasis on empirical studies within the cognitive tradition. Possible topics include childhood amnesia, false memories, emotional memories, the role of motivation in remembering, and how personal events are represented in memory. Prerequisite: Psych 360 or Psych 301 or Psych 380 or permission of instructor. Credit 3 units.

A&S SS WI FA SSP

Psych 4629. Classic Papers on Memory (and the Ones That Got Away)

Same as Biol 5628.

Classic articles in memory are discussed in the context of why they are seminal to the field. By covering these, students are expected to obtain a broad survey of important works in memory research. Topics include amnesia, LTP, levels of processing, implicit memory, false memory, brain imaging, and others. Within each topic, articles that are less seminal, but reported at about the same time, are also discussed. A goal of the class is to debate what specifically allowed the classic articles to change the way we think. What sets them apart? Requirements include attendance, class participation, and periodic brief class presentations. Prerequisites: Graduate standing or permission of instructor. Credit 3 units.

A&S SS

Psych 4651. History and Modern Systems of Psychology

Same as PNP 4651.

An introduction to the history of psychology. This course begins with the major figures and influences on behavioral science before the 1870s. It then examines the birth of "modern" psychology in Germany, and the "schools" of psychology that emerged early in the 20th century. Newer orientations and ideas are considered in the final segment of the course. Credit 3 units.

A&S TH FA SSP

Psych 473. Seminar: Contemporary Psychology

Critical analysis of theory and research on specific issues and topics in contemporary psychology. Prerequisite: Psych 100B. Credit 3 units.

A&S SS FA SSP

Psych 4765. Biological Basis of the Major Mental Disorders

Same as PNP 4765.

This course covers research on the biological basis of the major mental disorders, including schizophrenia and related disorders, unipolar and bipolar mood disorders, obsessive compulsive disorder, panic disorder, and alcohol and substance abuse. Emphasis is on examining the evidence of genetic, neurochemical, functional, and structural abnormalities as contributing factors to the development of these disorders. Prerequisites: Psych 100B and graduate standing or advanced undergraduates with permission of instructor. Credit 3 units.

A&S NS FA NSM

Psych 478. Psychopathology of Childhood

Review of diagnostic issues in child psychopathology and mental retardation, and consideration of major forms of psychopathology unique to childhood. Emphasis on developmental context within which psychopathology may occur. Prerequisite: Psych 354. Credit 3 units.

A&S SS **FA** SSP

Psych 479. Psychology and Psychopathology of the Family

Psychopathology is considered from the point of view of interaction within the family system rather than as a function of psychological forces within the individual. Emphasis is placed upon systems theory, the normal and abnormal development of the nuclear family through time, and a brief intro to family therapy theories. Prerequisite: Psych 354. Credit 3 units.

A&S SS **FA** SSP

Psych 488. The Cognitive Neuroscience of Film
Same as PNP 4488.

To understand complex events in real life depends on perception, action, and memory. To understand movies, people probably depend on similar psychological and neural mechanisms. This seminar uses results from psychology and neuroscience to try to better understand the experience of a movie viewer, and uses theory and practice to explore psychological hypotheses about perception. Credit 3 units.

A&S NS

Psych 4971. Undergraduate Teaching

Limited opportunities for outstanding undergraduates to serve as teaching assistants for selected departmental courses. Application form and list of potential classes are available from Gary Massey, Administrative Officer, Psychology Department, room 223B. Prerequisite: permission of course instructor, departmental approval, and junior/senior standing. Weekly meetings with coordinator required. Credit cannot be counted toward fulfilling the requirements for the major or minor in Psychology. Credit/No Credit only. Credit 2 units.

FA SSP

Psych 498. Study for Honors

Prerequisite: Acceptance into the Honors program. Credit 3 units.

A&S SS **FA** SSP

Psych 499. Study for Honors

Prerequisites: Acceptance into the Honors program and Psych 498. Credit 3 units.

A&S SS **FA** SSP

Psych 500. Independent Work

Prerequisites: Psych 100B and written permission of a supervising faculty member and the chair of the department. Credit variable, maximum 3 units.

Religious Studies

Director

Beata Grant, Professor
(Asian and Near Eastern Languages and Literatures and Religious Studies)
Ph.D., Stanford University

Endowed Professors

John R. Bowen
Dunbar–Van Cleve Professor in Arts & Sciences
(Anthropology)
Ph.D., University of Chicago

Pascal Boyer
Henry Luce Professor of Individual and Collective Memory in Arts & Sciences
(Anthropology)
Ph.D., University de Paris–Nanterre

Hillel J. Kieval
Gloria M. Goldstein Professor of Jewish History and Thought
(History)
Ph.D., Harvard University

Professors

Robert D. Lamberton
(Classics)
Ph.D., Yale University

David Lawton
(English)
Ph.D., University of York

George M. Pepe
(Classics)
Ph.D., Princeton University

Associate Professors

Pamela Barmash
(Asian and Near Eastern Languages and Literatures)
Ph.D., Harvard University

Eric Brown
(Philosophy)
Ph.D., University of Chicago

Ahmet T. Karamustafa
(History and Religious Studies)
Ph.D., McGill University

Fatemeh Keshavarz
(Asian and Near Eastern Languages and Literatures)
Ph.D., University of London

Max J. Okenfuss
(History)
Ph.D., Harvard University

Mark Pegg
(History)
Ph.D., Princeton University

Assistant Professors

Martin Jacobs
(Asian and Near Eastern Languages and Literatures; Jewish, Islamic, and Near Eastern Studies)
Ph.D., Habilitation, Free University of Berlin

Christine Johnson
(History)
Ph.D., Johns Hopkins University

Pauline Lee

(Asian and Near Eastern Languages and Literatures and Religious Studies)
Ph.D., Stanford University

Rebecca Lester
(Anthropology)
Ph.D., University of California–San Diego

Clare Palmer
(Philosophy and Environmental Studies)
Ph.D., Oxford University

Sarah Rivett
(English)
Ph.D., University of Chicago

Nargis Virani
(Asian and Near Eastern Languages and Literatures)
Ph.D., Harvard University

Adjunct Professor

Frank Flinn
Ph.D., University of St. Michael's College–Toronto

Lecturer

Jerome Bauer
(Religious Studies)
Ph.D., University of Pennsylvania

Adjunct Associate Professor

Robert Wiltenburg
(English)
Ph.D., University of Rochester

Professors Emeriti

Carl W. Conrad
(Classics)
Ph.D., Harvard University

George C. Hatch, Jr.
(History)
Ph.D., University of Washington

Robert E. Morrell
(Asian and Near Eastern Languages and Literatures)
Ph.D., Stanford University

James F. Poag
(Germanic Languages and Literatures)
Ph.D., University of Illinois

Burton M. Wheeler
(English)
Ph.D., Harvard University

Religious Studies is an interdisciplinary program that brings together courses from various disciplines in the humanities and social sciences to study the major religious traditions of the world. Majoring in religious studies will prepare students for careers in education, research, and business as well as law, health care, social work, and religious professions. The program offers introductory and more specialized courses in the study of Christianity, Islam, Judaism, and the religious traditions of East and South Asia; it is designed, however, to emphasize the comparative and multicultural aspects of the study of these religions.

In-depth study of religion is concerned with the most fundamental values and the

deepest value-conflicts of human individuals and communities. In this program, students will be able to explore central questions about the human condition in a critical, but empathetic manner. In addition, because the academic study of religion is intrinsically multicultural and international in nature, majoring in Religious Studies will inevitably broaden students' cultural horizons and increase their knowledge, understanding, and experience of global human diversity. Finally, because the program's faculty is drawn from different disciplines, Religious Studies will expand students' familiarity with the disciplinary approaches available in the humanities and social sciences and will help students think seriously about linkages among these different academic endeavors.

The Major: The major in Religious Studies requires the completion of a minimum of 30 units of course work, of which at least 18 units must be at the 300 level or above. The selection of courses should be guided by the following requirements:

1. Two required foundation courses: Religious Studies 105 Introduction to Judaism, Christianity, and Islam and Religious Studies 106 Introduction to Hinduism, Buddhism and East Asian Religions.

2. A minimum of one course in theoretical approaches to Religious Studies, normally Religious Studies 368 Theories and Methods in the Study of Religion.

3. Majors are required to focus on two out of three possible areas of concentration: within each of these two concentrations, students must complete at least 9 units of course work, at least 6 units of which must be at the 300-level or above. The three areas of concentration are: 1) Judaism, Christianity and Islam; 2) Hinduism, Buddhism, and East Asian Religions; and 3) Religion, Culture and Society.

In addition, all majors, unless they are writing an Honors thesis or fulfilling a capstone requirement for a second major, are required to take the Asian and Near Eastern Languages and Literatures Senior Seminar during their senior year.

While the study of relevant languages (for example, Greek, Biblical Hebrew, Classical Chinese) is not formally required for the major, students are strongly encouraged to gain proficiency in at least one language relevant to their interests in Religious Studies.

The Minor: Requirements for the minor in Religious Studies require successful completion of 18 units in Religious Studies courses, of which at least 9 should be at the 300 level or above. Required courses include Religious Studies 105 Introduction to Judaism, Christianity, and Islam, Religious Studies 106 Introduction to Hinduism, Buddhism, and East Asian Religions, and one 300-level course in the theoretical approaches to the study of religion, normally Religious Studies 368 Theories and Methods in the Study of Religion. Minors do not need to choose areas of concentration.

Senior Honors: Qualified majors are encouraged to apply for Senior Honors before the end of the junior year. Students wishing

to pursue this option need to meet the minimum Honors requirements stated in this *Bulletin*, and satisfactorily complete, during the senior year, Religious Studies 498 Independent Work for Senior Honors (fall) and, Religious Studies 499 Independent Work for Senior Honors (spring), to be taken in addition to all other departmental requirements. Honors work will be supervised by a three-member departmental Honors Committee composed of a primary adviser and two additional faculty, which plans with each student an independent Honors research paper in the student's area of academic interest.

Transfer Credit: A maximum of 6 units of advanced course work (300 level and above) completed at another university, whether in the United States or abroad, may be applied toward the major; a maximum of 3 units may be applied toward the minor. In either case, credit will only be awarded to those courses that have been approved by the Religious Studies Program.

Undergraduate Courses

Re St 105. Introduction to Judaism, Christianity, and Islam

Same as JNE 1051.

Judaism, Christianity, and Islam are elaborate and dynamic systems of belief and practice. While each of them is a distinct religious tradition, all three share a common cultural background, harbor similar views of the individual, and assume a linear perspective of history. Moreover, the historical trajectories of these three Western monotheisms have been intricately intertwined: Christianity emerged out of Judaism, and Islam took shape largely in a Jewish and Christian context. This course explores these monotheistic traditions in a comparative perspective with ample attention to questions of historical context and development. Our coverage is explicitly topical and comparative, and the themes examined include scripture and interpretive tradition, monotheism, authority, worship and ritual, ethics, material culture, as well as religion and political order. Note: This class is open to all interested students. It is required for all Religious Studies majors and minors. Credit 3 units.

A&S TH

Re St 106. Introduction to Hinduism, Buddhism, and East Asian Religions

Same as ACC 106.

Hinduism and Buddhism both arose in India and while each represents an elaborate and complex system of belief and practice that is historically unique, they share certain basic views of the individual, an acceptance of the karmic law of cause and effect, and a cyclical rather than linear perspective of history. Buddhism also became a very important religious tradition in Central and East Asia where it adapted to the different indigenous cultural and religious worlds it encountered, including those of Confucianism, Daoism, Tibetan Bon, and Shinto. This course explores these religious traditions of India, China, and Japan in a comparative perspective. Although ample attention is given to questions of historical context and chronological development, our approach is largely topical and comparative: some of the common religious themes we examine include scripture and interpretive tradition, spiritual authority, worship and ritual, ethics, material culture, and religion and the political order. Note: This class is open to all interested students. It is required (along with Religious Studies 105) for all Religious Studies majors and minors. Credit 3 units.

Re St 120. Sorcerers and Shamans: Carlos Castaneda and Don Juan

This course examines the controversial writings of Carlos Castaneda, whose doctoral dissertation concerning his apprenticeship to Don Juan, a Yaqui sorcerer, became a best-seller in the 1970s. Many readers were inspired to take up the path of the shaman by this book and its sequels. Castaneda and his mentor, Don Juan, still have a considerable cult following, despite the revocation of Castaneda's Ph.D. in anthropology, on grounds of hoaxing. We read both Castaneda and the work of the psychologist Richard DeMille and others, who simultaneously debunk and revalidate Castaneda's writings. What makes a work authentic? What is the difference between a work of scholarship, a work of fiction, and a religious revelation? We also read and discuss general work on sorcerers and shamans, in scholarship and popular culture, and ethnomethodology. No prerequisites. Credit 3 units.

A&S TH

Re St 160. Science Fiction and Religion: May the Force Be With You

This course examines religious and spiritual themes in science fiction and fantasy. We discuss millenarian, apocalyptic, theological, and alchemical themes in classic works by H.G. Wells, C.S. Lewis, and Robert A. Heinlein, and in *Star Wars*, *Star Trek*, *The X-Files*, *Harry Potter*, *The Matrix*, *Buffy the Vampire Slayer*, and other films and TV programs. The course introduces genres such as Christian fantasy, Hindu science fiction, magical realism, and Gothic fantasy. We also examine new religious movements, or "cults," growing out of the fan subculture. How seriously should we take popular entertainment? What happens if we take it too seriously? No prerequisites. Credit 3 units.

A&S TH

Re St 180. Freshman Seminar: Understanding Religion

There are many ways to approach the study of religion: this semester, gender is the organizing theme. For most of history, and for most of the world's people, there have always been important differences between the ways men and women imagine, experience and practice religion. What this means is that one cannot ask what religious beliefs and practices—symbols, scriptures, liturgies, rituals—mean without asking "For whom do they mean?" Until one does so, one cannot claim to have a complete and accurate understanding of the meaning and function of religion. Although gender includes both men and women, until fairly recently women's perspectives have been discounted, marginalized, or simply absent from the academic study of religion. It is for this reason that in this class we focus on women as creative agents and participants, although our ultimate goal is to begin to see religion through an androgynous rather than a purely androcentric lens. We explore these very important questions from a cross-cultural and comparative context, including not only the Judeo-Christian and Islamic traditions, but also those of Asia, including Hinduism and Buddhism. Limit 15 students. Credit 3 units.

A&S TH FA SSP

Re St 201F. Christianity in the Modern World

Same as Re St 203.

Survey of the development of Christianity since the Reformation, focusing on its internal divisions and its responses to the challenges of empirical science, capitalism, and European expansion into Africa, Asia, and the Americas; attention to contemporary ecumenism and social change. Credit 3 units.

A&S TH FA SSP

Re St 208F. Introduction to Jewish Civilization

Same as JNE 208F.

A&S TH FA SSP

Re St 210C. Introduction to Islamic Civilization*Same as JNE 210C.***A&S** CD TH **FA** SSP**Re St 214. Contemporary Issues in Islam**

An examination of the place of Islamic religion and cultures in the modern world. Topics include shurah and democracy, fundamentalism, religious reform, gender, racism, the reaction to Westernization, globalization, Sufism, the orientalism debate, medical ethics. We explore Muslim scholars' and thinkers' response to these issues. Traditional scholars are considered insofar as they are related to ongoing discussion in contemporary Islamic societies. Credit 3 units.

A&S TH **FA** SSP**Re St 221. The Christian Traditions**

A general introduction to the major historical periods, figures, structures, and piety of Christianity. In this course, we pay special attention to Christianity as a religion within history, noting its variety and adaptability in such diverse settings as late Roman civilization, Russia, medieval Europe, and the United States. Credit 3 units.

A&S TH**Re St 223. Hindu Medicine and Indian Food**

Hindu medicine cannot be separated from Hindu religion and philosophy; one cannot understand Hinduism without understanding the basics of Hindu medical and nutritional theory. The course covers the development of South Asian medicine, nutritional theory, and foodways, from prehistory to the present, with attention to their religious significance. Indian civilization is introduced by exploring systems of belief concerning food, and the mutual relations between the cuisines of India and other world civilizations are examined. Special topics include the controversy concerning Soma, the Indo-Roman spice trade, diffusion of food items throughout Asia and the world, Ayurvedic and Chinese theories of nutrition, alchemy vegetarianism, classical culinary texts, culinary systems of South Asian religious minorities, New World influences, Southeast Asian cuisines, and the anthropology of food. Credit 3 units.

A&S TH **FA** SSP**Re St 240. Primal Religions of the Americas***Same as AMCS 240.*

The aim of this course is to discover the connections between primal religions of the Americas, from the Bering Strait to Tierra del Fuego. Special attention is given to the interrelation of sacred myth and ritual to social life forms in selected regional societies (e.g., Inuit, Maya, Quechua); sacroparallelism between Christianity and indigenous belief; revitalization movements (Ghost Dance, Handsome Lake); shamanism; blending of African forms into the primal-Christian base (Santeria, Voodoo); survival of primal religions after Columbus; modern transformations in poetry and literature. Extra visits to local sites (Cahokia, Dickensen, Washington State Park), pow-wows, and use of film. Requirements: idea journal, midterm exam, final paper. Credit 3 units.

A&S TH**Re St 245. The Buddhist Traditions***Same as East Asia 245, ACC 2451, Re St 245.*

A general introduction to the essential teachings and practices of Buddhism. Originating in India, over the centuries, Buddhism has adapted itself to many different cultural worlds, including Central Asia, Tibet, East Asia and, more recently, Europe and the United States. One of the central questions we explore is what, if anything, holds "Buddhism" together as a coherent religious tradition despite its immensely diverse cultural and doctrinal expressions. Credit 3 units.

A&S CD TH **FA** SSP**Re St 250F. The Hindu Traditions***Same as Re St 250, ACC 250.*

An introduction to Hindu practice and thought, this course explores broadly the variety of forms, practices, and philosophies that have been developing from the time of the Vedas (circa 1500 BCE) up to the present-day popular Hinduism practiced in both urban and rural India. The course pays special attention to the relation between Hindu religion and mythology and the wider cultural, social, and political contexts in which it has arisen and to which it has given shape; to questions of Hindu identity in India and America; and to relations between the Hindu majority of India and minority traditions. Credit 3 units.

A&S CD TH **FA** SSP**Re St 251F. Religious Minorities of South Asia***Same as History 251F, Anthro 251F.*

This interdisciplinary course examines the history of religious minorities of the various countries of South Asia in relation to their religious majorities, and discusses the relationship between religious identity and ethnic, national, and transnational identities. South Asia is unusually diverse in religious traditions: Hinduism, Buddhism, Jainism, Sikhism, Zoroastrianism, Islam, Judaism, "tribal" religions, and all branches of Christianity are represented, and all of these communities are minorities somewhere in this region. Credit 3 units.

A&S CD TH **FA** SSP**Re St 300. Introduction to the Hebrew Bible/Old Testament***Same as JNE 5001, JNE 300, BHBR 300.*

A survey of the Hebrew Bible (Old Testament) examined in the historical and cultural context of the ancient Near East. Traditional Jewish and Christian interpretation of the Bible is discussed. No knowledge of Hebrew required; no prerequisites. Credit 3 units.

A&S TH **FA** SSP**Re St 3010. Topics in Art History: Gothic Art: The Age of Cathedrals****Re St 3011. Intermediate Greek: The New Testament***Same as Greek 301.***A&S** LA**Re St 3021. Introduction to the History and Culture of Ancient Mesopotamia***Same as JNE 302.***A&S** TH **FA** SSP**Re St 303. The Taoist Tradition**

This class explores the various expressions of Taoism, the indigenous religion of China. Beginning with the Classical Taoist texts of the 3rd century BCE (often referred to as "philosophical Taoism"), we discuss the mythical figure of Lao Tzu and the text attributed to him (Tao Te Ching), the philosopher Chuang Tzu, and recent theories concerning the shadowy "Huang-Lao" Taoist tradition. We then examine the origins, beliefs, and practices of the Taoist religion, with its hereditary and monastic priesthoods, complex body of rituals, religious communities, and elaborate and esoteric regimens of meditation and alchemy. Credit 3 units. Credit 3 units.

A&S CD TH**Re St 3031. Christianity in the Modern World**

Survey of Christianity since the Reformation. Focus on the divisions in Christianity, its responses to modern science, the rise of capitalism, and European expansion into Africa, Asia, and the Americas. Attention to ecumenism and the contemporary status of Christianity in the world. Use of original documents. Requirements: idea journal, midterm, final paper. Credit 3 units.

Re St 304. Jewish Biblical Interpretation

In Western religious tradition, the Hebrew Bible (Old Testament) contains the revelation—the word

and directives of God. However, the Hebrew Bible is also thousands of years old, and as such, is often difficult to understand, lacking in detail, archaic, and historically irrelevant. Therefore, Western religious traditions have been compelled to reinterpret the Hebrew Bible, both to make sense of it, and to maintain its historical relevance. This course examines the many ways and methods employed by Jewish communities to reinterpret the Hebrew Bible over a period of thousands of years, in order to glean ongoing meaning and continued revelation. These communities include the Dead Sea Community (Yakhad/Qumran), Rabbinic Judaism (ancient, medieval, modern), and early Jewish-Christian communities. The goal is to understand how the Hebrew Bible is understood to be a polysemous document—one containing different meanings to different people at different times. Topics addressed include: Peshar literature (Dead Sea Scrolls), Midrash (Rabbinic interpretation), religious polemics, and methods of interpretation (hermeneutics). All texts are read in English translation; accommodation for students wishing to read texts in their original language is considered. Prerequisite: one course in Religious Studies; Jewish, Islamic and Near Eastern studies; literature; or permission of the instructor. Credit 3 units.

A&S TH **FA** SSP**Re St 305. Wisdom Literature of the Bible***Same as JNE 305, BHBR 305.*

This course introduces the student to the biblical books of Proverbs, Job, and Qohelet (Ecclesiastes). These books share the common thread of teaching people how to live skillfully and have incited controversy for millennia. We read these books in English, examine and discuss the major themes, literary structures, cultural contexts, and issues in interpretation that surround these books, and reflect upon their significance for several communities of readers in various periods of history. In order to situate these Israelite books within their ancient cultural contexts, we have opportunity to read and discuss wisdom texts from the neighboring cultures of Egypt and Mesopotamia. And, in order to appreciate the position of these books within wisdom tradition, we also look at some wisdom writings from Israel not included in the biblical canon. Credit 3 units.

A&S TH**Re St 307F. History and Theology: Introduction to the New Testament**

Primitive Christianity through the literature it produced as it emerged from a sect within Palestinian Judaism to a distinct contending faith in the Hellenistic world. Focus upon (1) major Pauline letters, (2) Synoptic Gospels (including critical methodologies), and (3) the Johannine corpus. Credit 3 units.

A&S TH **FA** SSP**Re St 3081. Early Judaism**

An introduction to the various forms of religious expression that thrived in Jewish societies of the Land of Israel and the Middle Eastern diaspora from roughly 450 BCE to 650 CE. Credit 3 units.

A&S TH **FA** SSP**Re St 3082. Introduction to Rabbinic Judaism***Same as JNE 3082.*

Survey of the historical, literary, social, and conceptual development of Rabbinic Judaism from its inception in late antiquity to the early Middle Ages. The goal of the course is to study Rabbinic Judaism as a dynamic phenomenon—as a constantly developing religious system. Among the topics to be explored are: How did the "rabbi" emerge as a movement after the destruction of the Second Temple, and to what extent can we reconstruct their history? How did Rabbinic Judaism develop in its two centers of origin, Palestine and Babylonia (Iraq), to become the dominant form of Judaism under the rule of Islam? How did Jewish

ritual and liturgy develop under Rabbinic influence? How were the rabbis organized and was there diversity within the group? What was the rabbis' view of women, how did they perceive non-Rabbinic Jews and non-Jews? As Rabbinic Literature is used as the main source to answer these questions, the course provides an introduction to the Mishnah, the Palestinian and Babylonian Talmuds, and the Midrash-collections—a literature that defines the character of Judaism down to our own times. All texts are read in translation. Credit 3 units.

A&S TH FA SSP

Re St 309. Chinese Thought

Same as Re St 3091, IAS 3090, ACC 309, East Asia 309.

This course offers an introduction to Chinese thought through a study of thinkers from arguably one of the most vibrant periods of religious-philosophical discourse in China. We examine early classical texts from the Daoist, Confucian, Mohist, and Legalist traditions, and follow arguments where the thinkers expand upon, dispute, and respond to each other in regard to questions that are still important to us today. We explore issues such as notions of the self, conceptions of the greater cosmos, the role of rituals, ideas about human nature, and the subjects of freedom and duty. Motivating the course is the underlying question, "What is the good life?" Credit 3 units.

A&S CD TH WI

Re St 3091. Confucian Thought

Same as East Asia 3091, ACC 3091, IAS 3095.

This course offers an introduction to Confucianism through a study of a select number of religious-philosophical texts ranging from circa 500 BCE through the present day. Our emphasis is on the tradition as it has evolved through time primarily in China, but also in Korea, Japan, and the United States. The course is divided into three parts. We begin with a study of Confucianism as a perpetual interpretation and re-interpretation of the classical text the Analects. We then turn to the theme of the transcendent person and examine the various and contrasting ideas put forth on the subject: transcendence through study of the classics, through meditation, through mystical intuition, and through arduous physical regimen. In concluding, we debate the role of Confucianism in addressing contemporary ethical issues. Credit 3 units.

A&S TH

Re St 310. Contemporary Jewish Thought

Same as JNE 310.

A&S TH FA Lit SSP

Re St 3101. The Problem of Evil

Same as JNE 5101, JNE 3101, Phil 3101.

The question of how God can allow evil to occur to the righteous or innocent people has been a perennial dilemma in religion and philosophy. We study the classic statement of the problem in the biblical book of Job, the ancient Near Eastern literature on which Job is based, and traditional Jewish and Christian interpretation of Job. We study the major approaches to the problem of evil in Western philosophical and religious thought. Credit 3 units.

A&S TH

Re St 313C. Islamic History 622–1200

Same as History 313C.

A&S TH FA SSP

Re St 314C. Islamic History: 1200–1800

Re St 315C. The Middle East in Modern Times: 1880 to the Present

Same as History 315C.

A&S TH FA SSP

Re St 319. Women and Family in Islam

Same as WGS 306.

A&S CD SS FA SSP

Re St 325F. Spiritual Classics of the Catholic Tradition

Catholicism approached from human paradigms: saint, mystic, thinker, humanist, artist, outsider. Interpretation of primary texts, focused on the unifying forms of Catholic tradition and how these forms continue to be renewed. Credit 3 units.

A&S TH FA SSP

Re St 3262. The Early Medieval World

300–1000

Same as History 3262.

A&S CD TH FA SSP

Re St 3293. Religion and Society

Same as Anthro 3293F.

A&S SS FA SSP

Re St 329F. Religion, Ritual, and Worldview

Same as Anthro 329F.

A&S SS FA SSP

Re St 3301. Religion and Science

Same as History 3302.

This course explores the relationships between religion and the natural sciences from a historical perspective, focusing on developments in the West from the 17th century to the present, with special emphasis on Galileo, Darwin, and contemporary issues raised by cosmology and evolutionary biology. Topics include the Bible and science, natural theology, and the viability of religious belief in the context of 20th-century science. Credit 3 units.

A&S TH

Re St 3302. Topics in Religion and Science

Credit 3 units.

A&S TH

Re St 3313. Women and Islam

Same as Anthro 3313.

A&S CD SS FA SSP

Re St 333F. Mesopotamian Mythology: Stories from Ancient Iraq

Same as JNE 345.

A&S CD TH

Re St 334C. History of the Jews in Christian Europe

Same as History 334C.

A&S CD TH FA SSP

Re St 335C. The Jews in the Modern World

Same as History 335C.

A&S CD TH FA SSP

Re St 3361. Ancient Sanctuaries: The

Archaeology of Sacred Space in the Ancient Mediterranean

Re St 336C. History of Jews in Islamic Lands

Same as History 336C.

A&S TH FA SSP

Re St 3381. Pilgrims and Pilgrimages

An exploration of pilgrimage in different religious traditions and cultures, including our own. Readings include selections from religious, literary, anthropological, and historical texts, and are supplemented by audiovisual materials, including art, music, and film. Prerequisites: Some background in one or more world religious traditions preferred. Class limited to 15. Credit 3 units.

A&S TH WI

Re St 3391. Karma and Rebirth

Same as IAS 3391.

This course examines the related concepts of karma (action and its consequences), and rebirth (the transmigration of souls, or metempsychosis), in the religious traditions of Indian origin, including Hinduism, Buddhism, Jainism, and Sikhism. The course also examines concepts of karma and rebirth in East Asian religions and in Euro-American new religions, and concepts of metempsychosis in ancient Greece, early Christianity, and

other religious traditions. Special topics include karma and medical ethics (abortion, euthanasia, suicide, cloning, organ donation); karma and the popular culture (cinema and television, science fiction, and fantasy), dohada (pregnancy craving), and the hour of death. Credit 3 units.

A&S CD TH FA SSP

Re St 3392. Topics in South Asian Religions

Credit 3 units.

A&S CD TH

Re St 3393. Miracles, Marvels, and Magic

Same as LH 4942.

According to Christian tradition, only God can perform a (supernatural) miracle, but (preternatural) marvels may be performed by angels, demons, or human magicians. The first half of the course explores the philosophical and theological implications of the supernatural/preternatural distinction for the Abrahamic traditions; also, definitions of miracle, marvel, and magic; the intellectual history of Christian miracle apologetic; alchemy, "the occult," and the hermetic tradition; miracles and marvels in the scientific revolution; "magic realism" in literature; and miracle in popular culture (fantasy and science fiction, television and cinema). We then compare the Christian concept of "miracle" with similar concepts in the other world religions, notably the "Siddhis" of Hinduism, the "Ascaryas" of Jainism, and the "Idhis" of Buddhism, in order to understand the cultural functions of the miraculous and marvelous, and the social uses of these ideas in the maintenance of religious and scientific orthodoxies and canons. Credit 3 units.

A&S TH FA SSP

Re St 3394. Veda and Vedanta

Same as IAS 3394.

An introduction to the most ancient Indian religious literature, the Vedas, and its most recent stratum: the Vedanta of the Upanishads, and the philosophical tradition of Shankara, Ramanuja, Madhva, Vivekananda and others. Vedanta philosophy is introduced in relation to the other systems of Indian philosophy. Credit 3 units.

A&S TH

Re St 339F. Yoga Traditions

Same as IAS 339F.

This course examines the theory and practice of Yoga, in historical and cultural context, from its origins in India to contemporary America. The philosophy of classical Yoga is introduced, in comparison with other systems of Indian philosophy, and with other systems of Yoga, including Hatha Yoga and Integral Yoga. The practice of Yoga is compared with other techniques of meditation, such as Buddhist and Jain meditation, and the practices of Tantra, alchemy, Ayurveda, and shamanism. The course includes guest speakers and field trips. Credit 3 units.

A&S CD TH FA SSP

Re St 343C. Europe in the Age of the Reformation

Same as History 343C.

A&S CD SD TH FA SSP

Re St 3440. The Social World of Early Christianity

Same as History 3440.

A&S TH FA SSP

Re St 3461. Zen Buddhism

This course is designed to introduce students to the history, teachings, and practice of Zen Buddhism in China (Chan), Japan (Zen), Korea (Sôn), and the United States. We discuss how Zen's conception of its history is related to its identity as a special tradition within Mahayana Buddhism, as well as its basic teachings on the primacy of enlightenment, the role of practice, the nature of the mind, and the limitations of language. We also

look at Zen Buddhism and its relation to the arts, including poetry and painting, especially in East Asia. Finally, we briefly explore the response of Zen teachers and practitioners to questions of war, bioethics, the environment, and other contemporary issues. Prerequisites: Re St 236 or Re St 245. Credit 3 units.

A&S TH FA SSP

Re St 347. Islam in Africa

Same as History 3811.

A&S CD TH FA SSP

Re St 3508. The Crusades: Cross-Cultural Perspectives

Same as History 3508.

A&S TH FA SSP

Re St 354. Shamans, Sages, and Saints: An Introduction to Korean Religion

Same as Korean 354, IAS 3541.

The purpose of this course is to survey some of the main currents in Korean religion through the study of selected religious traditions that have flourished among the Korean people on the Korean peninsula anciently and in contemporary times. These religions include Shamanism, Confucianism, Christianity, and indigenous New religions. By focusing on the people—Shamans, sages, and saints—who exemplify these traditions, as well as the search for personal welfare and prosperity, that form continuities despite the differences in doctrines, beliefs, and practices. Credit 3 units.

A&S CD TH

Re St 355. Baroque Art

Same as Art-Arch 365.

A&S TH FA AH

Re St 356C. Ancient Philosophy

Same as Phil 347C.

A&S TH FA SSP

Re St 362. High Renaissance Art

Same as Art-Arch 362.

A&S TH WI FA AH

Re St 365F. The Bible as Literature

Same as E Lit 365F.

A&S TH FA Lit

Re St 366. Approaches to the Qur'an

Same as IA 4940, JNE 562, JNE 3762.

The place of the Qur'an in Islamic religion and society. Equal emphasis on text—the Qur'an's history, contents, and literary features—and context—the place of the Qur'an in everyday life, its oral recitation, artistic uses, and scholarly interpretation. Knowledge of Arabic not required. Credit 3 units.

A&S CD TH

Re St 3661. Approaches to the Qur'an and Muhammad

Close examination of the two major sources of Islam, the Qur'an and the example of Muhammad, known as the sunna. Topics covered include: the life of Muhammad and historical emergence of Islam: Muhammad's role as the model Muslim and the concept of sunna; major themes of the Qur'an. Equal emphasis on text—the Qur'an's history, contents, and literary features—and context—the place of the Qur'an in everyday life, its oral recitation, artistic uses, and scholarly interpretation. Knowledge of Arabic not required. Prerequisite: Re St 224 or permission of the instructor. Credit 3 units.

A&S TH FA SSP

Re St 367. Religious Themes in Contemporary Literature

Same as E Lit 367.

A&S TH FA Lit

Re St 368. Theories and Methods in the Study of Religion

What is religion? In this course, we review several "classic" attempts to develop comprehensive theories of religion. Theories considered include those of E. B. Tylor, James Frazer, Sigmund Freud, Karl Marx, Emile Durkheim, Mircea Eliade, William James, Rudolf Otto, Max Weber, E. E. Evans-Pritchard, and Clifford Geertz. Readings are a combination of original writings of these figures and secondary scholarship about their views on religion. Credit 3 units.

Re St 371. Introduction to Jewish Mysticism

Consideration of the major theological ideas of the kabbalistic texts; the specific concepts important in Hasidism. Analysis of several mystical texts representing various schools, followed by supplementary lectures on material not dealt with in detail by the readings; e.g., Abulafian mysticism. Readings include the Zohar, the Hassidic masters, classic Cordoverian or Lurianic texts, and such secondary material as Scholem's *Major Trends in Jewish Mysticism*. Prerequisite: junior standing, or permission of instructor. Credit 3 units.

A&S TH FA SSP

Re St 3724. Guided Readings in Religious Studies

Readings on religion. Credit to be determined in each case.

Re St 373. Classical Jewish Philosophy

Same as JNE 309.

A&S TH FA SSP

Re St 374C. The Jews in the Ancient World

Same as JNE 301C.

A&S CD TH FA SSP

Re St 375. How the World Began: Creation Myths of the Ancient World

Same as BHBR 375, JNE 375.

We read myths and epic literature from the Bible, ancient Greece, ancient Egypt, and the ancient Near East about the birth of the gods, the creation of the world and of humanity, and the establishment of societies. These masterpieces of ancient literature recount the deeds of gods and heroes and humanity's eternal struggle to come to terms with the world, supernatural powers, love, lust, and death. This course examines how each culture borrows traditions and recasts them in a distinct idiom. Credit 3 units.

A&S CD TH WI FA SSP

Re St 376F. Sufism: God's Friends in Islam

Same as IAS 374F, Med-Ren 376F, JNE 376F.

Saintly mediators between God and humanity played a central role in the formation of Islam. This course focuses upon certain major aspects of saintly mediation such as the emergence of theories of sainthood and cults of saints, their place within Islamic religiosity (especially in comparison with prophecy), and the institutional frameworks within which such mediation occurred. Key Sufi doctrines (including self-disclosure of God, the perfect human being, mystical union, perpetual creation) and practices (spiritual retreat, ritual invocation, communal meditation/concert/dance) are studied. Related issues such as conversion to Islam and Islamization of originally non-Islamic beliefs and practices are also addressed. Credit 3 units.

A&S TH FA SSP

Re St 380. Topics in Religious Studies: From Chaos to Cosmos: Myth, Ritual, and Magic in the Ancient World

Same as JNE 381.

How did ancient societies face and try to overcome disease, death, evil, and the known? How did they construct and impose order against the chaos that seemed to lurk behind every corner? To begin to understand the mindset of ancient soci-

eties and their efforts to offset the chaos, we examine various myths, rituals, and magical practices in the Bible and ancient Near East. First, we briefly study the theoretical framework of the "iconic" terms, myth, ritual, and magic. Then we carefully read select texts that include creation myths, *Epic of Gilgamesh*, prescriptive manuals of rituals and magical activities, incantations, spells, and prayers in conjunction with scholarly literature. Topics include creation of humanity/cosmos, emergence of civilization, problem of evil, question of mortality, purification of impurity, and expulsion of demons/ghosts/witches. Credit 3 units.

A&S TH FA SSP

Re St 3801. Topics in Religious Studies

Credit 3 units.

A&S TH FA SSP

Re St 3802. Sacred Shrines and Holy Places

Same as IAS 3802.

Studies architecture, painting, ornamentation, music, and dance as religious expressions by focusing on six major shrines and the sacred arts associated with them: the Hindu temple of Konarak, the Shinto Shrine at Ise, the Buddhist temple at Borobudur, the Catholic cathedral at Chartres, the Pueblo Indian kiva at Kuuua, and the Suleymaniye mosque of Istanbul. Examines the arts and their relationship to the beliefs of the various traditions. Field trips scheduled to some local shrines, mosques, synagogues, and churches. Credit 3 units.

A&S CD TH FA SSP

Re St 381. Major Figures in Christian Thought

Critical examination of one or more of the major figures in Christian theology and apologetics (such as Augustine, Aquinas, Luther, Kierkegaard). Subject matter varies each semester. May be repeated for credit. Prerequisite: a course in biblical literature, or permission of the chair of the department. Credit 3 units.

A&S TH FA SSP

Re St 3811. Women Theologians of the 20th Century

Same as WGS 382.

Close reading of and dialogue with the writings of key women theologians beginning with the foundational work of Mary Daly (*Beyond God the Father*). We trace the evolution of woman theology from Elizabeth Fiorenza and Rosemary Reuther to Carol Christ and Judith Plaskow. Themes include goddess studies, liberation ethics, the status of women in world religions and the relation between feminist theology and critical theory. Prerequisite: one previous course in Women and Gender Studies or Religious Studies. Course requirements include extensive reading, an idea journal, one short paper, and a written final examination. Credit 3 units.

A&S TH FA SSP

Re St 382. Topics in Christian Thought: The Quest for the Historical Jesus

Who was Jesus? An itinerant, charismatic teacher? A healer and miracle-worker? A social revolutionary? In this course, we examine some of the different "Jesuses" that emerge from the historical, critical "Quest for Jesus." Primary attention is given to the "Third Quest," the scholarly movement that emerged in the 1980s and emphasizes the larger social and political context of Jesus' life and teachings. Students are encouraged to evaluate the research on the historical Jesus itself as history. Special problems concerning the nature of our sources for this effort are also explored. Credit 3 units.

A&S TH FA SSP

Re St 385. The Holocaust: The Experience of European Jewry

Re St 385D. Topics in Biblical Hebrew Texts*Same as BHBR 385D.*

A&S TH

Re St 386. Topics in Jewish History**Re St 390. Lyrics of Mystical Love, East and West***Same as Comp Lit 390.*

A&S CD TH WI FA Lit

Re St 400. Independent Study

Credit variable, maximum 3 units.

FA SSP

Re St 4000. IPH Thesis Prospectus Workshop*Same as Hum 401.*

A&S TH

Re St 4001. Asian and Near Eastern Languages and Literatures Senior Seminar: Religion and Literature**Re St 401. Theories of Ritual**

This course offers a historically grounded and comparative study of ritual theory from the 19th century to the present. The course is organized around close readings of classic and seminal theoretical readings spanning the history of religions, psychology, sociology, anthropology, linguistics, and contemporary cultural studies. Theories are studied also in their applications, through detailed case studies of ritual in a variety of cultural and social contexts. Credit 3 units.

A&S SS FA SSP

Re St 4020. Jerusalem, The Holy City*Same as JNE 4020.*

A&S CD SD TH

Re St 4021. Gender and Sexuality in Judaism*Same as JNE 403.*

A&S SD TH FA SSP

Re St 405. Diaspora in Jewish and Islamic Experience*Same as JNE 405.*

A&S TH

Re St 406. The Spanish Symbiosis: Christians, Moors and Jews*Same as Span 406.*

A&S CD TH FA Lit SSP

Re St 4101. Medieval English Literature II*Same as E Lit 4101.*

A&S TH

Re St 411. Topics in Christianity: Martyrs and Monastic Lives

Christianity prompted and was in turn shaped by a variety of vigorous ascetic practices. This course examines a selection of intriguing texts stemming from the experience of martyrdom and monasticism. We begin with the earliest portrait of Christians left to us, namely that found in the New Testament, and end with a modern reappropriation of monasticism and martyrdom as seen in the life and teaching of Charles de Foucauld. Credit 3 units.

A&S TH

Re St 412. Islamic Theology

Credit 3 units.

A&S TH FA SSP

Re St 413. Topics in Islam*Same as JNE 445.*

A&S TH FA SSP

Re St 414. Readings in Classical Chinese Philosophy*Same as Chinese 414.*

A&S CD TH

Re St 415. Topics in Judaism*Same as JNE 415.*

A&S TH

Re St 416. Messianic Movements and Ideas in Jewish History*Same as History 416.*

A&S TH FA SSP

Re St 417. Soul, Self, Person in Judaism, Christianity, and Islam: A Comparative Examination*Same as JNE 417.*

What is a "human individual"? Who am I? Do we have souls? Are we immortal? These and a host of other questions that relate to personal identity and selfhood form integral parts of theological, philosophical, spiritual teachings, and inquiry in all three of the Western monotheisms. In all three cases, the key concept at the nexus of all discussions on these issues is that of the soul. The course is designed as a critical examination of this concept. Initial coverage of Greek/Hellenistic conceptions is followed by close reading of selected texts in conjunction with relevant scholarly literature. Questions addressed include: the nature, composition, origin, and final end of the soul; its relation to God; meaning of life and death; the resurrection; communication between souls, dead and alive; dreams. Credit 3 units.

A&S TH WI FA SSP

Re St 4210. Christians and Muslims in the Mediterranean World, 1100–1650*Same as History 4210.*

A&S TH

Re St 423. Topics in American Literature*Same as E Lit 4231.*

A&S TH FA Lit

Re St 4325. Sacred Cities in Medieval Art and Culture*Same as Art-Arch 4325.*

A&S TH FA AH

Re St 4401. Topics in Rabbinic Texts: Mishnah and Gemara*Same as BHBR 440.*

A&S TH

Re St 444. The Mystical Tradition in Judaism

The role of mysticism in Jewish history through analysis of the major theological ideas of Hekhalot Literature, classic and Lurianic Kabbalah and Hasidism (all texts are read in translation). Primary texts and issues in the modern historiography of Kabbalah: Gershom Scholem's critique of Graetz, Moshe Idel's critique of Scholem. Prerequisites: 208F Introduction to Jewish Civilization or permission of the instructor. Credit 3 units.

A&S CD TH

Re St 4443. Jews and the City: Urban Dimensions of Modern Jewish Experience**Re St 448C. Russian History to the 18th Century***Same as History 448C.*

A&S TH FA SSP

Re St 455. Plato*Same as Phil 451.*

A&S TH FA SSP

Re St 4703. Hegel: Philosophical and Theological Writers*Same as Phil 4602.*

The goal of this seminar is to discover the aspects of faith and reason that inform Hegel's dynamic "system." The seminar focuses on the intense reading of *Faith and Knowledge*, *Phenomenology of the Spirit*, *Lectures on the Philosophy of History*, *Logic*, and *Lectures on the Philosophy of Religion*. Requirements: idea journal and two essays, one short, one long. Credit 3 units.

A&S TH FA SSP

Re St 471. Topics in Religious Studies: Religion in Global Context

Beginning with a genealogy of the idea of religion, we concentrate on the emergence of the concept of religion shortly before and during the Enlightenment. We then turn to the ways in which this newly emerging concept was applied to the study of non-Western cultures, which ultimately led to our current notion of "world religions," partly as a result of the "discovery" of Buddhism, Hinduism, Confucianism, and others. We then consider the secularism thesis, and its current woes. Finally, we examine religion and globalization, a topic addressed primarily by sociologists of religion. Prerequisite: senior standing. This course is required for all Religious Studies majors of senior standing. Please contact the instructor before enrolling. Credit 3 units.

A&S TH

Re St 4711. Topics in Religious Studies: Gender and Religion in China*Same as East Asia 4711, Chinese 4711, WGS 4711, IAS 4712.*

In this course, we explore the images, roles, and experience of women in Chinese religions: Confucianism, Daoism, Buddhism, and so-called "popular" religion. Topics to be discussed include: gender concepts, norms, and roles in each religious tradition; notions of femininity and attitudes toward the female body; biographies of women in Confucian, Daoist, and Buddhist literature; female goddesses and deities; and the place of the Buddhist and Daoist nun and laywoman in Chinese society. All readings are in English or in English translation. Prerequisite: senior or graduate standing. Students with no previous background in Chinese religion, literature, or culture need to obtain instructor's permission before enrolling. Credit 3 units.

A&S TH FA SSP

Re St 474. Topics in Religious Studies

Credit 3 units.

A&S TH FA Lit

Re St 476. Topics in Religious Studies: Chinese Popular Religion*Same as East Asia 4761, History 4771, IAS 4760.*

This course examines the religious lives of ordinary Chinese people over the past 3,000 years. We discuss changing religious beliefs in folk tales, myths and legends, the relationship between organized religious teachings (such as Daoism and Buddhism) and popular practice, the evolution of popular cults and the development of millenarian teachings, such as the White Lotus. Using sources from the modern period, we discuss volitive societies, martial arts, mystic pilgrimages, mountain hermits, temple life, and the influences of the state in popular religious life. All readings are in English. Some background in Asian studies is strongly suggested but not required. Prerequisite: senior or graduate standing and permission of the instructor. Credit 3 units.

A&S TH FA AH Lit

Re St 478. Religion and Violence

This seminar seeks to explore the relation of religion and violence. Major themes include sacrifice, the scapegoat, martyrdom, scarification, forms of ritual circumcision and piercing, cannibalism, holy militias, holy terror, and holy war. Concrete examples are discussed. Viewpoints range from the anthropological to the psychological, sociological, and theological. Credit 3 units.

A&S TH FA Lit

Re St 479. Senior Seminar in Religious Studies*Same as East Asia 4791, WGS 4479, IAS 4790.*

The topic for this seminar differs every year. Previous topics have included Religion in a Global World and Engendering Religion. The seminar is offered every spring semester and is required of

all Religious Studies majors, with the exception of those writing Honors thesis or fulfilling a capstone requirement in a second major. The class is also open, with the permission of the instructor, to other advanced undergraduates with previous course work in religious studies. Credit 3 units.
A&S SD TH

Re St 480. Topics in Buddhist Tradition: Korean Buddhism

This course explores the historical culture of Korea by introducing students to the doctrines, beliefs, and practices of Buddhism in its socio-historical context, from ancient times to the present. We examine the evolving nature of Korean Buddhist culture, which allows us to understand the nature of pre-Buddhist Korean religion, the way Sinitic Buddhist beliefs and cultic practices were introduced and domesticated, transforming ancient Koreans' perception of their country from a borderland on the fringes of civilization to a bona fide Buddha-land. The course focuses on issues of social status and the role of religion in society and politics while examining the Buddhism of the royalty, aristocrats, and intellectuals in ancient and medieval Korea. By studying some of the Korean contributions to the development of Zen Buddhism in East Asia, we examine how the Zen tradition in Korea shares much with traditional East Asian Buddhist thought. In addition we see how the Zen tradition adapted to preserve itself during a long period of Confucian domination and Japanese colonialism. A background in East Asian Studies, Buddhism, or Korea would be helpful but not mandatory. Prerequisite: At least junior standing or permission of the instructor or the Director of Religious Studies. Credit 3 units.

A&S TH **FA** SSP

Re St 481. Dante

Same as Ital 481.
A&S TH **FA** Lit

Re St 481. Reading Seminar in Religion and Chinese Literature

Same as Chinese 481.
A&S TH **FA** Lit

Re St 485. Topics in Jewish, Islamic, and Near Eastern Studies

Same as JNE 485.
A&S TH

Re St 486. Anti-Semitism

Same as History 4942.
A&S TH **FA** SSP

Re St 487. Topics in Jewish, Islamic, and Near Eastern Studies

Same as JNE 487.
A&S TH

Re St 490. Topics in Islamic Thought

Same as IAS 4910.
 Oral reports, idea journal, and major research paper required. Prerequisite: permission of instructor. Credit 3 units.
A&S TH

Re St 490. Topics in Islamic Thought: Proseminar in Methods and Approaches in Islamic Studies

Same as JNE 4901.
A&S TH

Re St 494. Advanced Seminar in History

Re St 498. Independent Work for Senior Honors I

Investigation of a topic, chosen in conjunction with a faculty adviser, on which the student prepares a paper and is examined. Students take Re St 498 in the fall semester and Re St 499 in the spring semester. Prerequisite: Admission to the Honors program, and permission of the program director and the major adviser. Credit 3 units.

Re St 499. Independent Work Senior Honors II

Investigation of a topic, chosen in conjunction with a faculty adviser, on which the student prepares a paper and is examined. Students take Re St 498 in the fall semester and Re St 499 in the spring semester. Prerequisites: admission to the Honors program, and permission of the program director and the major adviser. Credit 3 units.

FA SSP

Re St 499. Advanced Seminar in History: Heresy and War

Same as History 4998.
A&S TH

Re St 500. Independent Work

Prerequisite: Permission of the program director and the major adviser. Credit variable, maximum 6 units.

Re St 508. Introduction to Rabbinic Judaism

Survey of the historical, literary, social, and conceptual development of Rabbinic Judaism from its inception in late antiquity to the early Middle Ages. The goal of the course is to study Rabbinic Judaism as a dynamic phenomenon—as a constantly developing religious system. Among the topics explored are: How did the “rabbis” emerge as a movement after the destruction of the Second Temple, and to what extent can we reconstruct their history? How did Rabbinic Judaism develop in its two centers of origin, Palestine and Babylonia (Iraq), to become the dominant form of Judaism under the rule of Islam? How did Jewish ritual and liturgy develop under Rabbinic influence? How were the rabbis organized and was there diversity within the group? What was the rabbis' view of women, how did they perceive non-Rabbinic Jews and non-Jews? As Rabbinic literature is used as the main source to answer these questions, the course provides an introduction to the Mishnah, the Palestinian and Babylonian Talmuds, and the Midrash-collections—a literature that defines the character of Judaism down to our own times. All texts are read in translation. Credit 3 units.

Romance Languages and Literatures

Chair

Elzbieta Sklodowska
 Randolph Family Professor in Arts & Sciences
 Ph.D., Washington University

Endowed Professor

Mabel Moraña
 William H. Gass Professor in Arts & Sciences

Director of Latin American Studies Program
 International and Area Studies
 Ph.D., University of Minnesota

Professors

John F. Garganigo
 Ph.D., University of Illinois

Stamos Metzidakis
 Ph.D., Columbia University

Joseph Schraibman
 Ph.D., University of Illinois at Urbana–Champaign

Harriet A. Stone
 Ph.D., Brown University

Colette H. Winn
 Ph.D., University of Missouri–Columbia

Associate Professors

Nina Cox Davis
 Ph.D., Johns Hopkins University

Pascal Ifri
 Ph.D., Brown University

Rebecca Messbarger
 Ph.D., University of Chicago

Eloisa Palafox
 Ph.D., Michigan State University

Michael Sherberg
 Ph.D., University of California–Los Angeles

Akiko Tsuchiya
 Ph.D., Cornell University

Assistant Professors

Joe Barcroft
 Ph.D., University of Illinois at Urbana–Champaign

Cindy Brantmeier
 Ph.D., Indiana University–Bloomington

J. Andrew Brown
 Ph.D., University of Virginia

Tili Boon Cuillé
 Ph.D., University of Pennsylvania

Seth Graebner
 Ph.D., Harvard University

Stephanie Kirk
 Ph.D., New York University

Irit Kleiman
 Ph.D., Harvard University

María Fernanda Lander
 Ph.D., Brown University

Tabea Linhard
 Ph.D., Duke University

Ignacio Sánchez-Prado

Ph.D., University of Pittsburgh

Senior Lecturers**Lynne R. Breakstone**

Ph.D., Northwestern University

Emily Guignon

Ph.D., Washington University

Alicia Ramírez

Ph.D., University of Washington

Nancy Kay Schnurr

M.A., Middlebury College

Gail Swick

M.A.T., Washington University

Lecturers**Elizabeth Allen**

Ph.D., Columbia University

Virginia Brax

M.A., Washington University

Amanda Carey

M.A., Arizona State University

Professor Emeritus**Michel Rybalka**

Ph.D., University of California–Los Angeles

Professor Emerita**Elyane Dezon-Jones**

Doctorat de 3e Cycle, University of Paris

Senior Lecturer Emerita**Susan R. Rava**

Ph.D., Washington University

If you are interested in studying and communicating effectively in French, Spanish, or Italian, Romance Languages and Literatures is an excellent major. Elementary Portuguese is available through University College and soon in the regular Arts & Sciences course offerings. You also may choose a double major that includes one of the Romance languages.

In this comprehensive program of study, you are exposed to language study, with particular emphasis on oral skills, literature, criticism, and the culture of the countries and languages you are studying. In introductory courses, through a combination of intensive master classes and practice sessions, you rapidly acquire communication skills. Intermediate courses follow a curriculum developed exclusively at Washington University in which daily classes taught by a team allow you to progress into 300-level courses after only three semesters.

From beginning through advanced courses, you are taught in the foreign language to ensure that you progress in fluency. You may choose from a wide variety of courses in French, Italian, Spanish, and Latin American literature. You also may enroll in survey or special topics courses of an interdisciplinary nature to explore other aspects of Hispanic, French, or Italian culture. Grammar, conversation, linguistics, and other language content courses also are available, as are upper-level courses in ap-

plied linguistics. The department brings distinguished scholars to campus to lecture and teach on a variety of topics, visits that you are encouraged to attend.

With a degree in Romance languages, you may pursue graduate course work or a career in many areas within the public and private sector, including law, medicine, business, education, social work, government service, translating, and interpreting.

The Major: If you are a prospective major, you should consult with the director of undergraduate studies of the language you have chosen as early as possible. You are required to complete a minimum of 27 units in advanced courses, of which 18 units must be taken in residence; 3 units may be taken outside the department with permission of your major adviser. (To complete a double major, you are required to complete 24 units.)

For French, you are required to complete Fr 307D, 308D, 325C, 326C, 411, plus 6 additional units in literature on the 400-level, including a capstone project (undertaken in conjunction with one of the 400-level seminars). Both 400-level courses required for the major must be taken at Washington University. For Italian, you are required to complete Ital 307D, 308D, 323C, 324C, plus 6 additional units in literature on the 400 level, including a major project (undertaken in conjunction with one of the 400-level seminars). For Spanish, you are required to complete Span 307D, 308D, three of the five survey courses (Span 330C, 333C, 334C, 335CQ, and 336CQ), plus 6 additional units in literature on the 400-level. All primary majors must complete a capstone experience by achieving a B+ or better in one of the 400-level seminars.

In the humanities, courses in English and American literature, classics, philosophy, and History 101C-102C are recommended, as well as 6 units from the social sciences, including linguistics. If you plan to teach or pursue graduate study, you should consider taking a second foreign language, as well as linguistics courses. In all departmental courses for the major the student must receive a grade of B– or above. Each student's progress toward achieving the objectives of the major will be assessed on a regular basis and by a variety of means. More information is available in the departmental mission statement.

Study Abroad: You are encouraged to participate in a study-abroad program. Programs are available in France, Italy, Spain, Ecuador, Mexico, and Chile. In addition, you may choose to complete an internship or studies in French business.

Senior Honors: You are encouraged to work toward Latin Honors (cum laude, magna, summa). To qualify for Latin Honors in the major by thesis, you must complete special literary research and prepare and orally defend an Honors thesis, which is judged by an Honors faculty committee. To qualify for Latin Honors by course work, you must complete four literature courses at the 400-level, including two in literature before 1800, and present two critical essays written

for those courses to be judged by an Honors faculty committee. Recommendations for Honors are based on your performance and the quality of the thesis or critical essays, plus your cumulative grade point average.

Spanish Honors in Linguistics

To qualify for Spanish Honors in Linguistics in the major by thesis, you must complete linguistic research and prepare and orally defend an Honors thesis, which is judged by an Honors faculty committee. The honors thesis in linguistics may include scientific experiments conducted in Spanish. The written thesis will include several drafts, all of which will be written in Spanish.

Undergraduate Courses**French****French 1011. Essential French 1 Workshop**

Application of the curriculum presented in French 101D. Pass/Fail only. Grade dependent on attendance and participation. Credit 1 unit.

A&S LA

French 101D. French Level 1: Essential French 1

This first course in the language program uses a team teaching approach to stress rapid acquisition of spoken French, listening comprehension, reading, and writing skills through the use of authentic French materials, computer programs, Internet exploration, and e-mail. Five class hours per week including required subsection. Students are encouraged to register also for French 1011. Credit 5 units.

A&S LA

French 1021. Essential French 2 Workshop

Application of the curriculum presented in French 102D. Pass/Fail only. Grade dependent on attendance and participation. Credit 1 unit.

A&S LA

French 102D. French Level 2: Essential French 2

This second course in the language program uses a team teaching approach to focus on more advanced language skills. We emphasize rapid acquisition of spoken French, listening comprehension, reading, and writing skills through the use of authentic French materials, computer programs, Internet exploration, and e-mail. Five class hours per week including required subsection. Students are encouraged to register also for French 1021. Prerequisite: French 101D or the equivalent (usually recommended as a first college course for students with one to three years high school French [7th and 8th grades count as 1 year]); students with three years high school French should consider taking French 105D in place of French 102D). Credit 5 units.

A&S LA

French 1051. Advanced Elementary French Workshop

Application of the curriculum presented in French 105D. Pass/Fail only. Grade dependent on attendance and participation. Credit 1 unit.

A&S LA

French 1052. Advanced Elementary French Workshop

Working vocabulary for the Institute taught to emphasize real-life situations abroad. Only for students who have completed French 102D and 105D and who plan to attend French Summer Language Institute. Credit/No Credit. Credit 1 unit.

A&S LA

French 105D. Advanced Elementary French*Same as French 105D.*

Intended as a first college course in French with some high school background in the language, this course combines French 101D and French 102D in one semester of study. It affords students the opportunity to review and master basic skills before moving on to the intermediate level (French 201D). Five class hours per week including required subsection. Prerequisite: three to four years high school French [7th and 8th grades count as one year] or permission of the department. Credit 5 units.

A&S LA**French 108. Elementary French Level I**

Beginning language program stressing rapid acquisition of spoken ability with immersion teaching method. Credit 4 units.

A&S LA**French 109. Elementary French Level II**

Continuation of French 108. The 109 French course parallels the methodology of the 108 level, but more sophisticated grammatical skills are covered. The 108-109 sequence covers the major grammatical points of the language. Students who complete French 108 and 109 are eligible to enroll in French 201. Prerequisite: Elementary French Level I or equivalent. Credit 4 units.

A&S LA**French 201D. French Level III: Intermediate French**

An intermediate review course with multiple goals: independent and accurate oral and written communication; comprehension of a variety of French and Francophone materials; review of grammar functions; communicative activities. Prerequisite: French 102D or the equivalent (usually recommended for students with four years of high school French [7th and 8th grades count as 1 year]); students with this high school background who are hesitant about their spoken or written French should consider taking French 105D. Credit 5 units.

A&S LA**French 202. French Level III at the Summer Institute**

This Summer Institute course focuses on the major features of French 201D. Students improve speaking, writing, and reading skills in French by combining study of grammatical forms with exercises designed to mirror many experiences they encounter while in France. The location abroad and contact with French host families and other French people facilitate the student's learning experience. Students enrolled in this course also take French 353 and are prepared to enroll in French 307D upon their return to St. Louis. Open only to students attending the Summer Institute in France. Prerequisite: French 102D or 105D. Credit 3 units.

French 215. Conversation, Culture, Communication 1: Pop Culture

The course examines popular culture through a focus on what is said and performed. The course consists of five thematic units focusing on everyday occurrences and themes that mark both French and Francophone experience: conversation in cafés; poignant views of life expressed by films and images; daily experiences as depicted in poems and songs; the politics of private life; the role of the dinner-table in real life, art, and literature. As students advance through each module, they develop a creative project in which they put into practice (by a skit/presentation/text/artwork) what they have learned. Prerequisite: French 201D or the equivalent. May be taken before or after French 216. Credit 3 units.

A&S LA**French 216. Conversation, Culture, Communication 2: French Culture Through French Film**

This course enables students to pursue their exploration of French culture through French film. Though not a history of French cinema, it introduces some of France's most celebrated actors and directors. We focus on excerpts that illustrate important life themes, including childhood, coming of age, existential crises, the search for happiness, the need for laughter, the threat of crime and violence, the complexities of love, and attitudes toward death. Students are asked to contrast their expectations of how such themes are to be treated with the way in which the French choose to portray them. Students write film reviews as though they were, alternately, an American or a French critic. As a final project they write their own screenplay and imagine how it might be filmed in France. By the end of the course they will have begun to view French culture with a French eye. Prerequisite: French 201D or the equivalent. May be taken before or after French 215. Credit 3 units.

A&S LA**French 218C. The Renaissance: Crisis and New Beginnings***Same as Med-Ren 318C.***A&S TH****French 247. Freshman Seminar**

Taught in English. Small group seminar devoted to readings and study of other texts such as films, paintings, etc., discussion, writing. Topics vary; interdisciplinary focus. Prerequisite: AP in English, French, or History, or permission of the instructor. Does not substitute for any other French course.

Section 01. King Arthur through the Ages. Survey of the Arthurian legend from its origins and elaboration in the medieval literature of France and England to its more recent expressions in modern American literature. We also explore its portrayal in the visual arts and film. All readings available in English.

Section 02. Paris: The Left Bank. From the founding of the Sorbonne in the Middle Ages to the strikes and riots of 1968, from Abelard and St. Thomas Aquinas to Hemingway and Fitzgerald, Camus and Sartre, Beckett and Ionesco, and beyond, the Rive Gauche, or Left Bank, has been the traditional center of Paris's intellectual creativity and political turmoil. The seminar explores the area's history and political activism, its artistic legacy, and especially its philosophical and literary contributions to contemporary France and the world.

Section 03. French in the Tropics. What happens when a language spreads around the world? Does it dry up in the desert sun, or grow luxuriant in the rain forest? What kinds of literature and culture develop in the places to which it spreads? Our study of Francophone Africa and the Caribbean through film and literature allows us to examine these questions. French, originally the language of colonial oppression in these parts of the world, has become the expressive tool for authors and intellectuals developing cultural forms specific to their countries. We read novels by Kourouma, Bâ, and Lopes, and novels, poetry, and plays by Donde, Césaire, and Maximin. Major issues considered include colonialism and its end, cultural imperialism, and race and gender in literature. This seminar is taught in English with texts in translation, and is limited to freshmen. Credit 3 units.

French 250C. Voyages and Discoveries: French Masterpieces

Taught in English. Novels and short stories about voyages and discoveries—real and symbolic—where young people confront themselves and crises in their lives. A discussion course with short writing assignments and viewing of films of sev-

eral works studied. Masterpieces selected from writers such as Voltaire, Balzac, Flaubert, Maupassant, Gide, Colette, Camus, Sartre, Duras, and Ernaux, among others. No French background required; students who have completed the English Composition requirement are welcome. Credit 3 units.

A&S TH FA Lit**French 257. From Champagne to Champlain: French Culture in North America***Same as AMCS 257.*

Taught in English. Following Champlain's founding in 1604 of the first French settlement in Nova Scotia (formerly Acadia), the French began to build what they hoped would be a vast empire, from Quebec to the Gulf of Mexico. Over the next 200 years, French culture and language spread throughout North America and could well have been the dominant one in this country had history moved in different directions. This course examines the history, literature, religion, architecture, music, and cuisine of the vast territory known as "New France." Through use of conventional textual documents, as well as films, slides, CDs, and field trips to Missouri historical sites, it exposes the student to the continuing richness of French culture all around us. Drawing on local resources (e.g., Fort de Chartres, Cahokia Courthouse, and Sainte Genevieve), students learn about many fundamental connections between America and France. Topics include early explorations, Jesuit missions, literary representations of the New World, colonial architecture, the French and Indian War, the Louisiana Purchase, Cajun and Mississippian culture. Credit 3 units.

A&S TH FA SSP**French 298. An Internship for Liberal Arts Students***Same as GeSt 299I.*

French 299. Undergraduate Independent Study
Prerequisite: French 201D and permission of the director of undergraduate study. Credit variable, maximum 3 units.

French 2ABR. French Coursework Completed Abroad

Credit variable, maximum 12 units.

French 301. French in France

Intended for students studying abroad on a Washington University program or a Washington University-approved program abroad, this course stresses fluency in daily transactions as these require primarily, but not exclusively, proficiency in spoken French. Credit 3 units.

A&S LA**French 301I. Applied Language Skills**

Intended for students studying on a Washington University program or a Washington University-approved program abroad, this course follows French 301 and further develops communication skills in French. Credit 2 units.

A&S LA**French 3012. Internship Practicum**

Intended for students studying on a Washington University Program or a Washington University-approved program abroad, this course combines internship experience with research and a rapport de stage (final report). Credit 3 units.

A&S LA**French 3013. European Economic Issues**

Intended for students studying on a Washington University program or a Washington University-approved program abroad, this course examines a variety of topics concerning France's role in the EEC, including, but not restricted to: fiscal policy, major economic models, exchange market structure, international monetary system, debt policy, etc. Credit variable, maximum 3 units.

A&S SS FA SSP

French 3014. European Social Issues

Intended for students studying on a Washington University program or a Washington University-approved program abroad, this course examines many aspects of France's role within Europe, including, but not restricted to its history, government, social welfare programs, the role of religion in society. Credit 2 units.

A&S SS FA SSP

French 3071. Advanced French Workshop

Same as French 3071.

Application of the curriculum presented in French 307D. Students work in creative settings to put into practice the material taught in the master class. Must be enrolled concurrently in French 307D. Credit 1 unit.

A&S LA

French 307D. French Level IV: Advanced French

Thorough review of French grammar with intensive practice in writing. Conversation and vocabulary, as well as application of French grammatical structures, are based on reading of French texts. Essential for further study of French language and literature. Students in all sections are encouraged (but not required) to enroll simultaneously in French 3071, an activity-based companion course. Prerequisite: French 201D or the equivalent (recommended for students with five years of high school French [7th and 8th grades count as one year]). Credit 3 units.

A&S LA

French 3081. French Institute Workshop

A companion course to French 308D when taught at the French Summer Institute, the workshop develops fluency in French through individual and group projects that highlight different aspects of the experience of living abroad: language, culture, history, sociology, politics. Credit 2 units.

A&S LA

French 308D. French Level 5: French Through Literary Texts

Continuation of French 307D with emphasis on improvement of writing skills through analysis of literary texts and creative writing. Should be taken before French 325C or 326C. Prerequisite: French 307D or equivalent. Credit 3 units.

A&S LA FA Lit

French 310. Practical and Commercial French

Students develop their reading and writing proficiency and aural-oral communication in areas such as banking, retailing, and advertising. Extensive use of the Internet keeps students up-to-date about European and international issues in the world of business and economics. May replace French 308D for students who attend the IEB/Paris program. Prerequisite: French 307D. Required for participation in the Internship in European Business Program. Credit 3 units.

A&S LA

French 311C. French Culture and Civilization: The New Face of France

We study the life and culture of France with the aim of improving written and spoken French. Special emphasis is placed on the changes that are slowly but radically transforming French society: the increasing influence of the European Community; the influx of immigrants from Africa and other parts of the world; the growing role of "Arabs" and other French citizens born of foreign parents; the increasingly dominant position of women; the globalization of French culture; technological progress, etc. Lectures, discussions, TV newscasts, Web sites, and oral reports. Prerequisite: French 201D, or placement by examination. Credit 3 units.

A&S TH FA SSP

French 3151. Elements of European Culture and Politics

Credit variable, maximum 4 units.

A&S TH FA SSP

French 318D. Preparation for Year in France

Designed to prepare students for the experience of studying abroad (for either a year or a semester, on Washington University-sponsored or approved programs), this course emphasizes improved oral discussion and writing skills through readings, papers, practice in language lab, and active class participation. The course provides an introduction to the techniques of explication de texte, commentaire composé, and dissertation littéraire. The class discusses various aspects of modern French society as well as topics related to the student's experience abroad, such as the university system, the French family, French social mores, etc. May replace French 308D for candidates attending semester and year-abroad programs in a French-speaking country. Open to students planning to study in Toulouse and others on a space-available basis with permission of the instructor. Credit 3 units.

A&S LA

French 3191. Advanced Conversation, Culture, Communication

For students attending the France Pre-Med Program, this course stresses oral mastery of the language through active discussion in class and with local residents. Credit 1 unit.

A&S LA

French 3201. Historical and Comparative Linguistics**French 321. Topics I**

Focusing on topics of cultural and social importance, this course offers students the opportunity to learn about defining moments in the French tradition. The specific topic of the course varies from semester to semester and may include works from different disciplines, such as art, film, gender studies, history, literature, music, philosophy, politics, science. Prerequisite: French 307D.

Section 01: Les Françaises, 1789-2000. Using an interactive approach and authentic documents, the course explores the evolution of the place of women within the structures of French society from the Revolution through the present. We focus on the opposition between private and public discourse, the question of identity, and specific political issues viewed in a socio-cultural context.

Section 02: French Interiors—Family Dramas.

In the intimate space of the French home we witness numerous family dramas unfold. Using artworks by La Tour, Vermeer, Degas, Manet, Monet, Vuillard, and others, we study how artists and writers use interior space to create intimacy, a closed world of heightened family tension. Reading scenes from medieval fabliaux, Molière's *Ecole des Femmes*, Sand's *Indiana*, Proust's *Combray*, Flaubert's *Un Coeur Simple*, and Sarraute's *Enfance*, we examine the interactions between parents and children as they reflect the themes of love and death, separation and dependency, desire and repression, fantasy and obsession. Art is also used as settings for creative writing. Students invent family tales that take their inspiration from the literature read in class and that are informed through independent research on architecture, interior design, and/or portraiture. A final section of the course is devoted to the interior dramas of films by celebrated directors Truffaut and Malle.

Section 03: Performing Arts; Performing Gender.

We explore what transpires between the audience and the stage, between the camera and the set. Whether a pretext for art or seduction, the stage enables us to admit what we are or to be what we are not. Society's constraints are discarded in the theater, where performers give free rein to their actions and the audience to its imagi-

nation. Emotion is conveyed, desire projected, and identities are mistaken. French literature often features moments in which men impersonate women, women men, and castrati both. The distinction between gender and sexuality becomes the wild card in the theatrical space, one that thwarts expectations, reroutes desire, and falsifies emotion, revealing the difference between appearance and reality. We read scenes from authors such as Cazinot, Beaumarchais, Staël, Sand, Balzac, Flaubert, Huysmans, Zola, and Leiris. We view excerpts from opera and film and draw upon theories that help us to analyze how authors play upon the sensibilities of their readers, imperceptibly involving us in the game of deception.

Section 04: France Viewed Through its Cinema.

This course explores the history and culture of France as depicted by some of the 20th century's most celebrated directors. We focus on topics such as World War I (Gance, Renoir); the rise (and fall) of the bourgeoisie (Lumière, Renoir, Tati); the importance of dreams (Méliès, Bunuel, Carné, Cocteau); the role of women (Pagnol, Godard, Varda); trauma and memory (Duras, Resnais); childhood (Truffaut, Malle). We also compare views of Paris (Clair, Truffaut, Godard) and views of the countryside (Renoir, Pagnol, Malle, Varda). Credit 3 units.

A&S LA

French 322. Topics II

Focusing on topics of cultural and social importance, this course offers students the opportunity to learn about defining moments in the French tradition. The specific topic of the course varies from semester to semester and may include works from different disciplines, such as art, film, gender studies, history, literature, music, philosophy, politics, science. Prerequisite: French 307D.

Section 01. France Viewed Through its Cinema.

This course explores the history and culture of France as depicted by some of the 20th century's most celebrated directors. We focus on topics such as World War I (Gance, Renoir); the rise (and fall) of the bourgeoisie (Lumière, Renoir, Tati); the importance of dreams (Méliès, Bunuel, Carné, Cocteau); the role of women (Pagnol, Godard, Varda); trauma and memory (Duras, Resnais); childhood (Truffaut, Malle). We also compare views of Paris (Clair, Truffaut, Godard) and views of the countryside (Renoir, Pagnol, Malle, Varda).

Section 02. Diversity. We examine the notion of diversity as it expresses itself in French culture in different media. Studying religious, social, sexual, and ethnic difference, we examine how the French have embraced or rejected the idea of France as a "diverse" and "integrated" nation. We examine extracts from a range of French texts by authors who question the idea of difference and the notion of self-identity. We read extracts from Francophone authors, writers who live in and write about former French colonies. Among the authors included: Diderot, Voltaire, Zola, Camus, Ernaux, Kristeva, Cardinal, Condé, Sow Fall. We also look at films, paintings, and journalistic accounts that allow us to consider issues such as changing social values, acts of inclusion and exclusion into the social fabric, and examples of backlash to efforts to promote integration and inclusion.

Section 03. Provence. Provence enjoys a distinctive identity in France. Known for not only for its cuisine and its fields of lavender, Provence represents a particular set of behaviors that are marked by an outward sociability, on the one hand, and deep intimacy, on the other. The people from this Mediterranean region are proud of their identity, particularly in opposition to Paris, which stands at the center of French culture, business, and power. Many celebrated artists (Cézanne, Van Gogh) and writers (Daudet, Pagnol, Giono, Char) used the backdrop of Provence in their works, partaking of Provence's natural beauty and local color.

Through an examination of a variety of texts, im-

ages, films, music, and other sources, we attempt to define the life of Provence, paying particular attention to its distinctive features; the opposition Paris/Provence; how Provence's geographical advantages contribute to its rich culture; how various artists, authors, film makers, and musicians celebrate its culture and its people.

Section 04. 20th-Century France in Literature and on Film. Starting with the Belle Époque—the first years of the 20th century, considered to be a “beautiful age” when life was pleasant and easy—and ending with the year 2000, we examine the evolution of modern French society as reflected in celebrated examples of literature and cinema. We emphasize key historical events of this period and show how France has changed from a primarily rural, religious, and homogeneous society to the urban, industrialized, and multiracial culture of today. We deal mainly with both world wars, colonialism, industrialization, immigration, and the changing role of women. We divide the century into segments, each of which are represented by a literary work and/or a film. Credit 3 units.

A&S LA

French 3231. Topics in Theater: Liberty, Equality, Theatricality—Contemporary French Plays

Same as Drama 3212.

A&S TH

French 325. French Literature I: Dramatic Voices: Poets and Playwrights

An interpretation of cultural, philosophical, and aesthetic issues as presented in influential works of French poetry and drama from the Middle Ages to the present. May be taken before or after French 326. Prerequisite: French 308D or French 318D.

Section 01. Self and Society. A study of the themes of self and society as seen in the dramas of Molière, Corneille, Racine, Beaumarchais, Musset, and Beckett, and in the poetry from Villon to Prévert. We examine the struggle of self versus society in various contexts, particularly love, family, politics, and fate, and will study how the individual affirms and defines himself/herself, or fails to do so, in that struggle.

Section 02. Voices. Poets from Villon and Ronsard to Lamartine and Rimbaud have used their voices to express lyrical themes, like love, death, the passage of time, beauty, and good and evil in important personal ways. Their voices are meant to speak to us as individuals, to comfort us or, on the contrary, to unsettle us. They even sometimes encourage us to act, to change something about our lives or our society. Playwrights, too, have used their characters' voices to stir up cultural revolution of their own sorts (Romantic with Hugo's *Hernani*; Symbolist/Surrealist with Jarry's *Ubu Roi*). This course examines how and why these and other writers (Louise Labé, Baudelaire, Apollinaire, Corneille, Racine, Molière) chose to put their voices into writing, what they tried to say, and for what audience they wanted to say it. We examine how their voices speak to social, political, and more generally, cultural questions regarding the time period in which they wrote.

Section 03. Living Matter(s). Renowned poems and plays of the French tradition explore love, moral claims, suffering, mortal sins, cultural awakenings: the matter of life that is also often a matter of death, a matter that authors transform and celebrate. We study these issues by focusing on the link between literature, history, and art in works by Ronsard, Hugo, Baudelaire, Rimbaud, Ponge, Corneille, Molière, Racine, Beaumarchais, Ionesco, among others. Credit 3 units.

A&S TH

French 3251. French Film Culture

Same as Film 325.

A&S TH

French 3252. French Out of France: Introduction to Francophone Literatures

An introduction to some of the “other” literatures in French: the literary traditions and cultural contexts of Francophone countries in North and sub-Saharan Africa and the Caribbean. Vibrant and productive cultures around the world have interacted with the French language and its literature to produce highly diverse texts of their own. We study some of them, focusing on issues like cultural adaptation, colonialism, and “civilizing missions,” and the responses to them. We also consider the varying meanings of the term “Francophone,” from conservative to liberal, and think about its implications for the study of French literature as a whole. Finally, we examine the ways in which contemporary mainland France has been irrevocably transformed by the Francophone presence. Works by Kourouma, Césaire, Kateb, and Lopes. Prerequisite: French 307D. Credit 3 units.

A&S TH

French 326. French Literature II: Narrative Voices: Fiction and Nonfiction

An investigation of cultural, philosophical, and aesthetic issues as presented in influential works of French prose from the Middle Ages to the present. May be taken before or after French 325. Prerequisite: French 308D or French 318D.

Section 01. The Detail. We examine characters against a background of things discovered and inherited, bought and exchanged, adored and mourned. In their depictions of characters' struggles, authors present an array of objects whose details capture our imagination through suggestions of magical powers, prosperity, love, and loss: jewelry, clothing, portraits, furnishings. The detail suggests a world of abundance: the accumulation of goods within an expanding economy; the excesses of an ornamental and decadent lifestyle; the proliferation of memories and nostalgic longings. Whatever the material conditions it relates, the detail remains fundamentally an aesthetic form, often coded as feminine. We study how the authors' descriptions allow them to color the world much like a painter: one stroke, one detail at a time. Authors to include Chrétien de Troyes, Montaigne, Lafayette, Prévost, Balzac, Proust, Gide.

Section 03. The Writer and His/Her Public.

Why and for whom does one write? How does the public influence what one writes and the way one writes? This course examines the interaction between the writer and his/her public (the constraints imposed by this interaction but also the creativity that it generates) as well as the different types of relations that develop across the centuries as books become increasingly available and the number of readers significantly increases. Among the topics to be discussed: courtship and patronage; engagement and censorship; subversive libertinage; political tolerance and personal liberties; use of fiction and certain literary forms such as the *essai*, *recit de voyage*, *conte*, etc.; use of irony, humor, and various narrative strategies, including indirection, dissimulation, and seduction. Readings include Chrétien de Troyes, Michel de Montaigne, Cyrano de Bergerac, Voltaire, Emile Zola, Albert Camus, Simone de Beauvoir, and Assia Djébar.

Section 04. Prosaic Greatness. The title of this course emphasizes both the artistic value of certain major prose texts in French and the everyday facets of knowledge about French culture they convey. From the Middle Ages to the present, influential writers like Montaigne, Pascal, Sand, Flaubert, and Gide have demonstrated how important political, philosophic, literary, and artistic concepts have been skillfully passed down from one generation to another through a masterful usage of French prose. By looking closely at the aesthetic and social questions raised by works such as theirs, so characteristic of their times, stu-

dents come to appreciate better the evolution of French prose and its true place within the general history of France. Credit 3 units.

A&S TH

French 327C. French Literature III

This general literature survey course is taught every year in the Dickinson College program in Toulouse, France, with which Washington University is affiliated. The course studies works of literature that span several centuries and genres and considers issues such as the identity of the individual in society; the alienation and marginalization of certain groups within society; cultural identity; the historic context for literary works, etc. Open only to Washington University students enrolled in the Toulouse, France, program with Dickinson College. Credit 3 units.

A&S TH FA Lit

French 328C. French Literature IV

A companion course to French 327C, this general literature survey course is taught every year in the Dickinson College program in Toulouse, France, with which Washington University is affiliated. The course studies works of literature that span several centuries and genres, and considers issues such as the identity of the individual in society; the alienation and marginalization of certain groups within society; cultural identity; the historic context for literary works, etc. Open only to Washington University students enrolled in the Toulouse, France program with Dickinson College. Credit 3 units.

A&S TH FA Lit

French 3341. Points of View, Visions, and Revisions: History of French Cinema

Taught in English. We examine the distinguished history of French cinema from its origins though some of its more exciting recent trends. The class has as a dual focus the development of cinematic technique and the question of social import. Among the celebrated film auteurs we study are Gance, Renoir, Truffaut, Godard, Varda, and Zonca. There is an optional extra session for group film viewing, and films are also on reserve. Students are responsible for small group presentations, reaction papers on the films, participation, and a final project. Credit 3 units.

A&S TH FA AH

French 340. Nature, Culture, and Society

Same as Pol Sci 340.

A&S SS FA SSP

French 341. Field Study in France: Internship
Credit 6 units.

French 350. Undergraduate Seminar in French Literature and Culture

An exploration of a variety of cultural icons, objects, myths, and traditions that define the French experience throughout the centuries. Topics vary. Prerequisite: French 308.

Section 01. Literature, Art, and History of the French Middle Ages.

In France the Middle Ages is a period of intense artistic and literary creation despite an often brutal history. Feudal struggles, the Hundred Years' War, the Crusades, frequent epidemics, and famines add a tragic cast to daily life. Yet this period witnesses the birth of literature written in French (*chansons de geste*, courtly romances and poetry, theater), a tradition rich with knights and damsels in distress, stories of love and conquest. Cities are built, as are castles and cathedrals. Botanical gardens are planted. Elaborate wall tapestries and paintings begin to decorate the homes of lords and churches. France discovers the art of the book in the form of illuminated manuscripts. Men and women develop a taste for clothing and jewelry. The course explores this fascinating history by examining celebrated examples of the period's literature and art. It includes a visit to the medieval collection of the Saint Louis Art Mu-

seum and the film *Visiteurs du Soir*. Credit 3 units.
A&S TH FA Lit

French 352. French Institute Project

Students investigate an important aspect of French life by conducting interviews with French natives and by observing them at work. Supplementing this direct experience with further research, students prepare a presentation on their selected topic for the Institute participants and for their French hosts. Open only to students enrolled in the French Summer Institute. Credit 2 units.

A&S LA

French 353. Project Plus

This Summer Institute course combines 1) a course that examines French culture as it is represented in the evocative history of French châteaux, the arts, and contemporary lifestyle; 2) the student's project; and 3) the student's experiences as part of the community abroad (excursions, visits, group discussions). In class students gain background for appreciating the primary sites of the Institute: in the Loire Valley, Paris, and Brittany. The classroom experience is discussion-oriented, with small writing assignments and readings. The project is an individual research program that students conduct with a French native on a particular aspect of French culture. In the past students have dealt with serious topics such as the deportation of the Jewish community in Amboise during World War II; with less grave subjects such as the work of a local wine grower or goat cheese producer, and the culinary repertoire of French and American families; and current topics concerning the political situation in Europe and the euro. Following weekly conferences with the teaching staff, students present a formal report on their experiences to an audience comprised of other members of the group and the students' host families. Students at the Institute are expected to speak French in all group settings. Assignments in this course level-appropriate (students enrolled in French 385 complete longer papers and projects than those enrolled in French 202; expectations for conversations are likewise adjusted accordingly). Required of all students attending the Summer Institute in France. Credit 3 units.

French 354. Soutenance de Stage: Internship Defense

Credit 3 units.

French 355. North American Francophone Literature in Translation

Taught in English. The world of French language and literature is not restricted to France alone. It includes several other countries and former colonies whose cultural traditions and productions have grown in global significance as the West has increasingly understood and reacted to its own prejudices and exclusions. This course, the first in a three-semester sequence, focuses in on the literature of our closest French-speaking neighbors: French Canadians, Acadians (from Nova Scotia, New Brunswick and northern Maine), and Louisiana Cajuns. That French is the main language of all these groups results, of course, from the early colonial history of North America. Representative writers of these different French-speaking groups, including Antonine Maillet, Gerald Leblanc, Zachary Richard, Philippe Hemon, Michel Tremblay, and Marie-Clair Blais, are studied closely in their historical, literary, and cultural contexts. Credit 3 units.

A&S TH

French 370. French Social History

Studying *L'histoire des Mentalités*, this course explores how the concept of sickness, the perception of medicine, the role of the doctor, etc. evolved throughout the centuries. Texts are supplemented by a series of lectures offered by doctors in differ-

ent specialties. Students complete a project on one area of related research. Open only to students enrolled in the Nice Pre-Med Summer Program. Credit 3 units.

A&S TH FA SSP

French 375C. Biography of a City: Paris

This class has a dual focus: to trace the political and cultural history of Paris throughout the ages since its founding; to highlight Paris as a theme or topos in works of art and in the popular imagination. Thus, we examine both Paris's role as an important historical center as well as its function as a vital cultural symbol. Guest speakers from the departments of Romance Languages, Art History, History, Music, Philosophy, and others. Course taught entirely in English. Same as Art-Arch 376 and Comp. Lit. Credit 3 units.

A&S TH FA Lit

French 376C. Points of View, Visions, and Revisions: History of French Cinema

An overview of French cinema from Renoir to Rohmer to Rochant. Some film theory is taught in this primarily viewing- and discussion-based class. The focus of this course is the ways in which the director's lens functions as a critical eye on the culture. Taught in English, but some knowledge of French is highly recommended. Films are shown during the required subsection. Credit 3 units.

A&S LA FA AH

French 381. The Middle Ages

Same as *E Lit 315*.

A&S TH FA Lit

French 383C. Literature and Society: Ailing Body/Ailing Mind in French Autobiographical Writings

Illness and suffering have inspired a great variety of literary texts from the Middle Ages to the modern era. This course considers works ranging from Montaigne's influential *Essais* through contemporary novels that focus on autobiographical writings in which the author gives a personal account of his or her own direct experience with illness. Open only to students enrolled in the Nice Pre-Med program. Credit 3 units.

FA Lit

French 385. Cultural Differences

Same as *IAS 385*.

By examining how the French perceive Americans and how the Americans perceive the French, students interrogate stereotypes, biases, and differences in values, behaviors, and beliefs between the two cultures. The class also examines the misunderstandings that occur as a result of these differences. Students also look within the American culture and within the French culture to evaluate how minorities and marginal groups exist within them. Texts include works by contemporary authors whose different professions (journalist, anthropologist, novelist, etc.) offer different perspectives on the questions of cultural difference. Open only to students enrolled in the Summer Institute in France. Prerequisite: French 307D. Credit 3 units.

A&S TH FA SSP

French 399. Independent Study

Prerequisite: permission of the director of undergraduate study and the instructor, French 325C, 326C or equivalent, and competence in oral and written French. Students may not receive more than six units of credit for independent study. Credit variable, maximum 3 units a semester.

French 400. Intensive Translation for Graduate Students I

The first part of a two-semester course sequence in reading and translating French. For graduate students in the humanities, social and natural sci-

ences. Nongraduate students may enroll with permission of the department. Must be followed by French 401. Credit 3 units.

A&S LA

French 401. Intensive Translation for Graduate Students II

Continuation of French 400. For graduate students in the humanities, social and natural sciences. Prerequisite: French 400; credit for French 400 is contingent on completion of French 401. Credit 3 units.

A&S LA

French 4021. Introduction to Teaching Romance Languages

Same as *Span 402*.

A&S LA

French 405W. Major Seminar

Seminar for French majors. Topics vary. May be repeated for credit. Prerequisite: French 325 and 326 (or, for students who have completed the Paris Business Program, completion of either course).

Section 01. French Cinema. A thematic and structural approach to the evolution of French cinema through the works of Clair, Renoir, Carne, Godard, Truffaut, Rohmer, Robbe-Grillet, Beineix, and others. Weekly screenings, analysis, and discussion of a feature film. Attendance at two film showings a week is required.

Section 02. French Women Writers. A close reading of texts by well-known and lesser-known French women writers with an emphasis on "la querelle des femmes" yesterday and now. Writers include Christine de Pisan, Helisenne de Crenne, Marie de Gournay, Mme du Boccage, la comtesse de Ségur, Flora Tristan, as well as Nathalie Sarraute, Simone de Beauvoir, Marguerite Duras, and Hélène Cixous.

Section 03. French Literature from Flaubert to the Present. Study of major novelists from Flaubert to Robbe-Grillet.

Section 04. Rabelais, Marguerite de Navarre, Montaigne. Exploration of the varieties of prose forms in the 16th century, with special emphasis on representative texts of the period.

Section 05. Le Nouveau Miroir des Femmes. A comparative study of early works and later novels by 20th-century French women writers, with an emphasis on the re-writing of the self. A close reading of Marguerite Duras, *Barrage Contre Le Pacifique* and *L'Amant*; Marguerite Yourcenar, *Alexis and Memoires d'Hadrien*; Natalie Sarraute, *Tropismes and Enfance*; Françoise Erga, *Le Temps des Madras*.

Section 06. King Arthur at the Movies. Students read major Arthurian texts from the French Middle Ages (Chrétien de Troyes, Tristan texts, selections from the Lancelot-Grail cycle) and then evaluate the modern conception and presentation of Arthurian subjects in film. Films include Bresson's *Lancelot du Lac*, Rohmer's *Perceval*, Boorman's *Excalibur*, Cocteau's *L'external Retour*, and *Monty Python and the Holy Grail*, and excerpts of a number of other films. Literary texts read in modern French translation.

Section 07. The Court of Louis XIV. Captured in the imposing magnificence of the palace of Versailles, the court of Louis XIV represents the apogee of monarchic rule in France. We study how the influence of this court was expressed not only in monuments such as Versailles, but in the court history as reflected in the king's own writings, as well as in the literature (Molière, Racine, Lafayette), art (Poussin), music (Lully), and philosophy (Descartes, Pascal) of this period.

Section 08. Andre Breton and the Surrealist Movement. Students examine closely the poetry and prose of the founder of the Surrealist movement. Readings include his *Manifestes*, automatic writings, and prose trilogy (*Nadja*, *L'amour Fou*,

Les Vases Communicants). The surrealist legacy in modern French literature and criticism is also highlighted.

Section 09. Aspects of Contemporary French and Francophone Literature. This contemporary French literature course deals with existentialism, the nouveau roman, negritude, feminism, and the postmodern, studying short works of Sartre, Vian, Robbe-Grillet, Duras, Césaire, Perec, Ernaux, and Toussaint.

Section 10. The Education of Women in Old Regime France. An examination of the condition of women in Old Regime France in light of educational theories by major writers of the period: Christine de Pizan, Erasme, Montaigne, Marie de Gournay, Molière, Poullain de La Barre, Rousseau, Fenelon, Mme de Lambert. Credit 3 units.

A&S TH WI

French 411. Intensive Writing in French

Same as Ling 4111.

Refinement and expansion of writing skills, mastering of complex grammatical structures, and intensive training in the analysis of rhetorical issues are the goals of this course. It focuses on the acquisition of a personal style through creative exercises in composition, including the study of parody, autobiographical forms, and short story writing, as well as the practice of formal explication de texte and dissertation. Students complete a series of short papers, each with required revisions. Meets WI requirement. Prerequisite: French 307D, French 308D or equivalent, or permission of instructor. Required for all majors except those who have spent two consecutive semesters in a French-speaking country. Required for master's candidates in French unless waived by director of graduate studies. Credit 3 units.

A&S LA WI

French 413. French Phonetics

Phonetic theory with exercises in phonetic script, intonation, and practice in oral reading, discussions, and practice in language laboratory. For prospective teachers and candidates for advanced degrees. Conducted in French. Prerequisite: 6 units of 300-level French, or permission of instructor. Either this course or French 411 (taught in the fall) is required for French majors except for participants in the overseas study program. Credit 3 units.

A&S LA

French 415. The 19th-Century Novel: From Realism to Naturalism to Huysmans

In this seminar we read some of the great realist novels of the 19th century, by the four masters of the genre: Balzac, Stendhal, Flaubert, Zola. We also examine Huysmans's *A Rebours*, which was written in reaction to the excesses of Realism. We determine what characterizes the realist novel and how it has evolved from Balzac to Zola. We consider its theoretical orientation, but we also focus on the major themes it addresses: the organization of French society throughout the 19th century, Paris vs. the province, love, money, ambition, dreams, material success, decadence, etc. Prerequisite: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 416. Renaissance Poetics

An examination of key authors and themes in various genres of the period. Prerequisite: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial for undergraduates. Credit 3 units.

A&S TH FA Lit

French 4161. Special Topics in 19th-Century Literature

Prerequisite: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 417. Poetry and Prose of the Renaissance

Same as Med-Ren 417.

During the Renaissance, poetry in France manifested a close relationship to the visual arts, sharing expressive means as well as ends. This course considers the main poetic and philosophical currents of the Renaissance with special emphasis on formal innovation. Poets studied include Clément Marot, Louise Labé, Maurice Scève, Pierre de Ronsard, Joachim Du Bellay, etc. The visual arts, mainly paintings from the 15th to the early 17th century, will serve to elucidate poetic images, mythological references, and philosophical concepts, and hopefully stimulate reflection on the relationship between the verbal and the visual. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 4171. Travel Abroad in Early Modern Times

This course addresses such questions as national identity; international relations; migration, cultural differences, and integration; cultural interactions and influences. It concerns more specifically the important role humanism played in the spectacular development of vernacular languages and traveling abroad in Early Modern times. It is organized around the following themes: 1. Humanism, nationalism, and the growing interest in the vernacular; 2. Humanism and the ongoing project of translation (*translatio studii*); 3. Humanism and Travel Abroad; 4. Views on foreign cultures and one's own after returning home; 5. "La France Italienne" (including at least one session on Lyons and another on Italian artists living in France); and 6. Integration and Conflicts. Readings include major authors (Rabelais, Montaigne, Marguerite de Navarre, Du Bellay) as well as lesser-known figures (Pasquier, Lery, Thetvet), diaries and travelogues. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial for undergraduates. Credit 3 units.

A&S TH FA SSP

French 4181. Humanism in Crisis: Marguerite de Navarre

The second half of the French 16th century was a time of profound upheaval in politics and religion, as well as of economic and social unrest. The very nature of reason and knowledge, their place and reliability were in serious question. These various "crises" culminated in what is known today as "the collapse of French Humanism." This course focuses on two writers of the mid-century, Marguerite de Navarre and Montaigne, and the solutions that they offered. Special attention is given to the forms of expression adopted by these writers in order to reflect the newly discovered complexity of their world. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 4182. Humanism in Early Modern France: From Rabelais to Montaigne

This course focuses on major aspects of Humanism as exemplified by two of the greatest writers of the 16th century: François Rabelais and Michel de Montaigne. Humanism designates the great intellectual movement of the Renaissance. Initially focused on the recovery of ancient authors and a renewed confidence in man's ability to grasp higher meanings, Humanism became a dynamic cultural program that influenced every aspect of 16th-century intellectual life. As the political and religious turmoil of the Reformation spread, however, Humanist assumptions (the very nature of reason and knowledge, their place and reliability) were in turn questioned. This "crisis" culminated in what is known today as "the collapse of French Humanism." We examine the importance of Humanism by focusing on the themes of education, self-inquiry, religion, gender roles, marriage, travel, health, and medicine. We pay special attention to the forms of expression that Rabelais and Montaigne adopt to reflect the newly discovered complexity of their world. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH

French 419. Feminist Literary Criticism

Same as WGS 419.

A&S TH

French 4191. The French Islands: From Code Noir to Condé

This course studies a sampling of poetry, drama, and prose from Guadeloupe, Martinique, Haiti, and Réunion. Our readings concentrate on the ways in which this literature has fostered inter-island cultural relations in and against its links with mainland France. Principal authors include Aimé Césaire, Suzanne Césaire, Patrick Chamoiseau, Daniel Maximin, Simone Schwartz-Bart, and Maryse Condé. We also consider a variety of other works that helped form the relationship between the islands and France; the Code Noir, Bernardin de Saint Pierre, Victor Segalen, and Frantz Fanon. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial for required for undergraduates. Credit 3 units.

A&S TH

French 4192. Tragedy and Farce in African Francophone Literature

Same as IAS 4192.

This course explores the literary construction of nationalist opposition in colonial Africa, and the subsequent disillusionment with its artificiality in tragic or farcical literature from 1960 to 1985. In 1960, most of the French colonies in Africa gained independence in a largely peaceful transfer of power. Since then, this development has been viewed alternately as the triumph of self-determination, and as a hollow act undermined by neo-colonial French ministries, multinational companies, and corrupt governments. Reading authors such as Fall, Sembene, Beti, Tansi, and Lopes, we consider the ways that literature entered into dialogue with political discourses that only farce or tragedy could portray. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial for undergraduates. Credit 3 units.

A&S TH FA Lit

French 420. 20th-Century Literature II

Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse

or Paris. One-hour preceptorial for undergraduates. Credit 3 units.

French 4201. The Novel in the Feminine (Le Roman au féminin)

Same as WGS 4201.

Informed through feminist criticism (Beauvoir, Cixous, Kristeva), this course examines the deconstruction of the novel as a traditional genre by 20th-century women writers such as Colette, Nathalie Sarraute, Marguerite Duras, Marguerite Yourcenar, Annie Ernaux, and Mariama Bâ. We place special emphasis on the representation of the writing woman in the text itself and on the issue of "écriture féminine" in its socio-cultural context. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial for undergraduates. Credit 3 units.

A&S TH FA Lit

French 4202. Ingenues and Libertines: Writing the Feminine in 19th-Century French Prose

Informed by a close reading of theoretical texts dealing with the paradoxes of "la femme auteur" (the woman author), as Balzac coined it, this seminar explores the many ways of writing the feminine in the margins of 19th-century French fiction. Opposing *dames de cour* (ladies of the court) and *femmes de tête* (women of the mind), we focus on the representation of women as *voleuses de langue* (tongue snatchers) in the works of Mme de Staël, Claire de Duras, George Sand, and Marie d'Agoult, among others. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial for undergraduates. Credit 3 units.

A&S TH FA Lit

French 421. The 20th-Century Novel

In this seminar we examine the evolution of the French novel in the 20th century. We closely read five great novels, by Proust, Gide, Céline, Robbe-Grillet, and Ernaux. We determine what characterizes the 20th-century French novel and how it has evolved from Proust to Ernaux. We consider its technical aspects but also focus on the major themes it addresses: love, art, memory, time, death, and the general problem of the human condition. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 4211. The Novel of the 1930s: The Human Condition and the Meaning of Life

Most French novelists of the 1930s were no longer satisfied simply to entertain their readers, to bring formal innovations to their writing, to depict society, or to represent human consciousness. Technological advances, economic transformations, and, above all, the unspeakable horrors of World War I challenged traditional beliefs. Authors therefore dedicated themselves to examining the human condition and the meaning of life. In this seminar we read five major novels of the period by Saint-Exupéry, Mauriac, Malraux, Céline, and Sartre. We determine how each author approaches the fundamental questions of human existence and what, if any, answers he provides. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 422. French Theater from 1800 to the Present

We study selected plays of Hugo, Musset, Feydeau, Jarry, Claudel, Giraudoux, Anouilh, with

particular attention to Romanticism, Symbolism, Existentialism, and Absurdist drama. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA AH Lit

French 4221. 19th- and 20th-Century French Novel

Same as WGS 4221.

Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 423. Contemporary Theater

Readings, analysis, and discussion of French theatre from Sartre to the present. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA AH Lit

French 4231. Visualizing 19th-Century Poetry

Same as French 4231.

At the very end of the 19th century and the beginning of the 20th, Mallarmé and Apollinaire begin to compose seemingly original works that create a host of simultaneous and different meanings through a heightened use of what can be called the concrete aspects of the texts themselves: their layout on the page; the imagery they present; even the shape of the particular words and stanzas they employ. But a close reading of earlier 19th-century literature (mostly poetry) composed by various Romantic, Parnassian, and Symbolist authors (Victor Hugo, Théophile Gautier, Mari Krysinska, Marceline Desbordes-Valmore, Charles Baudelaire, Arthur Rimbaud, and Paul Verlaine) reveals that experimentation in the visualization (as opposed to mere reading or writing) of a literary work was already under way. The latter coincided with the evolution of sculpture, photography, and, later, cinema. This course is designed to introduce students to both the production and reception of such works, and to examine their multiple historical and aesthetic causes and effects. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial for required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 425. 19th-Century Poetry

Reading and analysis of poetry of the three major 19th-century schools: Romantic, Parnassian, Symbolist. Emphasis on textual explication. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 426. Avant-Garde Poetry of the 20th Century

Study of French avant-garde poetic movement of the early 20th century, with emphasis on Futurism, Cubism, Dadaism, and Surrealism. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 427. Literature of the 17th-Century I

From the hero to the honnête homme; Corneille, Descartes, Molière, La Fontaine, and La Rochefoucauld are among the writers studied. The movement from the unique, superhuman character of the hero to the urbane sociability of the honnête homme is examined in light of Descartes's search for method and Molière's deformation of common assumptions. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 4271. French Classical Theater

A study of works by Corneille, Molière, and Racine. We consider how the theater contributes to the rise of absolutism in France in the 17th century. The depiction of kings and the role of primogeniture; the function of sacrifice; the marginalization of women; the glorification of Ancient Rome; Orientalism; tensions between family and state; and the rise of the bourgeoisie in these plays suggest how the dramas played out on stage mirror the historic spectacle of the court over the course of the century as it develops an increasingly centralized authority culminating in the image of an all-powerful Louis XIV. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA AH

French 428. Literature of the 17th-Century II

Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 4281. Order in the Court: Classical Struggles During the Reign of Louis XIV

Beginning with a study of Versailles, we examine the spectacular dimensions of artistic production under Louis XIV, including architecture, visual arts, and landscapes, in addition to literature. The recent historical novel *L'allée du Roi*, which details the romance between the king and his mistress and then second wife Mme de Maintenon, and the *Memoires of Saint-Simon* help to set the stage for us to appreciate the intrigues at court. Situating the king at the head of a hierarchical and orderly court structure, we examine some of the less harmonious elements of court-dominated life offered in representations by Corneille (*Surena*), Molière (*Les Femmes Savantes*), Racine (*Mithridate*, *Phèdre*), La Rochefoucauld, La Bruyère, La Fontaine, Mme de Sévigné, Pascal. We consider the ways in which the court assures its power through primogeniture, the right of the eldest born son to inherit power, as well as through strict codes of etiquette and the generosity of the crown to its loyal and productive followers. We examine how these factors are insufficient to protect the monarchy against the contravening forces of political ambition, family struggles, the emerging role of women, religious faith, and the devastating effects of war and disease. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial for undergraduates. Credit 3 units.

A&S TH FA SSP

French 431. Literature of the 18th Century I

Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 4311. Voices of Dissent: Enlightenment Principle and Social Protest

The 18th century saw a rise in overtly moralizing texts, on the one hand, and unapologetically immoralist philosophies on the other. We focus on texts that avoid these extremes, allowing multiple voices to be heard. With the aid of excerpts from Genette, Bakhtine, Todorov, and Barthes, we identify the voices of dissent in several 18th-century genres, including satire, the tale, the novella, the philosophical dialogue, theater, autobiography, and the epistolary novel. By reading authors such as Voltaire, Montesquieu, Prévost, Diderot, Cazotte, Rousseau, Beaumarchais, and Charrière, students come to appreciate a third tendency in 18th-century texts that is crucial to our understanding of the Enlightenment: the tendency to validate conflicting perspectives. We consider whether a moral can be derived from a text that consistently questions the voice of authority. We analyze the implications of such questioning in the years before the Revolution. Finally, we consider the extent to which the overzealous censorship laws of the period may have obliged authors to couch socially controversial ideas in narrative forms that seem to deny their own assertions. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA SPP

French 432. Literature of the 18th Century II

This course explores some of the major prose works of 18th-century France, which formed (and informed) the Enlightenment. Through readings of both canonical and non-canonical texts, we examine the changing place (and changing contours) of man in relationship to society. We also examine the questions the Enlightenment subject asks about the changing status of authority. To determine the limits of Enlightenment, we analyze both 20th-century critiques of the Enlightenment (Foucault, Habermas), and some of the Enlightenment's more challenging voices (Sade, Lacos, Graffigny, de Gouges). Readings include texts by Montesquieu, Voltaire, Diderot, Rousseau, and others. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 4321. Art, Revolution, and Society

This course examines major 18th-century aesthetic treatises and literary texts that explore solutions for aesthetic quandaries. Authors include d'Alembert (*Preface a l'Encyclopedie*), Rousseau (*Discours sur les Sciences et les Arts*, *Lettre a d'Alembert*), Diderot (*Entretiens sur le Fils Naturel*, *Le Paradoxe du Comedien*, *Le Neveu de Rameau*), Cazotte (*Le Diable Amoureux*), Beaumarchais (*Le Barbier de Seville*, *Le Mariage de Figaro*), Staël (*De la Litterature*, *Corinne*). These works allow us to study some of the major insights into the aesthetics of music, painting, and the performing arts with an eye to how these aesthetic revolutions expanded the scope and influenced the form of the French language and literary texts. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial for undergraduates. Credit 3 units.

A&S TH

French 4331. Women of Letters

Same as WGS 4333.

We investigate the representation of women in 18th-century texts. Why did the novel and epistolary fiction become so closely associated with women as writers, heroines, and readers in the

course of the century? Why were women considered exemplary and yet, at the same time, a threat? The 18th century saw the last of the salons led by women well-versed in philosophy, literature, art, and politics. It saw the reinforcement of the opposition between the public and the private sphere. Woman was the incarnation of the ideal of liberty and yet excluded from the "rights of man." Rousseau praised women's role as nurturers and peace-makers but cast into doubt their capacity for genius. Literary texts that feature women became a sparring ground for two of the century's major literary trends: sensibilité and libertinage, for a woman's sensitivity was thought to contain the seeds of virtue and licentiousness. We investigate philosophical discourses on the senses and emotions and political discourses on republican responsibility. We read these texts in conjunction with the literary works of men and women authors, including Prévost, Marivaux, Graffigny, Riccoboni, Diderot, Rousseau, Charrière, Laclose, Sade, and Staël. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 4341. Enlightenment Energy: Comedy, Eroticism, and the Grotesque

In this course we examine works in which the comic, the erotic, and the grotesque—base urges that 18th-century audiences deplored yet found entertaining—made inroads into the literature of the time. The Enlightenment was highly suspicious of impulses and intuitions that challenged or escaped the bounds of virtue, sentiment, and reason. French philosophers debated whether genius lay in the supreme mastery or the spontaneous creation of art, whether talent was inborn or could be acquired through practice. Reading texts that span the long 18th century, by authors such as Molière, Marivaux, Crébillon fils, Voltaire, Diderot, Restif de la Bretonne, Beaumarchais, Sade, and Hugo, we investigate how the satirical, the bawdy, and the profane served as the well-spring of Enlightenment inspiration, giving rise to visions of an ideal society. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial for required for undergraduates. Credit 3 units.

A&S TH

French 436. Romanticism

This course studies pre-Romantic themes in the works of Madame de Staël and Chateaubriand and of their evolution in the poems of Lamartine, Musset, and Vigny, the theater of Victor Hugo, and the novels of George Sand and Victor Hugo. Emphasis is placed on the emergence of a littérature du moi (literature of the self), the redefinition of the place of the artist in society after la bataille romantique, and the stylistic innovations that led to Modernism. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 4391. Classicism/A-Classicism

Among the hallmarks of 17th century, French classicism celebrated reason, order, balance, and a power often associated with the great achievements of Ancient Greece and Rome. Reason, however, coexisted with dreams and madness; order encountered threats both political and sexual; disharmony persisted despite longings for justice; and depictions of Antiquity flourished alongside those of the Orient, the exotic other world of the East. The course explores these "a-classicisms," or countervailing forces, by studying the challenges

that ground the struggles and seductions in dramas by Corneille, Molière, and Racine as well as in the novels of Madame de Lafayette. We read Graffigny's *Lettres d'une Peruvienne*, Prévost's *Manon Lescaut*, Laclos's *Liaisons Dangereuses* to understand classicism retrospectively, through the "a-classicism" of the 18th century's treatment of identity, alienation, desire, and societal tensions. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial for required for undergraduates. Credit 3 units.

A&S TH

French 4392. Commemorating the King

The court of Louis XIV at Versailles was remarkable for its grandeur, its consolidation of power, and its celebration of the Sun King. Arguably, all aspects of court life were regulated by the crown and all things produced—whether wars or monuments; art or science; novels or histories—were tributes to the king. All reflected a certain "ideology of commemoration," that is, an implicit or explicit validation of the monarch's privilege and prestige, both for his contemporaries and for posterity. We explore how authors (including Louis XIV, La Bruyère, La Rochefoucauld, Perrault, La Fontaine), artists (Lebrun, Rigaud, Poussin, Félibien), and historiographers/memorialists (Racine, Saint Simon) support the ambitions of the crown through their works. Modern critics Elias, Marin, Burke, and Merlin guide our research into the activities of the royal family, the ideology of absolutism, and the role of art in affirming the power of Versailles as we continue to memorialize it through surviving texts, monuments, and images. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial for required for undergraduates. Credit 3 units.

A&S TH

French 440. Parnassian and Symbolist Literature

This course offers an examination of key writers and texts of the parnassian and symbolist schools of the 19th century. Readings include poetry, drama, and prose. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial for required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 441. From Symbolism to Surrealism

This course presents a survey of major prose and poetry from 1870–1919, including writers such as Maupassant, Daudet, Anatole France, Loti, Valery, Peguy, and Claudel. We discuss several key philosophical and literary movements of the period (e.g., naturalism, idealism, experimental novel). Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 443. Contemporary Francophone Literature

A general survey of Francophone literature. This course examines representative texts of Quebec, Acadia, Africa, and West Indies. Authors to include Antonine Maillet, Louis Hémon, Michel Tremblay, Gérard Leblanc, Anne Hébert, Maryse Condé, along with the influential poets of Négritude, Senghor, and Césaire. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial for undergraduates. Credit 3 units.

A&S TH FA Lit

French 444. Modern Francophone Poetry

The first half of this course consists of close readings of the founders of Negritude: Césaire, Senghor, and Damas. While the political and historical impact of these poets is discussed in some depth, we analyze their poetry primarily in terms of its aesthetic value and concerns. We study American influences such as jazz and the poetry of the Harlem Renaissance along with French influences. The second half of this course focuses on the contemporary poetic scene in Africa and the Caribbean. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 447. The Medieval Literary Arts

Presentation of the principles, materials, and methods prerequisite to the effective study of medieval literature. Includes textual criticism and editing, altérité, manuscript culture, orality vs. literacy, arts of rhetoric, prominent motifs and topoi, and esthetic principles. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 448. From Arthur to the Grail

Same as Med-Ren 448.

Conducted in English. A broad survey of the Arthurian legend: its origins, its elaboration in French, English, and other medieval literatures, and its expression in modern literature (especially English and American) and in the visual arts, film, and music. All readings available in English. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA AH Lit

French 449. Old French

Same as Med-Ren 449.

To enable students to read Old French, this course offers a brief presentation of grammatical concepts and forms; close reading, translation, and discussion of selected medieval texts. Knowledge of Latin useful but not essential. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH

French 450. Women and the Medieval French Literary Tradition

Same as WGS 4502.

The Middle Ages constitute a beginning—a period when new languages and literatures came into being, along with Romanesque book-illumination and stained glass, Gothic cathedrals, Gregorian chant, Troubadour song, crusades for the Holy Land, and quests for the Holy Grail. Medieval French Literature is therefore a new literature, defining itself against antique models and its own rich multilingual, highly visual, and oral culture. This course provides an overview of this diverse and fascinating French literary tradition while focusing on the status of women in the literary production of the Middle Ages. Particular attention is given to women's role in the creation of texts as authors and patrons. We also examine how gender roles are constructed and challenged through the literary representation of female characters. Readings include examples from major genres: Marie de France's *Lais*, Chrétien de Troyes's *Lancelot*, Rutebeuf's *Vie de Sainte Elysabel*, the anonymous

Aucassin et Nicolette, as well as Fabliaux, poetry of the Trouvères and Trobairitz, excerpts of the *Roman de la Rose*, and works by Christine de Pizan. All readings and discussions are in modern French. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 451. French Literature of the Middle Ages I

Same as Med-Ren 451.

French literature from the beginning to 1250. The course emphasizes chansons de geste, courtly romance and lyric, and early drama. Most works read in modern French. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 452. French Literature of the Middle Ages II

Same as Med-Ren 452.

Literature from 1250 to the end of the Middle Ages, with emphasis on theatre, fabliau, allegory, and late medieval lyric. Most works read in modern French. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH FA Lit

French 453. History of the French Language

Study of phonetic and morphological evolution of the French language with side glances at historical events that shaped this development. No previous knowledge of Latin necessary. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S LA

French 456. Romance Philology

Same as Ling 455, Span 456, Ital 456.

Study of the evolution of the major Romance languages from their common Latin origins. Knowledge of classical Latin not required, but acquaintance with phonetics of at least one Romance language extremely helpful. Conducted in English. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial for undergraduates. Credit 3 units.

A&S LA

French 458. Nature, Landscape, and Travel in the Middle Ages

Through an examination of the concept of nature in the Middle Ages, the course analyzes the importance of the presence or absence of landscapes in medieval literature, including chansons de geste, courtly romances, roman de la rose, accounts of travel and pilgrimages, poetry, and theater. We examine the movements of medieval men and women from one place to another; their concepts of the relation between the nature and culture; their emotions when confronting nature; the various means they use to describe space and travel; the function of nature and landscapes within individual works. Each text is situated within the general framework of the history of the language and the literature of the period. The thematic focus of the course is informed through theological, philosophical, and anthropological per-

spectives essential to an appreciation of all medieval texts. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial for undergraduates. Credit 3 units.

A&S TH FA SSP

French 458I. Sacrifice and Service: Masculinity and the Medieval French Literary Tradition

The Middle Ages constitute a beginning: a period when new languages and literatures—along with Gothic cathedrals, Troubadour song, Romanesque art, crusades for the Holy Land, and quests for the Holy Grail—come into being. By focusing on the notion of service, we study how medieval society establishes a hierarchy of power that encompasses religious, feudal, and courtly relationships. Particular attention is given to the construction and testing of gender roles. What are men and women asked to sacrifice? Whom and what are they supposed to serve? How do the concepts of honor and heroism motivate the service of knights and heroines to their king and God? Texts to include: *La Chanson de Roland*, *La Queste du Saint-Graal*, *La Vie de Saint Alexis*, *Le Jeu d'Adam*, Béroul's and Thomas's versions of *Le Roman de Tristan*, Chrétien de Troyes's *Le Chevalier au Lion* or *Yvain*, Rutebeuf's *Miracle de Théophile*, and Christine de Pizan's famous poem on Jeanne d'Arc. All readings in modern French. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial for required for undergraduates. Credit 3 units.

A&S TH

French 459. Rewriting the Colony: North African Francophone Literature

This seminar studies French travel writing related to North Africa, as well as the major works of French literature from and about Algeria, Morocco, and Tunisia, as a prelude for considering some texts of those countries' Francophone literature that have now received the approval of audiences in France and the United States. We consider how colonial-era writing by novelists like André Gide, Louis Bertrand, and Albert Camus defined the colonial "exotic," and examine the way in which the political independence of the colonies made their work seem dated, irrelevant, or politically untenable. We then examine the way the former empire writes back to its one-time colonizers, in the works of post-independence authors such as Kateb Yacine, Assia Djebar, and Abdelkebir Khatibi, who both observe and revise the conventions of post-colonial literature. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial for undergraduates only. Credit 3 units.

French 460. Topics in European History IV

A detailed look at the contributions of major French theorists such as Beauvoir, Cixous, Irigaray, Kristeva, and the interpretation of French feminism in America. We study French feminist theory with an eye to psychoanalysis, maternity as metaphor and experience, women and language, and/or Marxist-feminist theory, and aesthetics. Conducted in French. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial for undergraduates. Credit 3 units.

A&S TH FA SSP

French 461. Topics in French Literature and History

FA Lit SSP

French 466. Second Language Acquisition*Same as Ling 466.***A&S** LA**French 468. Topics in French Literature**

Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH **FA** Lit**French 469. Reading and Writing in a Second Language**

In the past decade the process of becoming literate in a second language has received considerable attention by researchers and instructors. This course, taught in English, extends issues in second-language literacy beyond pedagogy by examining the wide range of theoretical and research issues, both historical and current. Literacy acquisition among second language learners involves a number of variables including both cognitive and social factors. Topics to be discussed in class include: individual learner differences; the extent to which reading and writing are interrelated; text types and literary forms; literacy and social power; and universal cognitive operations. Students discuss how to bridge research and practice, and they create activities to be included in a reading and writing portfolio. Course counts toward the Graduate Certificate in Language Instruction. Credit 3 units.

A&S LA**French 470. Suffering and Self-Expression in Early Modern French Literature**

How did early modern people cope with disease, suffering, and death? With the advancement of medical science, in particular with Ambroise Paré, who saw it as his mission to ease his patients' pain, a new sensitivity toward man's suffering began to develop. Working within the historical and scientific context of the time, this course examines old and emerging attitudes toward man's suffering with special emphasis on the relationship between suffering and artistic expression. Topics discussed include: suffering as part of the human condition; suffering and faith; suffering and early modern medicine; medicine and religion; gendered views of illness; disease/suffering as a vehicle of relief and self-expression; literary treatment of suffering and disease, including melancholia, depression, suicide, kidney stone, mourning, aging, etc.; images of the ailing body and the ailing mind in early modern texts; disease as a theme and a metaphor. Various genres are covered (fiction, poetry, drama, essay, travelogue). Authors likely include Maurice Scève, Helisenne de Crenne, Louise Labé, Joachim Du Bellay, Pierre de Ronsard, Marguerite de Navarre, Jean-Baptiste Chassignet, Gabrielle de Coignard, and Michel de Montaigne. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial for undergraduates only. Credit 3 units.

FA Lit**French 481. Sartre and Existentialism**

This course studies French existentialism in light of recent intellectual developments, especially post-modernism; detailed study of Sartre's major literary and critical works. Conducted in French, nonmajors may do written work in English. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH **FA** Lit**French 482. Avant Garde, Postmodern, and Modernity**

We study the history and evolution of an avant garde in French literature, possible definitions of

the postmodern, description of the different areas of modernity. Readings both theoretical and literary. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH **FA** Lit**French 483. Gender and Genre***Same as Med-Ren 483, WGS 483.*

A sampling of the diverse contributions made by French women to literary history, this course examines what prompted women to write in the 16th century; what they wrote about; which genres they chose; how these women were viewed by their contemporaries; etc. Prerequisite: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S SD TH **FA** Lit**French 485. Contemporary Art in France***Same as Art-Arch 485.***A&S** TH **FA** AH**French 492. Contemporary French Literary Criticism**

The first half of the course deals with works of Roland Barthes; the second examines relationship of philosophy to literature and explores how the ideas of Foucault, Lacan, Derrida, Deleuze, Girard, and Baudrillard can be applied to the study of literary texts. Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH **FA** Lit**French 493. Selected French Writers**

Prerequisites: French 325 and French 326 or one of these courses and the equivalent Washington University transfer literature course from Toulouse or Paris. One-hour preceptorial required for undergraduates. Credit 3 units.

A&S TH **FA** Lit**French 495. Honors**

To be considered for graduation with Honors, students must: (1) participate satisfactorily in two 400-level literature courses and (2) enroll in French 495 and submit an Honors Thesis approved by the department at least two months before graduation. Prerequisite: 3.0 grade point average. Qualified students should consult the department. Credit 3 units.

A&S TH**French 500. Independent Study**

Prerequisites: senior or graduate standing, and permission of the chair of the department. Credit variable, maximum 6 units.

Italian**Ital 101D. Elementary Italian, Level I**

Beginning language program stressing rapid acquisition of spoken ability, with some attention to the development of reading, writing, and listening skills as well. Designed for students with no prior knowledge of Italian or minimal experience in another Romance language. Credit 5 units.

A&S LA**Ital 102D. Elementary Italian, Level II**

Continuation of Ital 101D. Course stresses rapid acquisition of spoken ability with increased attention to the development of reading, writing, and listening skills. Prerequisite: Ital 101D or placement by examination. Credit 5 units.

A&S LA**Ital 106D. Elementary Italian for Romance Language Students I**

Designed for students whose previous study of

French or Spanish enables them to grasp the principles and rules of Italian grammar more efficiently. Emphasis on all four language skills: speaking, listening, reading, writing. Prerequisite: undergraduates, four years of high school French or Spanish, or Fr/Span 201D; no prerequisite for graduate students in Romance Languages; graduate students in other fields admitted by permission of instructor. Credit 4 units.

A&S LA**Ital 107D. Elementary Italian for Romance Language Students II**

Continuation of Ital 106D. Designed for students whose previous study of French or Spanish will enable them to grasp the principles and rules of Italian grammar more efficiently. Emphasis on all four language skills: speaking, listening, reading, writing. Prerequisite: Italian 106D or permission of instructor. Credit 4 units.

A&S LA**Ital 108. Elementary Italian Level I**

Beginning language program stressing rapid acquisition of spoken ability with immersion teaching method. Credit 4 units.

A&S LA**Ital 109. Elementary Italian Level II**

Continuation of Ital 108. The 109 Italian course parallels the methodology of the 108 level, but more sophisticated grammatical skills are covered. The 108-109 sequence covers the major grammatical points of the language. Students who complete Ital 108 and 109 are eligible to enroll in Ital 201. Prerequisite: Elementary Italian Level I or equivalent. Credit 4 units.

A&S LA**Ital 201D. Italian Level III***Same as Ital 201D.*

A course divided into two parts taught by a team of instructors in a MWF master class and TTh reading and discussion section. Reviews basic skills intensively with increased emphasis on writing. Prerequisite: Ital 102D, or placement by examination. Credit 5 units.

A&S LA**Ital 215. Conversation/Culture**

This course examines popular culture through a focus on what is said and performed. The course consists of thematic units focusing on everyday occurrences and themes that mark the Italian experience, such as conversation in the Italian bar; poignant views of life expressed in films and other media; daily experiences depicted in poems and songs; public and private politics; the role of the meal in real life, art, and literature. As students advance through each thematic module, they develop a creative project in which they put into practice (by a skit/presentation/text/artwork) what they have learned. Prerequisite: Ital 201D or the equivalent. Credit 3 units.

A&S LA**Ital 247. Freshman Seminar**

Taught in English. Small group seminar devoted to readings and study of other texts such as films, paintings, etc., discussion and writing. Topics vary; interdisciplinary focus. Credit 3 units.

Ital 249. Refracted Light: How Others View Italy

Throughout the centuries Italy has both enjoyed and suffered the fascinated gaze of foreigners, who have written about it, painted it, made music and films about it. Drawing principally on prose writings from the 18th to the 20th centuries, in such varied genres as the short story, the novel, the mystery novel, travel writing, and the memoir, this course examines the images of Italy that non-Italians project. Beyond learning about Italy, students consider their own "idea" of Italy, examine their own frame of reference and cultural biases, interrogate a variety of stereotypes, and ponder

how well one can truly understand a place as an outsider or reader. Authors studied include Goethe, John Ruskin, Thomas Mann, Henry James, others. Credit 3 units.

A&S TH

Ital 298. An Internship for Liberal Arts Students

Same as GeSt 2991.

Ital 2991. Undergraduate Independent Study

Prerequisite: Ital 201D and permission of the department. No more than 6 units may be earned by a student. Credit 3 units.

Ital 301. Oral Communication I

Designed to offer students an opportunity to practice and refine their conversational skills while expanding their practical vocabulary. Wide variety of topics for discussion; brief oral reports. Regular homework assignments with emphasis on Web-based research and learning. Prerequisite: Ital 201D. Credit 3 units.

A&S LA

Ital 307D. Grammar and Composition I

Same as Ital 307D.

This course features advanced lessons in Italian grammar and vocabulary and an introduction to prose analysis, with the goal of improving both reading and writing in Italian. The basis of our work is a series of readings having a common theme, the representation of childhood in Italy in the late 19th and early 20th centuries. We think about the status of children at the turn of the century, particularly with regard to family, education, and work, and also about the challenges a writer faces to portray the experience and point of view of a child believably. Readings include short stories by Gabriele D'Annunzio, Edmondo De Amicis, Luigi Pirandello, and Giovanni Verga, as well as Carlo Collodi's classic novel, *Pinocchio*. Grammar exams and regular composition assignments; final exam. Essential for further study of Italian language and literature, this course must be taken before or concurrently with Ital 323C or 324C. Prerequisite: Ital 201D, or permission of instructor. Credit 3 units.

A&S LA

Ital 308D. Grammar and Composition II

A continuation of Italian 307D, this course features advanced lessons in Italian syntax and vocabulary and an introduction to the analysis of poetry and theatrical texts, with the goal of improving both reading and writing in Italian. The basis of our work is a series of readings having a common theme, desire requited and unrequited. We think about what poets desire, how they give verbal expression to it, and how the success or failure of their pursuit informs their writing. Likewise we look at how playwrights exploit this theme as a plot device. Readings include poetry by Petrarch, Michelangelo, Tasso, and Montale, as well as two comedies. Grammar exams and regular composition assignments; final exam. Essential for further study of Italian language and literature, this course must be taken concurrently with Ital 323C or 324C. Prerequisite: Ital 307D or permission of instructor. Credit 3 units.

A&S LA

Ital 310. Advanced Italian Grammar in Padua

This advanced Italian grammar course is taught every year in the Boston University program in Padua, Italy, with which Washington University is affiliated. The course allows students to further their mastery of Italian grammar and syntax, in order to achieve a level of full satisfaction of comprehension and active communication. Readings include newspaper articles, literary essays; students write brief compositions while taking weekly tests. Open only to Washington University students enrolled in the Padua, Italy program with Boston University. Credit 4 units.

Ital 311. Introduction to Contemporary Italy

This course is taught every year in the Boston University program in Padua, Italy, with which Washington University is affiliated. The course focuses on refining students' ability to express themselves in Italian while presenting an overview of the history and society of contemporary Italy. Readings include works by authors who are particularly significant to Italian literature of the 20th century, as well as an array of other materials. Open only to Washington University students enrolled in the Padua, Italy, program with Boston University. Credit 4 units.

Ital 322. Topics

A multidisciplinary course focusing on a significant aspect of Italian culture. The topic will differ from semester to semester and may draw on art, film, history, gender studies, literature, music, philosophy, politics, science. Prerequisite: previous or concurrent enrollment in Ital 307D.

Section 01. The Italian Resistance. This course focuses on artistic reactions against the Fascist dictatorship in Italy. After discussing the historical and cultural context that gave rise to Fascism and the Partisan rebellion, we study what is conventionally called the neorealist "movement" (1930–1950), which developed spontaneously and without codified structures in opposition to the political and discursive controls imposed by Fascism, and which was characterized by certain literary motifs and innovations. We consider among other things the emphasis on small localized stories (storie) of individual resistance during the war through which authors sought to evoke a unified choral history (Storie) of rebellion; the uncommon heroes, typically children, women, priests and the poor, who are represented as the soul and the primary agents of political and moral renewal; and the unorthodox emphasis on the spoken, regional, and dialectal word. We conclude by considering more recent representations in literature and film of the Resistance. We read such novels as Italo Calvino's *Il Sentiero Dei Nidi Di Ragno* (1947), Ignazio Silone's *Pane e Vino* (1937), Carlo Levi's *Cristo Si e Fermato a Eboli* (1945), and Elio Vittorini *Conversazione in Sicilia* (1941); and we discuss such films as Roberto Rossellini's *Roma Citta Aperta*. Course taught in Italian; readings in Italian.

Section 02. Rome. This course explores a variety of literary texts and films in which Rome features as protagonist. A historic center of Western civilization and authority, of Christianity, of cultural splendence and degeneration, the city of Rome is a palimpsest of history, myth, and symbolic meaning. We examine the myriad ways in which the capital city is conceived by modern Italian writers and film directors such as d'Annunzio, Moravia, Gadda, Pasolini, Fellini, De Sica, Scola, and Rossellini. Credit 3 units.

A&S TH

Ital 323C. Italian Literature I

Same as Med-Ren 323C.

Introductory survey of Italian literature from its beginnings in the Middle Ages through the late Renaissance. Analysis of the predominant genres: lyric, religious narrative, novella, treatise, chivalric epic. Prerequisite: Ital 201D. Previous or concurrent enrollment in Ital 307D or 308D recommended. Credit 3 units.

A&S TH FA Lit

Ital 324C. Italian Literature II

Major literary works in Italy from the 18th, 19th and 20th centuries. Movements covered include romanticism, verismo, futurism, neorealism, and post modernism. Writers range from Goldoni and Leopardi to Pirandello and Calvino. Prerequisite: Ital 201D. Previous or concurrent enrollment in Ital 307D or 308D recommended. Credit 3 units.

A&S TH FA Lit

Ital 332. Topics in Film Studies: Italian Cinema
Same as IAS 3321, EuSt 332.

The evolution of Italian cinema from its origins to the present. Study of cinematic works and periods from a variety of theoretical perspectives. Specific areas of discussion include: cinema as a revolutionary aesthetic; mass culture versus high art; early genre; divismo (stardom); the avant garde; the advent of film sound; the representation of politics and history; neorealism; postwar popular genre; modernism; metacinema; literary adaptation; postmodernism. Discussions will be based on works by major Italian filmmakers such as Pas-trone, Blasetti, Rossellini, De Sica, Visconti, Fellini, Antonioni, Monicelli, Leone, Pasolini, Bertolucci, Nichetti, Moretti. Some emphasis on the relationship between literature and film. Course conducted in English: Italian majors read in Italian, others in English translation. Prerequisite for Italian majors: Ital 307D, or permission of instructor. Two to three hours of film-viewing plus three class hours a week. Taught in English.

Credit 3 units.

A&S TH FA AH Lit

Ital 334. Topics in Italian Cinema

Same as EuSt 335, IAS 3352.

A companion to Italian 332, this course focuses on a select topic in the history of Italian cinema, such as the work of a single director or a significant cinematic movement. Course conducted in English. Italian majors read in Italian, others in English translation. Prerequisite for Italian majors: Italian 307D. Prerequisite for non-majors: Italian 332, Film 220, or permission of instructor. Credit 3 units.

A&S TH FA AH

Ital 350. Special Topics in Italian Literature and Culture

Credit 1 unit.

A&S TH FA Lit

Ital 352. Italian Institute Project

Credit 2 units.

A&S LA

Ital 399. Independent Study

Undergraduate independent study at the 300 level. Prerequisite: competence in oral and written Italian, and permission of instructor. Credit variable, maximum 6 units.

Ital 402. Introduction to Teaching Romance Languages

Same as Span 402.

A&S LA

Ital 419. Feminist Literary Theory

Same as WGS 419.

A&S TH

Ital 428. The New Sicilian School

Same as LH 4281, EuSt 4280, IAS 4284.

The unification of Italy in the mid-19th century led to the creation of a new "Sicilian School," the first since that of the court poets associated with Frederick II in the 13th century. These new Sicilian writers have given us many narrative masterpieces, focusing on common concerns such as the island's identity over two millennia and the impact of Italian nationalism; the rise of bourgeois culture and the decline of indigenous patriarchal structures; the rule of law and the role of the Mafia; and the politics of language. We read novels by several of these authors, including Verga, Vittorini, Tomasi di Lampedusa, Sciascia, Maraini. Course taught in English; readings in Italian or English. Credit 3 units.

A&S TH FA Lit

Ital 432. Divergent Voices: 20th-Century Italian Women Writers

Same as IAS 4324, EuSt 432, WGS 432.

This course examines select novels, poetry, and

political writings by such noted authors as Sibilla Aleramo, Dacia Maraini, Luisa Muraro, and Anna Banti. Special attention is paid to the historical, political, and cultural contexts that influenced authors and their work. Textual and critical analysis focus on such issues as historical revisionism in women's writing, female subjectivity, and the origins and development of contemporary Italian feminist thought and practice. Taught in English. Credit 3 units.

A&S SD TH WI FA Lit

Ital 433. Literature of the Italian Enlightenment

Same as EuSt 433, IAS 4330.

This course aims to explore the spectrum of intellectual and literary discourse of the Italian Enlightenment by examining a wide array of texts and genres. Readings include selections from Enlightenment and popular periodicals, scientific tracts on human anatomy, women's fashion magazines, the reformed theater of Carlo Goldoni, as well as Arcadian poetry, and literary criticism. We study the rise and characteristics of "coffee culture" during this age. We pay special attention to the "woman question," which stood at the center of 18th-century Italian intellectual discourse, and which was critical to the contemporary drive to define the enlightened nation-state. The class is conducted as a workshop in which students and instructor collaborate in the realization of course goals. Readings in Italian or English; discussion in English. Prerequisite: Ital 323C or Ital 324C. Credit 3 units.

A&S TH WI FA Lit

Ital 437. Caff , Cadavers, Comedy, and Castrati: Italy in the Age of the Grand Tour

Same as IAS 4371, EuSt 437.

Taught in English. With French libertine philosopher the Marquis de Sade, German novelist Johann Wolfgang von Goethe, Romantic poet Lord Byron, and other illustrious travelers of high birth and good fortune who sought finishing enrichment by making their Grand Tour to Italy from the mid-18th through the early 19th centuries, we explore the richness and variety of Italian life and culture as depicted by both Grand Tourists as well as their Italian interlocutors. Chief among our destinations are Venice, Bologna, Florence, and Rome. Attractions typical of the early modern Tour circumscribe our journey. Coffee houses first appeared in the 18th century and, in ways strikingly similar to their function today, became the real and symbolic centers of social, intellectual and civil exchange. We explore 18th-century coffee culture through comedies and Enlightenment and popular journals that took them as their theme, as well as through a study of the coffee houses themselves, a number of which are still in existence. Theaters, concert halls, gaming houses, literary and scientific academies, galleries, churches, and universities are part of our standardized itinerary. During the period, anatomy and physiology attained new legitimacy as crucial scientific disciplines and we visit both the anatomical theater at the University of Bologna, where the annual Carnival dissection took place, as well as the first museum of anatomy and obstetrics founded in the Bolognese Institute of Sciences in 1742 by Pope Benedict XIV. The piazza, the hub of Italian life, where early modern Italian citizens communed for Carnival masquerades, criminal executions, religious and civic festivals, and, most important, mundane mixing and mingling are a key stop in select cities. We visit archaeological excavation sites, in particular Pompeii, first unearthed in 1748. Fashion, an obsessive preoccupation of the day, is also a point of interest in our travels. Among the most remarkable aspects of Italian culture of the period, one on which travelers prolifically remarked, was the public presence and authority of women, authority unmatched anywhere else in Europe at the time.

Through primary and recently published secondary sources, we focus our own sights on the power and influence of women within the university, the scientific academy, the art world, and the Republic of Letters. Readings in Italian or English Credit 3 units.

Ital 456. Romance Philology

Same as French 456.

A&S LA

Ital 473. Machiavelli and Guicciardini

Same as Pol Sci 407, Med-Ren 473.

The development of modern political science in 16th-century Italy; questions of theory, methodology, and historical context as factors in the development of Machiavelli's and Guicciardini's political visions. Readings in Italian or English; discussion in English. Credit 3 units.

A&S TH WI FA SSP

Ital 481. Dante

Same as Re St 481.

A study of the *Divina commedia* with emphasis on the *Inferno*. Conducted in English. Reading knowledge of Italian recommended but not required. Credit 3 units.

A&S T FA Lit

Ital 483. Boccaccio: Decameron

Same as Med-Ren 4831.

The unrivaled master of late medieval Italian prose, Boccaccio is also a strikingly modern author whose works address such questions as the relationship between literature and history; God and man; storyteller and audience; gender, language, and power; literature and truth. With these and other concerns in mind, we read his masterpiece, the *Decameron*, a collection of 100 tales set in the Black Plague of 1348. We then contrast it to his late *Corbaccio*, ostensibly a misogynist novel but a text that finally resists such a flattening judgment. Readings in Italian or English; discussion in English. Prerequisite: 3 units of literature. Credit 3 units.

A&S TH WI FA Lit

Ital 485. Ariosto: Orlando Furioso

Same as Med-Ren 485.

A close reading of this Renaissance masterpiece with attention to questions of structure and sources, the themes of love and madness, the representation of court life. Readings in Italian or English; discussion in English. Credit 3 units.

A&S TH FA Lit

Ital 491. Postmodernism

Same as EuSt 491, IAS 4918.

This course explores the complex significance of Italian Postmodernism through an examination of the theoretical arguments and literary works that have shaped the cultural and political debate of the past 50 years. Students study, among others, the critical theories of "open work" (Umberto Eco), "literature as lie" (Manganelli), and "weak thought" (Gianni Vattimo) that developed from the neo-avant garde movement of the 1960s. Analysis focuses on the novels of four authors who have had a defining influence on Italian postmodern thought and narrative forms: Carlo Emilio Gadda, Italo Calvino, Luigi Malerba, and Umberto Eco. Course conducted in English; Italian majors read in Italian, others in English translation. Prerequisite for Italian majors: Ital 307D, or permission of instructor. Credit 3 units.

A&S TH WI

Ital 492. The Italian Detective Novel

Same as IAS 4920, EuSt 492.

The detective novel has an unusual and exceptionally brief history in Italy. Only within the past 35 years has an Italian version or, more precisely, subversion of the genre emerged and come to dominate the Italian literary scene. Prominent Italian writers such as Italo Calvino, Umberto Eco,

Leonardo Sciascia, and Luigi Malerba have deconstructed the conventions of the detective novel in order to portray the disorder and arbitrary meaning of the postmodern world. This course explores the history of the "anti-detective" novel in Italy, and the philosophical and political questions the genre evokes. Readings in Italian and English. Conducted in English. Credit 3 units.

A&S TH WI FA Lit

Ital 495. Senior Honors

Prerequisites: senior standing, at least one course at the 400 level, and acceptance into the Honors program. Credit variable, maximum 6 units.

A&S TH

Ital 4ABR. Italian Course Work Completed Abroad

Italian course work completed abroad. Credit variable, maximum 12 units.

Ital 500. Independent Study

Special studies chosen and arranged with the instructor. Prerequisites: senior or graduate standing, and permission of the chair of the department. Credit variable, maximum 6 units.

Portuguese

Portug 101. Portuguese I

Introduction to Brazilian Portuguese language. The course emphasizes acquisition of communicative ability. It also covers basic grammar points through reading and writing activities. Classes are taught entirely in Portuguese. No prior experience in the language is required. Credit 5 units.

A&S LA

Portug 103. Brazilian Portuguese for Spanish Speakers

Intensive and accelerated course especially designed to take advantage of students' knowledge of Spanish and to promote a more rapid learning of Brazilian Portuguese. Classes are taught entirely in Portuguese and stress oral communication, basic use of grammar, reading, and writing skills. Intermediate online placement exam in Spanish is required. Credit 3 units.

A&S LA

Spanish

Span 101D. Spanish Level 1

Same as Span 101D.

Beginning language program stressing rapid acquisition of communicative ability. In addition to four hours of master class, students must enroll for two hours of additional practice and do one hour of assessed independent learning activities with multimedia resources. Credit 5 units.

A&S LA

Span 102D. Spanish Level 2

Same as Span 102D.

Beginning language program stressing rapid acquisition of communicative ability. In addition to four hours of master class, students must enroll for two hours of additional practice and do one hour of assessed independent learning activities with multimedia resources. Prerequisite: Sp 101D or placement by examination. Credit 5 units.

A&S LA

Span 108. Elementary Spanish Level I

Beginning language program stressing rapid acquisition of spoken ability with immersion teaching method. Credit 4 units.

A&S LA

Span 109. Elementary Spanish Level II

Continuation of Spanish 108. The 109 Spanish course parallels the methodology of the 108 level, but more sophisticated grammatical skills are covered. The 108-109 sequence covers the major grammatical points of the language. Students who complete Spanish 108 and 109 are eligible to en-

roll in Spanish 201. Prerequisite: Elementary Spanish Level I or equivalent. Credit 4 units.

A&S LA

Span 201D. Spanish Level 3: Intermediate Spanish

An accelerated intermediate-level grammar review taught by a team of instructors in a MWF grammar class and a TTH literature/composition class. Reviews basic and some advanced skills intensively with increased emphasis on reading, writing, culture, and vocabulary learning. Prerequisite: Span 102D, or placement by examination. Students must register for both a TTH and a MWF class. Credit 5 units.

A&S LA

Span 245. Women's Fiction in Contemporary Spain

Same as WGS 253.

This course focuses on selected novels and short stories by 20th-century women writers in Spain, beginning with those writing during the post-Civil War years (1939-1975) and ending with the new generation of women writers who emerged after the end of the Franco dictatorship (post-1975). Discussions center on both political and aesthetic issues in the contexts of post-War and post-Franco Spain, including the effects of political repression and censorship, representations of gender and sexuality, and literature's relationship to feminist and nationalist movements in Spain. When relevant, other cultural media, such as film and music, are used in conjunction with our reading and analysis of literary texts. The course is taught in English. Credit 3 units.

A&S TH FA Lit

Span 247. Freshman Seminar

Taught in English. Small group seminar devoted to readings and study of other texts such as films, paintings, etc., active discussion, writing. Topics vary; interdisciplinary focus.

Section 01. Women Between Cultures: U.S.

Latinas. In the past 15 years, Chicanas, Nuyoricans, Cuban-Americans, Dominican-Americans, and other Latinas writing in the United States have created a significant body of works dealing with being a woman between two cultures. This course examines how women have articulated the experience of living within two sets of cultural codes. We read works by Sandra Cisneros, Cristina García, Julia Alvarez, Esmeralda Santiago, Rosario Ferré, Nicholasa Mohr, and Elena Castedo. In our approach we consider the theoretical writings of Gloria Anzaldúa, María Lugones, Rosi Braidotti, and others.

Section 02. Women's Fiction in Contemporary Spain. This course focuses on selected novels and short stories by 20th-century women writers in Spain, beginning with those writing during the post-Civil War years (1939-1975) and ending with the new generation of women writers who emerged after the end of the Franco dictatorship (post-1975). Discussions center on both political and aesthetic issues in the contexts of post-War and post-Franco Spain, including the effects of political repression and censorship, representations of gender and sexuality, and literature's relationship to feminist and nationalist movements in Spain. When relevant, other cultural media, such as film and music, are used in conjunction with our reading and analysis of literary texts. Credit 3 units.

Span 251. Latin-American Nomads and Travelers

Rites of passage and trespassing representing Latin-American immigrants, nomads, and travelers in narrative and film. This course is designed to map the multicultural context of travel, nomadism, displacement and immigration while studying narrative texts (*Before Night Falls*, *Heading South*, *Looking North*, *Life on the Hy-*

phen, *Crossing the Border with Esperanza's Story*) and films (*El Norte*, *Gringuito*, *Old Gringo*, *Stand and Deliver*) by Latin-American and Latino authors. We look at the images, metaphors, and myths that pervade current conceptualizations of the borderlands and explore the variety of ways in which postcolonial rites of passage and trespassing inform the aesthetics of contemporary Latin American cultural expression. In English. Credit 3 units.

A&S TH FA SSP

Span 298. An Internship for Liberal Arts Students

Same as GeSt 2991.

Span 299. Undergraduate Independent Study

Prerequisite: Span 201D and permission of the department. Credit variable, maximum 3 units.

Span 301. Oral Communication I

Practice of spoken Spanish and expansion of vocabulary in a wide range of topics. Discussion and role play based on short readings, music, and film. Use of the Internet for up-to-date news and culture. Oral presentations and limited writing. Prerequisite: Span 201D or equivalent. Concurrent enrollment in Span 307D recommended. Credit 3 units.

A&S LA

Span 307D. Spanish Level 4: Grammar and Composition I

Through a free and practical review of Spanish grammar and syntax, this course allows students to refine their handling of written and spoken Spanish. Emphasis on the understanding and use of the fine points of the language. Activities include oral reports, compositions, class discussions, group projects and the study of selections of literary and nonliterary materials. Prerequisite: Span 201D or placement by examination. Credit 3 units.

A&S LA

Span 308D. Spanish Level 4: Grammar and Composition II

In-depth study of the process of writing, designed to prepare the Spanish major to write literary analysis. Literary texts studied as examples of writing styles. Regular compositions. Prerequisite: Span 307D or placement by examination. Credit 3 units.

A&S LA

Span 310. Advanced Intermediate Spanish in Spain

Continued study of Spanish grammar and syntax at Washington University's Madrid Carlos III University program. A course designed for non-native speakers of Spanish, to refine communicative abilities in all four skills. Prerequisite: Placement by exam at Carlos III. Credit variable, maximum 4 units.

Span 311. Hispanic Culture and Civilization

Study of aspects of the political, social, and cultural life of contemporary Spain and Portugal, and their historical development. Class discussion; readings with compositions. Conducted in Spanish. May be repeated for credit. Prerequisite: Span 201D. Credit 3 units.

A&S CD TH FA SSP

Span 312. Topics in Hispanic Culture and Civilization II

Same as LatAm 312.

Study of aspects of the political, social, and cultural life of contemporary Latin America and their historical development. Class discussion; readings with compositions. Conducted in Spanish. Prerequisite: Span 201D, or placement by examination. Credit 3 units.

A&S CD TH FA SSP

Span 313. Chilean Contemporary Culture

This two-week course provides a panoramic view of Chilean contemporary culture, focusing on the years from 1988 to the present. We examine the representation of current issues in literature, the arts, and the media, and study topics such as governmental institutions, the constitution of 1980, the economy, the role of the Catholic Church, public policy concerning culture, etc. The course meets three hours a day, and there are several guest lecturers. Conducted in Spanish. Requirements: two short papers, short reports in class of the news or a cultural activity students have attended, and participation in class discussions. Course includes an all-day cultural excursion on Saturday (it includes a visit to one of Neruda's houses, a history museum, etc.). Credit 3 units.

A&S TH FA SSP

Span 315. Conversation in Spain

Designed to offer students with advanced skills in Spanish an opportunity to practice and refine their conversation ability on location in Spain. Credit 2 units.

A&S LA

Span 317. Advanced Spanish Language in Chile/Spain

Continued study of Spanish grammar and syntax at Washington University's program in Chile or Spain. A course designed for non-native speakers of Spanish to refine mastery of difficult uses and structures in all four skills. Prerequisite: placement by exam or program director. Credit variable, maximum 4 units.

Span 3181. Spanish Culture and Civilization

This course is intended to acquaint students with diverse aspects of Spanish culture, including history, civilization, society, politics, and the arts (paintings, architecture, music, and film), dating from the first invasions of the Peninsula to the present. Students are exposed to a wide range of written texts on Spanish culture (newspaper articles, essays by contemporary intellectuals, and scholarly studies), as well as visual media (videos and the Internet), in order to gain an awareness of the diversity of ethnic, cultural, and aesthetic traditions within Spain. The broader aim of the course is to enable students to approach and to analyze "culture" from an intellectually critical perspective within concrete sociohistorical contexts. Prerequisite: Span 307D with a grade of B or better, or placement by examination. In Spanish. Credit 3 units.

A&S CD TH FA SSP

Span 3201. Historical and Comparative Linguistics

Same as Ling 320.

A&S LA FA Lit

Span 321. Oral Communication II

Designed to offer students with advanced skills in Spanish an opportunity to refine their ability to discuss a variety of topics. Various media (film, TV, and newspapers) are used as a basis for debate on cultural topics pertaining to the Spanish-speaking world. Oral presentations and limited writing. Prerequisites: Span 301 and 307D or multiple 300-level courses. Credit 3 units.

A&S LA

Span 322. Advanced Conversation in Spain

Designed to offer students with advanced skills in Spanish an opportunity to refine their ability to discuss a variety of topics. Various media such as films, television, newspapers, and other modes of communication are used for oral presentations and some writing. Prerequisites: Span 301, 307D or 308D, or multiple 300-level courses. Credit 3 units.

A&S LA

Span 325. Exploration, Traveling and the Double Gaze: Mapping Geography and Identity in Colonial Spanish America

In this course we examine the geographical, cultural, and ideological mapping as described in the travel/exploration chronicles of the 16th, 17th, and 18th centuries. We focus on the Southern hemisphere (Peru) as well as the Northern Frontier (Mexico, New Mexico, La Florida, Colorado) while reading narrative texts such as Columbus' *Diario*, Cabeza de Vaca's *Naufragios*, Inca Garcilaso de la Vega's *The Florida of the Inca*, Francisco Vázquez de Coronado's *Narratives of the Coronado Expedition*, and Alonso Carrió de la Vandra's *El Lazarillo de Ciegos Caminantes* (Guide for Travelers in 18th-Century Spanish America). We use artwork and historical maps for our study of the cultural and ideological representations of alterity and of the geography of the colonial empire. In English. Credit 3 units.

A&S TH FA SSP

Span 330C. Introduction to the Study of Hispanic Literature

Same as LatAm 330, IAS 3300.

Intended for students with little or no background in literary analysis. Introduction to and methods for analysis of the major literary genres: theater, poetry, essay, novel, and short story. Selections from a variety of Spanish and Spanish-American writers. Prerequisite: Spanish 307D. Students completing Span 308D who have not yet completed a survey course are encouraged to enroll. Credit 3 units.

A&S TH FA Lit

Span 331. Hispanic Art/Arte Hispano

This course focuses on the most important movements, artistic expressions and its representatives of the art history of Latin America and Spain. From the folk naive art of traditional indigenous weaving and tapestry—depicting daily life and harvest—to the “arpilleras” or designs on burlap expressing the suffering of contemporary indigenous women under Latin America’s military dictatorships, to the feminist and surrealist self-reconstruction portraits of Mexican artist Frida Kahlo. From the Medieval paintings of religious Spain, to the criticism of the Spanish nobility by Diego Velázquez, the Spanish Civil War of “Guernica” by Pablo Picasso, to the Surrealism of Salvador Dalí and Antonio Gaudí. From the “Corridos songs” of the Mexican Revolution to the Spanish Flamenco talking about the displacement and suffering of Gypsies in Spain. The students visit the Saint Louis Art Museum and talk to some local Hispanic artists. Prerequisite: Span 308D or Span 321. May be used for elective credit in the Spanish major or minor. In Spanish. Credit 3 units.

A&S TH FA AH

Span 332I. Spanish Film Studies in Spain

An introduction to contemporary Spanish film taught at Washington University’s program in Spain. Prerequisite: Approval of Washington University’s program director. Credit 3 units.

FA AH

Span 333I. Spanish Literature I in Chile/Spain

Introductory survey of Spanish literature from its beginnings in the Middle Ages to the baroque period at Washington University’s program in Chile or Spain. Prerequisite: Span 308D or the equivalent. Credit 3 units.

FA Lit

Span 333C. Spanish Literature I

Same as Med-Ren 333C.

Introductory survey of major literary works written by Spanish authors during the period when the Islamic, Judaic, and Christian cultures co-existed and mutually influenced each other. The first half of the course is devoted to the study of masterpieces such as the *Poema de Mio Cid*, *The Ce-*

lestina, and the *Libro de Buen Amor*. The second half of the course focuses on major works from the period following the unification of Spain under the Catholic monarchs in 1492. Readings include the *Lazarillo*, *Don Quixote*, and *Fuenteovejuna*. Prerequisite: Span 307D; concurrent registration in Span 308D recommended. In Spanish. Credit 3 units.

A&S CD TH FA Lit

Span 334I. Spanish Literature II in Chile/Spain

An introduction to key texts from Spanish literature in the 19th and 20th centuries at Washington University’s program in Chile or Spain. Prerequisite: Span 308D or the equivalent. Credit 3 units.

FA Lit

Span 334C. Spanish Literature II

An introduction to key texts from Spanish literature in the 19th and 20th centuries. Topics included are the three religions in Spain, the Don Juan archetype, women and gender issues, decadence, poverty and class issues, and the Spanish Civil War. Discussions address Spain’s unique history and diversity. Prerequisites: Span 307D; concurrent registration in Span 308D is recommended. In Spanish. Credit 3 units.

A&S CD TH FA Lit

Span 335I. Spanish-American Literature I in Chile/Spain

A survey of major figures and literary trends in Spanish America from 1492 to Modernismo (1880) at Washington University’s program in Chile or Spain. Prerequisite: Span 308D or the equivalent. Credit 3 units.

FA Lit

Span 335C. Spanish-American Literature I

Same as LatAm 335C, IAS 3351.

A survey of major figures and literary trends in Spanish America from 1492 to Modernismo (1880). Emphasis on the writings of either Colón or Columbus, Cortés, Bernal Díaz, Las Casas, Inca Garcilaso de la Vega and Aztec reactions to the Conquest in the early period and on Sor Juana in colonial times. After the period of independence from Spain (1810–24), the focus is on the literary representation of the making of the new nations, and cultural autonomy. Readings include chapters of a picaresque novel, the representation of dictatorship, civilization vs. barbarism, the gaucho epic, and 19th-century fiction. Lectures and class discussions of the readings; exams, papers, and short reports. Prerequisites: Span 307D; concurrent registration in Span 308D is recommended. In Spanish. Credit 3 units.

A&S CD TH FA Lit

Span 336I. Spanish-American Literature II in Chile/Spain

A survey of major Spanish-American literary works from the end of the 19th century to the contemporary period at Washington University’s program in Chile or Spain. Prerequisite: Span 308D or the equivalent. Credit 3 units.

FA Lit

Span 336C. Spanish-American Literature II

Same as LatAm 336C, IAS 3361.

A Survey of major Spanish-American literary works from the end of the 19th century to the contemporary period. Examination of various genres (poetry, narrative, and essay), and literary trends. Works by female (Augustini, Storni, Mistral, Campobello, Bombal, Castellanos, Ferré, Poniatowska, and Valenzuela), and male (Darío, Azuela, Borges, Neruda, Fuentes, García Márquez, Rulfo, Cortázar) authors. Emphasis on writing strategies, cultural perspectives, and gender representation. Prerequisites: Span 307D; concurrent registration in Span 308D is recommended. Credit 3 units.

A&S CD TH FA Lit

Span 337C. The Chilean Short Story

In this course we trace the trajectory of the short story in Chile in the 20th century with special attention to such literary movements as realism, naturalism, vanguardism, surrealism, and the new narrative, including the literature written during the dictatorship. The course tries to determine what specifically can be expressed about national identity through narrative, and is informed by historical, political, and sociological analyses. The course includes several field trips to related sites, and guest lectures by major Chilean writers and critics. Class requirements include a short essay, a long final essay, and a final exam. This course is taught in Santiago, Chile, as part of the Washington University Chile Program. Conducted in Spanish. Credit 3 units.

A&S TH FA Lit

Span 340. Nationalism in Action: The Spanish-American War

We study nationalism as it was in evidence in the Spanish-American War in the United States and in Spain as an outgrowth of each country’s history. We read periodicals of the period, study caricatures and other artistic expressions, as well as writings by authors such as Stephen Crane, Galdós, Mark Twain, Fernando Ortíz, Ivan Musi-cant, and others. Cuba, Puerto Rico, and the Philippines are included in the scope of the course. Students are expected to present a book report orally, and to write it formally; in addition, a term paper of about 15 pages on a topic chosen in consultation with the instructor serves as a final project. The course is conducted in English though students able to read other languages, are able to do some of the readings in the original. May count as elective credit for the major if work is done in Spanish. Enrollment limited to 15 students. Credit 3 units.

A&S TH FA SSP

Span 349. Don Quixote in Translation

Because Cervantes’s masterpiece is considered to be the first modern novel, it is absolutely essential to any understanding of literature as a whole. By way of a close textual reading, this course focuses on all the ways *Don Quixote* recapitulates almost the entire Western tradition and how it anticipates so many of the later developments of the novel. Course conducted in English. Credit 3 units.

A&S TH FA Lit

Span 350. Undergraduate Seminar in Spanish Literature and Culture

Taught in Spanish. Topics vary. Can be repeated for credit. Prerequisite: Span 307D; concurrent registration in Span 308D is recommended.

Section 01. Spanish-American Short Novel.

Study of the 20th-century short novel in Spanish America. Authors include Bombal, Bioy Casares, Hernández, Castellanos, Fuentes, García Márquez, Ferré, Valenzuela, del Río.

Section 02. The Spanish Short Story During the Past 50 Years.

An explosion of story-tellers: the rise and fall and rebirth of a genre. This course reviews a half century of short fiction in Spain, emphasizing the works written since 1970. We focus on the most significant, representative movements in relation to their historical and social contexts. Writers studied include Camilo José Cela, Miguel Delibes, Ignacio Aldecoa, Ana María Matute, Carmen Martín Gaité, Juan Benet, José María Merino, Luis Mateo Diez, Esther Tusquets, Cristina Fernández Cubas, Soledad Puértolas, Javier Marías, Antonio Muñoz Molina and Marina Mayoral. Paper, mid-term and final exams. Credit 3 units.

A&S TH FA Lit

Span 350I. Latin-American Women Writers in Translation

Study of major 20th-century women writers in English translation. We read poems, plays, essays,

and short fiction by authors such as Agustini, Ocampo, Mistral, Bombal, Gambaro, Ferré, Valenzuela, and others. Class conducted in English. Spanish majors do the readings and papers in Spanish. Enrollment limit 25. Credit 3 units.

A&S TH FA Lit

Span 3502. Spanish-American Short Novel

Study of the 20th-century short novel in Spanish America. Authors include Bombal, Bioy Casares, Hernández, Castellanos, Fuentes, García Márquez, Ferré, Valenzuela, del Río. Credit 3 units.

A&S TH FA Lit

Span 3503. Fiction, Crime, and Enigma: Clues to Detective Narrative from the Americas

Ever since the detective story took readers by storm during the last decades of the 19th century, the genre of detective fiction has continued to flourish while undergoing numerous transformations. Latin-American literature is well known for the alternative re-readings of the crime fiction canon by well-established writers who broke canonical rules of classical and hard-boiled detective narrative and both parodied and politicized the genre through endless experimentation. In this course, we focus on the intersection of action and enigma, clues and patterns of a crime, the unraveling of a puzzle and the solution of a mystery in narratives by Poe, Borges, Chandler, Hammett, Valenzuela, Piglia, García Márquez, and others, as well as in selected films based on their works. In English. Credit 3 units.

A&S TH FA Lit

Span 3504. The Spanish Short Story During the Past 50 Years

An explosion of storytellers: the rise and fall and rebirth of a genre. This course reviews a half century of short fiction in Spain, emphasizing the works written since 1970. We focus on the most significant, representative movements in relation to their historical and social contexts. Writers studied include Camilo José Cela, Miguel Delibes, Ignacio Aldecoa, Ana María Matute, Carmen Martín Gaité, Juan Benet, José María Merino, Luis Mateo Díez, Esther Tusquets, Cristina Fernández Cubas, Soledad Puértolas, Javier Marías, Antonio Muñoz Molina, and Marina Mayoral. Prerequisite: Span 307D; concurrent registration in Span 308D is recommended. Paper, mid-term, and final exams. In Spanish. Credit 3 units.

A&S TH FA Lit

Span 3505. Borges in Translation

Comprehensive study of Borges' major works. Analysis of basic themes, philosophical implications, and structural elements present in Borges' poetry, essays, and short stories. We also study a number of film adaptations of Borges' work, as well as a number of texts by writers he has influenced. Credit 3 units.

A&S TH FA Lit

Span 3506. Women Writers of Early Modern Spain

Same as WGS 3506.

This course analyzes early modern women's writings (both secular and religious) by considering socio-historic context, genre studies (autobiography, convent narratives, short prose fiction, poetry, and theater) and feminist criticism. Critical approaches included will consider issues of self-representation and subjectivity, performance, mysticism, life writing, feminist and lesbian utopias, cross-dressing, the body and spirituality, and the role of the Inquisition and confessors in the collaborative process of confessional writing. Class conducted in English. Spanish majors do the readings and papers in Spanish. Credit 3 units.

A&S TH FA Lit

Span 351. Business Spanish

Study of language and structures used in conducting business in the Hispanic world. Actual materials from various businesses—advertising, marketing, real estate, accounting—used. Particular stress on speaking and writing. Prerequisite: Span 308D, or permission of instructor. Credit 3 units.

A&S LA

Span 353. Medical Spanish

Designed for future medical professionals, this course provides students with a complete vocabulary and cultural sensitivity necessary for treating Spanish-speaking patients. While the main focus is oral/aural, written exams, varied reading, and some research are required. Volunteer work required for letter grade in course. Advanced students are given priority. Prerequisite: Span 307D. Credit 3 units.

A&S LA

Span 354. A View from the Southern Cone: Perspectives on Art, Literature, and Culture

This course deals with current issues of cultural, social, political, and literary importance related to the Southern Cone. We study selected texts from Argentina, Chile, and Uruguay as well as contemporary films and drama productions. This course will seek to determine what specifically can be expressed about national identity, globalization, and the environment as these countries face the 21st century. Course requirements include four short essays and a final exam. This course is taught in Santiago, Chile, as part of the Washington University Chile Program. May be repeated for credit. Conducted in Spanish. Credit 3 units.

A&S TH

Span 360. Literature Topics Course in Spain

Taught through the Humanidades program of Carlos III University. Topics vary each semester. May be repeated for credit. Prerequisite: Approval of Washington University's Madrid program director and Carlos III. Credit variable, maximum 3 units.

FA Lit

Span 3601. Cultural Studies Topics Course in Spain

Taught through the Humanidades program of Carlos III University. Topics vary each semester. May be repeated for credit. Prerequisite: Approval of Washington University's Madrid program director and Carlos III. Credit variable, maximum 3 units.

FA SSP

Span 399. Independent Study

Prerequisite: permission of instructor. Credit variable, maximum 3 units.

Span 400. Intensive Translation for Graduate Students I

The first part of a two-semester course sequence in reading and translating Spanish. For graduate students in the humanities, social and natural sciences. Nongraduate students may enroll with permission of the department. Must be followed by Span 401. Credit 3 units.

A&S LA

Span 401. Intensive Translation for Graduate Students II

Continuation of Span 400. For graduate students in the humanities and social and natural sciences. Prerequisite: Span 400. Credit for Span 400 is contingent on completion of Span 401. Credit 3 units.

A&S LA

Span 402. Introduction to Teaching Romance Languages

Same as Fr 4021, Ital 402.

Introduction to teaching Romance languages. Presents a history of language instruction over the past 30 years, then proceeds to combine theoretical discussion of pedagogical principles with prac-

tical experience in supervised, intensive practice sessions with beginning Romance language students. Prerequisite: intermediate/high advanced level in the second language according to the ACTFL Oral Proficiency Scale (as determined by an oral proficiency interview) and currently teaching a practice session or committed to teach one the following semester, or permission of instructor. Credit 3 units.

A&S LA

Span 405W. Major Seminar

An undergraduate seminar. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. Prerequisite: Span 307D and Span 308D and at least two 300-level courses taught in Spanish. Credit 3 units.

Section 01: Tales of Marvel, Fantasy, and Magic in Spanish-American Narrative

This course studies the world of the fantastic, the marvelous and the extraordinary through textual analysis of selected narratives by the following writers from Spanish America: Horacio Quiroga, María Luisa Bombal, Jorge Luis Borges, Julio Cortázar, Gabriel García Márquez, Armonia Sommers, Rosario Ferré, Luisa Valenzuela, Antonio Benítez Rojo. Integrating a wide range of sources (theoretical essays, paintings, film) we undertake an exploration of texts that evolve around obsession, metamorphosis, dream, magic and ritual.

This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 02: The Taste is Telling: Bawdy Short Stories from the Spanish Middle Ages.

This course is structured as a series of comparative readings on the modern versions of a selection of medieval short stories, taken from the most important collections of the Spanish Middle Ages: *Disciplina Clericalis*, *Sendebarr*, *Calila et Dimna*, *Catigos E Documentos Del Reyu Don Sancho*, *El Conde Lucanor*, *The Libro De Buen Amor*, *The Libro De Los Gatos*, *The Libro De Los Exemplos Por A.B.C.*, etc. Special emphasis is given to the cultural aspects that propitiated and surrounded "the story-telling" phenomenon. The readings are oriented toward an understanding of the different ways on which each particular "telling" of a story affects the meaning of what is being told. In order to better enjoy and understand the material of this course, the students should be prepared to literally follow the steps of the best medieval storytellers: reading aloud, rewriting, and retelling their favorite tales. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 03: Nation Building: 19th-Century Spanish-American Writers Confront the Challenge.

The writers of 19th-century Latin America collaborated in the period's efforts of construction and reconstruction by proposing new models for their newly independent countries. This course analyzes the works of the most prominent writers whose works deal with the concepts of nation, identity, class and race. Based on readings of different genres, we explore how these texts prescribe describe and carry out theories that contributed to the building of the Latin American "Nation." Authors include Bello, Heredia, Sarmiento, Martí, Rodó, and Isaacs, among others. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 04: The Feminine as Submission and Subversion: Short Stories by Latin-American

Women. A study of short stories by Spanish-American women to examine the female subjects that are constructed from the various literary strategies. The analysis focuses on the conventions established by the dominant systems to regulate the feminine, such as love, family, the erotic, among other aspects, and how the literary productions confront these conventions. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 05: Absolutely Fabulous? Fable and History in Spanish-American Colonial Narrative. Study of the relationship between fable and history in colonial narratives. Reflection on the role that stories had in larger narratives that allowed digression but in a flowing kind of unity to add a moral or ironic commentary. Sources are the historical and fictional accounts written by Spanish, Mestizos, and Indigenous people during the 16th, 17th, and 18th centuries. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 06: An Island with a View: Contemporary Cuban Literature and Culture. The course seeks to develop a critical perspective from which to study the uniqueness of Cuban cultural production from the Revolution to the present. Examining a variety of forms, from prose fiction and poetry to political speeches, personal testimonies and film, we give special attention to the interplay of such issues as repression and exile, the politics of race and sexuality, censorship and dissent. Readings by Miguel Barnet, Senel Paz, Antonio Benítez Rojo, Guillermo Cabrera Infante, Fidel Castro, Nancy Morejón, Virgilio Piñera. We also examine artwork by Ana Mendieta, and films by Néstor Almendros, Tomás Gutiérrez Alea, and Estela Bravo. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 07: Male or Female: Does the Gender of the Author Matter? In this course we examine works of fiction by male and female Latin-American contemporary writers to establish in what ways the author's gender is inscribed in the text. We read novels and short stories by García Márquez, Castellanos, Fuentes, Garro, Cortázar, Vargas Llosa, Rosario Ferré, Luisa Valenzuela, Felisberto Hernández, Antonio Skármeta, and others. Theories on gender construction are used as a basis for the analyses. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 08: Morality, Mischief, Malfeasance: Literature About Marriage in Early Modern Spain. This course reads a series of short literary works from the early modern period that represent cultural attitudes concerning marriage and the price for both the individual and society of deviation from the norms that regulate it. Primary readings include novelas written by Cervantes and María de Zayas and selected comedias. This is a writing-intensive course, which requires minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 09: The Shell and the Road: A Thousand Years Across the North of Spain. A course is devoted to the study of legends, literary masterpieces, songs, artistic and culinary traditions related to the Road to Santiago. This old pilgrimage route, still followed by pilgrims and adventurers from all over the world, was named the First European Cultural Itinerary by the Council of Eu-

rope, in 1988, and is an essential part of Spain's culture and history. It is studied from the beginning to the end, as an imaginary journey from the little town of Roncesvalles in the Pyrenees, to the Galician city of Santiago de Compostela, with several famous stages such as Burgos, the city of Mio Cid, the monasteries of Santo Domingo de Silos and San Millán de la Cogolla, related to the origins of the Spanish language and the town of Cebeiro, believed by some to be the place that gave birth to the Arthurian legend of the Grail.

This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 10: Representations of Violence in Latin American Narrative. This course analyzes the different representations of violence in Latin American literature. Based on a critical analysis of 19th- and early 20th-century texts, we study how the recognition and legitimization of violence occurs in the context of hierarchical relationships in the society. The role of power and ideology are discussed in texts that define different levels of violence as a cultural manifestation. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 11: Contemporary Chilean Narrative in its Cultural and Historical Context. This seminar explores Chilean narrative of the past 40 years giving special attention to the cultural and historical developments that gave rise to profound changes in society starting in the mid-1960s. We read fiction, memoirs, and testimonies, as well as watch some films that document significant historical events in order to elucidate today's narrative production. We read works by Donoso, Skármeta, Eltit, del Río, Fuguet, Cerda, Valdés, Maturana, and others. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 12: The Spanish Civil War: Literature, Film, and History. A study of ideology, politics, personalities and creative imagination of the Spanish Civil War. The class draw on historical accounts by Hugh Thomas, Walter Brennan, Tunon de Lara; fiction by Cela, Matute, Aub, Goytisolo, Chacel. Comparative readings with Hemingway, Orwell, Malraux; films such as *Land without Bread*, *Los santos inocentes*, *To Die in Madrid*, *The Good Fight*. This is a writing-intensive course, which requires minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 13: Science and Latin American Literary Imagination. This course explores the manner in which Latin-American literature has incorporated science as a theme and as a textual model throughout the 20th century. We examine specifically the various ways in which science is interpreted and expressed as a cultural discourse in narrative, poetry, and film. We also emphasize the dynamic through which literature appropriates the cultural authority science yields in society. Texts include works by Jorge Luis Borges, Angela Gorodischer, Ernesto Cardenal, Mempo Gardinelli, among others. We anticipate being able to interview (via e-mail) some of the authors that we study. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 14: Reflections and Wonders in Colonial Texts. What did Columbus mean when he wrote to the Catholic Kings and what did they understand of what he wrote about the new lands?

How did Bartolomé de Las Casas, Hernán Cortés and Bernal Díaz interpret the peoples and cultures they see? How did the autochthonous writers see themselves and their own culture when translating it to Europeans? In this undergraduate seminar we analyze the interpretation and (re)articulation of "New World" realities and otherness in texts of the 16th and 17th centuries. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 15: Gender, Sex, and Sexuality in Early Modern Spain. Transvestites, lesbians, and pregnant men: early modern Spain is full of the controversial characters that one would expect to see on tabloid TV programs. This seminar examines the construction and representation of gender, sex assignment, and transgressive sexuality in 16th- and 17th-century Spain. The analysis also includes issues of race, empire, and class through close readings of literary, medical, and historical texts as well as an exploration of these themes in visual culture (illustrations and film adaptations). Readings may include selections from María de Zayas' *Desengaños Amorosos*, Cervantes' *Don Quixote*, Huarte de San Juan's *Examen de Ingenios*, Montemayor's *La Diana*, Catalina de Erauso's *Vida I Sucesos de la Monja Alférez*, the interlude *El Parto de Juan Rana*, news pamphlets or *Relaciones de Sucesos*, and other early modern cultural texts. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 16: The Short Stories of Julio Cortázar. A businessman killed by the novel he is reading, a traffic jam that lasts for months, a family that lives with a ferocious tiger, a man who occasionally vomits little live bunny rabbits: These are all parts of the worlds created by the 20th-century Argentine writer Julio Cortázar in his short fiction. In this course, we undertake a series of mindful readings of these stories, selected from across the three-plus decades during which Cortázar wrote them. As we read, we ask: What is happening in this story? What does it do? How does it work? What does it have to do with our world? What can we do with it? How can we live with this story? And, more broadly, what does our experience of these tales tell us about the functions of storytelling in our lives and our worlds? Students are expected to read with care, to respond to their weekly reading experiences with short creative assignments, and to reflect upon their experience of the course in a final course project. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 17: Visual and Textual Representation in Colonial Latin America. The objective of this course is to examine how the continent we know as America gradually took shape after 1492. The urban centers reconfigured to the needs of the Europeans, the new colonized territories conformed to cartographic ideological abstractions, and even the inhabitants were referred to with the erroneous appellative of "Indians." By examining a variety of visual representations such as sculpture, painting, maps, and architecture, among others, and textual ones—chronicles, letters, diaries, travel accounts, and other formats—we study the projections of hegemonic power in the construction of colonial Latin America. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 18: Contemporary Spanish Writing and Society. We read works by various authors representing different regions in Spain and expressing

themselves in diverse genres. Newspapers and other media also are examined. We examine texts from *El País*, *El Mundo*, *La Vanguardia*, *La Revista de Occidente*, as well as magazines devoted to the youth culture. We address changes in the Spanish language, and assess the incursions of globalization into “lo castizo español.” Short weekly writing assignments, an oral presentation, and a final paper required. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 19: Saints, Sinners, Warriors, and Pilgrims: Myths and Legends in the History of Castile. In this course we study some of the most important myths and legends that shaped the History of Castile from the Medieval period to the present. We combine a comparative analysis of various written versions—both old and new—of these myths, with “adaptations” of these narratives in other representational media, such as paintings, sculpture, music, and film. Students are expected to get involved in this course as active readers, creative artists and ingenious Internet surfers. By the end of the course, all students should have acquired sufficient knowledge of these myths and legends to be able to transform themselves into original “re-tellers” of some of their favorite ones. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 20: The Worlds of Julio Cortázar. Julio Cortázar once named a collection of his essays, “Around the Day in Eighty Worlds,” turning the title of Jules Verne’s famous novel inside out. Throughout his work, the 20th-century Argentine writer has created many literary worlds that similarly help us explode our own notions of reality and how we live in and contribute to them. Through a study of a selection of his long and short fiction, we accompany Cortázar on his exploration of the “other sides” of reality. We also examine the effect his work has had on other artists and reflect on all that we find with essays, presentations, an exam, and a video project. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 21: Inquisition, Censorship, Civil Wars. An exploration of Spanish history, its “being and existence.” We study the trajectory from “convivencia” to expulsion; from the Reformation to the counter-Reformation. We study Golden Age authors of the Hegemonic rhetoric that spawns civil wars in Spain. We examine the 1978 Constitution and its role in shaping contemporary Spain. We read short texts by Alfonso X, Quevedo, Cervantes, Galdós, Ortega, Machado, Goytisolo, Rivera, Matute, and others. Such a wide-ranging approach requires much class participation. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 22: The Image and the Word in Contemporary Spanish-American Narrative. This course examines Latin-American texts in which image and word share a contested space, either through insertion of real images into narrative or the literary creation of meta-images that exist only in the narrative realm. The image-centered texts both tell stories and demand a reading that explores affinities, challenges conventional and familiar gaze, and facilitates different “ways of seeing.” The list of authors includes Bioy Casares, Poniatowska, Cortázar, Eltit, Cabrera Infante, Donoso, Valenzuela. Integrating a wide range of sources (critical essays, photographs, paintings,

and films), we study works that trace a trajectory from surrealism to “boom” and “post-boom” Latin American narrative. In Spanish.

Section 23: Sor Juana Inés de la Cruz: Gendering the Spanish-American Baroque. This course explores the life and writings of the Mexican poet, intellectual, and cloistered nun, Sor Juana Inés de la Cruz (1648–1695). We study her poetry, her dramatic works, and her autobiographical and theological writings. Special emphasis is given to the cultural, literary and historical moment in which Sor Juana wrote, specifically as it pertained to her role as a woman writer. We examine 17th-century Mexican convent culture and its role within the Church hierarchy, using it as a backdrop from which to study Sor Juana’s polemical relationship with the ecclesiastical authorities. Also studied is the viceregal society of which Sor Juana, although a cloistered nun, was an active part. In addition, we discuss the importance of the so-called barroco de indias and its relationship to the Spanish Baroque and the impact this had on Sor Juana’s work. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 24: All About Spanish Cinema. This course surveys major themes in recent Peninsular Cinema. While the main focus is on films from the past decade, we spend a few weeks studying the most important trends since the Spanish Civil War. Throughout the course, such issues as representation of the war, resistance to Francoism, nationalism, globalization, immigration and youth culture are addressed; the construction of memory and the representations of violence are underlying themes. In addition to situating the films in a historical, cultural, and political context, we also look at different theoretical approaches to film and visual culture stemming from psychoanalysis, feminism and postcolonial studies, as the course also aims to provide students with the necessary tools to analyze and write about film. The films for the course may include works by Pedro Almodóvar, Alejandro Amenábar, Montxo Armendáriz, Juanma Bajo Ulloa, Iciar Bollaín, Fernando León, Alex de la Iglesia, Pilar Miró, Julio Medem, and Carlos Saura, among others. The course is divided into eight different sections. These sections delineate a progression of literary, historical, and theoretical issues that help the students develop critical positions in relation to films discussed in class. Requirements include active in-class participation, two short papers, and a long final paper. The students also are required to give a 15-minute presentation on a film of their choice. This is a writing-intensive course; 50 percent of the grade must come from written work. In Spanish.

Section 25: The Works of Gabriel García Márquez. This course allows students to make an in-depth study of the leading contemporary Spanish-American novelist and Nobel Prize winner. Emphasis is placed on an examination of García Márquez as a novelist of the Caribbean and the creator of a particular literary world that has had an overwhelming influence on his contemporaries and the younger generations that followed.

Through a chronological selection of his works, which include *One Hundred Years of Solitude* and also his short novels and short stories, we reflect on his development as a writer and the impact this Colombian writer has had on Latin American literature. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 26: Melodrama, Intimacy, and Humor in Latin American Literature and Culture. How do lyrics of tango and bolero have an impact on literary production? How do film and literature

intersect in contemporary representations of hoaxes, violence, and love in Latin America? These and other questions are addressed through readings, music, and film. Among the authors considered are Augusto Monterroso, Manuel Puig, Angeles Mastretta, and Guillermo Cabrera Infante. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 27: Race and Gender in the Literature, Music, and Dance of the Hispanic Caribbean. This course explores constructions of race and gender in 20th-century poetry and narrative of the Hispanic Caribbean with additional focus on the music and dance of this region. We read a broad sampling of works from Cuba (Antonio Benítez Rojo, Lourdes Casal, and Nancy Morejón), Puerto Rico (Rosario Ferré, Luis Palés Matos, Mayra Santos Febres), and the Dominican Republic (Blas Jiménez, Aida Cartagena Portalatín, Sherezada Vicioso). In our study of these texts as well as African-derived music and dance forms such as rumba, bamba, and merengue, we consider the following issues: national identity, the representation of the body, cultural resistance and performance, and the revision of history. Documentary films help to round out our understanding of these topics. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 28. One Big Ghost Story: Memory and Trauma in 20th-Century Spain. This course studies presentation of memory and trauma from the post-war years to the present in Spain through the appearances of ghosts, monsters, vampires, and cyborgs. Following Jo Labanyi, the whole of modern Spanish culture “can be read as one big ghost story.” We take this statement as a starting point and look at spectral appearances in a series of novels and films, and subsequently connect ghosts to other frightful beings and creatures of the night. Readings include, among others, Juan Marsé’s novel *Si Te Dicen Que Caí* and his short story “El Fantasma del Cine Roxy;” Manuel Rivas’s *El Lapiz del Carpintero* and Mercedes Abad’s *Sangre*. Films include Victor Erice’s *El Espíritu de la Colmena*, Pedro Almodóvar’s *Kika*, and Guillermo del Toro’s *El Espinazo del Diablo*. Throughout the course, students learn to use the theoretical background and relevant critical terms that allow them to analyze novels, short stories and visual and popular culture. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 29. Culture and Revolution in Latin America. The first association with the word “Revolution” is with a period of destruction and violence in an armed conflict. However, the most important task of a revolution is the reconstruction of a society and the reinvention of the cultural field in the aftermath of the triumph. The leading question for this course is: how, beyond the changes in the economic, social, and political structures, can a revolutionary government change the cultural practices of a nation? Focusing on three Latin American Revolutions of the 20th century, we try to elucidate how the triumphant governments in Mexico, Cuba, and Nicaragua reshaped cultural field in their respective countries in order to implement the revolutionary ideals and respond to popular hopes and dreams. In general terms, we study the ideologies and discourses directing education, what is the music and literary products that are recognized as “revolutionary,” what is the role of women in the new society, and why and how specific intellectual groups are con-

sidered in the avant garde and what other groups are rejected or suppressed from the emerging structures. In order to analyze this rejection, we also study the texts and works written by the ethnic, sexual, and artistic minorities that are excluded from the benefits of the revolution. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 30. Argentine Cinema. How does a national cinema develop in a country known for a peculiar mixture of artistic achievement and dictatorial repression? In this class we examine the evolution of cinema in Argentina, from its promising beginnings, to its experience during military dictatorships, to the current international success enjoyed by films like *Nueve Reina* and *Hijo De La Novia*. We consider a variety of themes and issues including: cinema and revolution, national trauma and the role of cinema, and the impact of the international film industry on Argentine film. Of special interest is Argentine cinema's response to the most recent dictatorship's so-called "Dirty War." We see films by directors such as María Luisa Bemberg, Leopoldo Torre Nilsson, Fernando Solanas, Luis Puenzo, Héctor Olivera, and Adolfo Aristarain. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 31. The Spanish Symbiosis: Christians, Moors, and Jews. This course explores the contributions of Christians, Muslims, and Jews in the Spanish peninsula, which led to what historians have called a *convivencia* (the peaceful and productive coexistence of these groups in medieval Spain), albeit an arrangement that was often troubled and tested. Among the topics studied are the Visigothic kingdom, the "Golden Age" of Muslim and Jewish Spain, the reconquista (reconquest; a series of campaigns by Christian states to recapture territory from the Moors), the age of Alfonso X, the Inquisition, the conquest of the New World, the expulsion of the Jews and the *Moriscos* (Moors), and the formation of modern Spain. We read historical accounts by Vives, Américo Castro, Benassar. Literary texts in translation include some of the greatest works of the Spanish tradition: *The Cid*, *The Celestina*, Galdós' *Compassion*, Goytisolo's *Count Julian*, Aridjis's *1492*, and excerpts from Fuentes's *Terra Nostra*, among others. Pertinent films are discussed in class. Prerequisite: reading knowledge of Spanish, Hebrew, or Arabic, or permission of instructor. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 32. Saints and Sinners: Women's Writing in the Colonial Latin-American Convent. In this course we examine the phenomenon of women's writing in the Latin-American colonial convent. We study different types of texts—mystical, autobiographical, penitential, literary, and theological. Themes we analyze in this class include the constraints placed on women writers of the period, the problematic relationship between nun author and male confessor, as well as the intersection of convent culture and intellectual expression. We also consider theoretical implications such as the centrality of the female body and sexuality in nuns' writings, as well as concepts of power and subversion. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 33. The Hispanic Inquisition. A study of the roots of the Spanish Inquisition since its inception in 1480; its social and historical manifesta-

tions. Excerpts from Medieval to Contemporary texts are analyzed and placed in a broad cultural context. Inquisition procedures, trials, punishments, and the range of its victims are studied. Differing historical analyses through the ages are confronted: Llorente, Castro, Kamen, Baer, Beinart, Caro Baroja, among others. We also study Inquisition trials in New Spain, Peru, and the Philippines. Pertinent literary texts from all periods in Spain and in the "New World" are added: *The Quixote*, the Picaresque novel, the writings of Carmen Martín Gaité, Matute, Jimenez Lozano, Delibes, Perez Reverte, Aguinis, Fuentes, and others. The rich artistic manifestations of the Inquisition also are examined. Given the broad scope of the course, not all the texts are read in full. Readings in various languages. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 34. Urban Myths: The City in Colonial Latin-American Literature. In this course we study the Colonial Latin-American city in four key moments: the pre-conquest city, the foundational city, the Baroque city, and the 18th-century city. Among some of the themes we examine are issues of race, class, and gender in the city, urban practices, urban planning, and the dialectic between the urban and the rural. We focus predominately on how the city was portrayed in different genres of writing in the various time periods. We study such authors as Cortés, Bernal Díaz, El Inca Garcilaso, Guaman Poma, Balbuena, Gage, Humboldt, and others. Through close readings of these texts we look at the centrality of the city to empire building and how, throughout time, it became a contested space for an emerging American identity, separate from Spain. We also examine other urban images as represented in art and architecture of the period. Cities we consider include Mexico-Tenochtitlan, Lima, Cuzco, Antigua, and Potosí. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 35. The 'Eyes' Have It: Storytelling Through the Image and the Word in Contemporary Spanish-American Narrative. This course examines Latin-American stories in which image and word share a contested space, either through insertion of real images into narrative or the literary creation of meta-images that exist only in the narrative realm. The image-centered texts (works of art, photographs, films, graffiti) tell stories in which popular culture, political events, and digital technologies intersect and call each other into question. The use of images in these readings challenges conventional gaze and facilitates different ways of seeing. The list of authors includes Sábato, Cortázar, Poniatowska, Peri Rossi, Puig, Gorodischer, Eltit, Ferré, Paz Soldán. Integrating a wide range of sources, we study works that trace a trajectory from surrealism to "boom" and "post-boom" Latin-American narrative. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 36. Cuba, Politics, Culture, Literature, Art, and Music. A course on contemporary Cuba, its transformation into a Socialist state. Emphasis is given to U.S.-Cuban relations, especially from 1898 to the present. Readings include biographies of Castro and Ché, films and documentaries, the socioeconomic writing of Carmelo Mesa Lago, the socioliterary books of Gustavo Pérez Firmat, and various literary creations by Pablo Juan Gutiérrez José Kozler, Cristina García, Guillermo Cabrera Infante, Reinaldo Arenas, and others. We study Cuban architecture and art, as well as its music. This is a writing-intensive course, which re-

quires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 38. Crossings and Shipwrecks: Immigration, Exile, and Nostalgia from the Mediterranean to the Atlantic. In this course we discuss the different meanings that Spanish culture attains both within and beyond the Spanish borders. We analyze the ways in which the Spanish present and past are constantly being redefined and study the representations of both Spanish and foreign subjects from a theoretical perspective indebted to postcolonial studies and current perspectives on memory. We study such moments as migration in the late 19th and early 20th century, the Republican exile of 1939, the imperial nostalgia that defined the rhetoric of Francoist dictatorship, the role that international mass culture played in the works produced during the "Movida," and, finally, contemporary definitions of the national and post-national in a globalized world. Readings include works by Rosalía de Castro, Max Aub, María Teresa León, Manuel Vázquez Montalbán, Angelina Muniz-Huberman, Cristina Peri Rossi, Manuel Rivas. We also watch films by Luis Buñuel, Pedro Almodóvar, Iciar Bolaín, and Laura Maña. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 39. Wine and Love: Earthly Pleasures and Their Uses in Medieval Spanish Literature. We devote this course to the study of the representations of food, wine, and love in various medieval Spanish texts. We try to understand how medieval authors used these subjects to discuss other more moral and spiritual aspects of human life. Since food, or the lack of it, was such a prevalent worry, and often an obsession for both rich and poor, lay and religious people, it was only natural to use it as a source of images to give shape to many important concerns and ideas. As we see as we analyze these texts, wine, along with food, was another important item in people's minds and diets and an object of both favorable and unfavorable considerations. The third earthly "pleasure" we study in this course is love, at a time when it was a state of mind and body not necessarily related to marriage. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 40. When Poetry Says What Philosophy Cannot Think: 20th-Century Poetry in Latin America. What does it mean to read poetry today? In this course we deal with the place of the poem within the cultural, political, and philosophical tradition of Latin America. Based on careful readings of 20th-Century Latin American poetry by poets such as Pablo Neruda, Jorge Luis Borges, Octavio Paz, we organize our discussions around the relationship between the poem and thought. We treat the poems as part of a larger cultural background in which they interact with the political, with questions of gender and with the realm of science and technology. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 41. Civil and Uncivil Wars. Spain's 19th-century history consists of a series of civil wars, a result of earlier ideological and social conflicts born at the time of the very creation of the "nation." We touch briefly on the historians and authors who have dealt with these issues, Americo Castro, Galdós, Baroja, Castelar, and concentrate on the Spanish Civil War (1936-39). We read short historical texts, use the writings of Orwell,

Dos Passos, Hemingway to enrich our readings of Francisco Ayala, Carmen Laforet, Ana María Matute, Camilo José Cela, and others. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 42. Exemplary Women and Their Representation in Early Modern Spain. This seminar examines the actions and writings of early modern Spanish women in the public sphere not mentioned in histories of the period, through the recent research of social and cultural historians and non-literary readings. We focus on the activism of known women (Queen Isabel of Castile, the litigious noblewoman of the Mendoza family, the religious reformer Teresa de Jesús, others) and relative unknowns, whose endeavors are exemplary for their strategic use of dominant discourses to achieve material objectives. We also examine how, during the same period, literary works tend to represent female exemplarity quite differently: the agency of women in the public sphere is shown to be illusory and/or unnatural. Female protagonists become heroines and serve as examples for others when they "return" to the private domain of domestic or conventual enclosure, voluntarily ceding their own agency to the power of appropriate authorities. We examine this corrective textual model of female exemplarity and the ambiguities of its construction in a number of famous literary works from the Golden Age (plays, short fiction, conduct literature, poetry), in order to question the relationship between social practices and the textual imagery. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 43. From the Nation to the West: Mexican Poetry and Its 20th-Century Odyssey. Poetry has always held a special place within Mexican culture. Poets have been responsible for some of the major cultural debates, and poetry has been an instrument in defining Mexico itself after the Revolution. Through the exploration of some of the major currents in 20th-century Mexican poetry, we seek to explore the central role that poetry and poets have had in Mexican culture and politics. We also study strategies to read poetry as a culturally meaningful discourse to understand Mexican poetry's major formal and stylistic innovations. Overall, the class seeks a systematic reflection on modern Mexican poetry and its cultural relevance today and of the value of poetry reading in the contemporary world. Students are expected to share and discuss with the class the result of their readings and their writings. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

Section 44. To Die for ... : Tragedy in the Caribbean. The symbolic space that is tragedy is intricately linked with the way societies think about their "date with the law": that is, with their foundation as well as with their founding contradictions. In this course we examine the transformations undergone by classic characters like Elektra, Antigone, Medea, and Hamlet as they make their way through the Caribbean. To the forefront of our discussions are issues of identity, gender, cultural (in)dependence, and justice. We focus on 20th-century drama and fiction from writers such as Virgilio Piñera, Franklin Domínguez, Luis Rafael Sánchez, Giannina Braschi, among others. This is a writing-intensive course, which requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. In Spanish.

A&S TH WI

Span 406. The Spanish Symbiosis: Christians, Moors, and Jews

Same as Med-Ren 406, JNE 406, Re St 406, History 4063.

This course explores the contributions of Christians, Muslims, and Jews in the Spanish peninsula that led to what historians have called a convivencia (the peaceful and productive coexistence of these groups in medieval Spain), albeit an arrangement that was often troubled and tested. Among the topics studied are the Visigothic kingdom, the "Golden Age" of Muslim and Jewish Spain, the reconquista (reconquest; a series of campaigns by Christian states to recapture territory from the Moors), the age of Alfonso X, the Inquisition, the conquest of the New World, the expulsion of the Jews and the Moriscos (Moors), and the formation of modern Spain. We read historical accounts by Vives, Américo Castro, Benassar. Literary texts in translation include some of the greatest works of the Spanish tradition: *The Cid*, *The Celestina*, Galdós's *Compassion*, Goytisoló's *Count Julian*, Aridjis's *1492*, and excerpts from Fuentes's *Terra Nostra*, among others. Pertinent films are discussed in class. Prerequisite: reading knowledge of Spanish, Hebrew, or Arabic, or permission of instructor. Credit 3 units.

A&S CD TH FA Lit SSP

Span 407. Seminar in Spain: Cultural Encounters

The Spanish, Latinos, and non-hispanic North American vis-à-vis "the Other." Designed to study the historical and ideological bases of attitudes and mutual perceptions that inform these three cultures' understanding of each other. Analysis of literary and extra-literary representations of the three identities in question teach students to think critically about the cultural, religious, and political foundations of intercultural perceptions. Washington University students' experiences living in Spain provide a context for them to examine their own attitudes about "hispanidad," as well as to learn about their own cultures (American, "latino") as they are understood from abroad. Study of theoretical concepts of identity, ethnicity, minority, gender, culture, and intercultural communication enable students to participate in practical discussions based on observation and experience with an objective, critical understanding of how they perceive and are perceived by others. Fulfills 400-level literature course requirement for the Spanish major. Prerequisites: Span 307D, Span 308D and two 300-level literature surveys or the equivalent in Spanish. Course taught in Madrid, Spain, through the Washington University Madrid Program. Credit 3 units.

A&S TH

Span 408. Topics in Medieval Literature and Culture

This is a writing-intensive course that requires a minimum of three papers of approximately 4-5 pages length, with rewrites; 50 percent of the grade must come from written work. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. In Spanish. Credit 3 units.

A&S TH WI

Span 411. Advanced Grammar and Syntax

Detailed study of contemporary Spanish syntax. Special attention to fine points of grammar and syntax necessary for effective expression. Composition exercises based on texts selected from the best Hispanic authors. Prerequisite: 6 units of 300-level Spanish, or permission of instructor. Credit 3 units.

A&S LA

Span 4111. Advanced Grammar and Syntax in Spain

Detailed study of contemporary Spanish syntax. Special attention to fine points of grammar and

syntax necessary for communication at the advanced level, taught at Washington University's Carlos III program in Madrid. Prerequisite: placement by exam. Credit variable, maximum 4 units.

Span 412. Bilingual Advanced Grammar and Syntax in Spain

Detailed study of contemporary Spanish syntax for bilingual students, taught at Washington University's Carlos III program in Madrid. Prerequisite: placement by exam or program director. Credit 3 units.

Span 413. Curriculum and Instruction in Modern Foreign Language

Same as Educ 407.

A&S LA FA SSP

Span 416. Introduction to Hispanic Linguistics
Same as Ling 4161.

An introduction to the scientific study of the Spanish language, this course focuses on each of the major linguistic subsystems, including the sound system (phonetics and phonology), word formation (morphology), formation of phrases and sentences (syntax), and the use of the language to convey meaning (semantics and pragmatics). At each level of analysis, selected comparisons are made between Spanish and English and between Spanish and other languages. The course also examines different historical, regional, and social varieties of Spanish and situations of Spanish in contact with other languages. Preceptorial for undergraduates only. Credit 3 units.

A&S LA

Span 417. Spanish Phonetics, Phonology, and Dialectology

Same as Ling 4171.

This course, conducted in Spanish, explores the linguistic varieties of the 21 Spanish-speaking countries from both a historical and a synchronic perspective. The course begins with a traditional look at Spanish phonetics and phonology, with all students memorizing and utilizing the International Phonetic Alphabet. Course readings and discussions extend beyond the descriptive and include a search for the sources of language variation within the Spanish-speaking world. Particular attention is devoted to language contact and bilingualism. Students read in areas such as history, sociolinguistics, dialectology, and sociology, as well as traditional linguistic studies, in designing their projects concerning phonetics, phonology and dialect diversification. Credit 3 units.

A&S LA

Span 418. Afro-Hispanic Culture and Literature

A study of black authors and cultural issues in Spanish-speaking countries. Primary emphasis on countries, such as Cuba and Colombia, with sizable black populations. Conducted in English. Reading knowledge of Spanish required. Credit 3 units.

A&S TH FA Lit

Span 419. Feminist Literary Theory

Same as WGS 419.

A&S TH

Span 420. Captivity and Its Consequences: Horror, Desire, and Nostalgia in Colonial Narratives

The objective of this course is to examine the formation and evolution of narratives of captivity in Latin-American texts and their visual representations from the first indigenous and European contacts to the end of the colonial period. Prerequisites: Span 307D and Span 308D and at least two 300-level courses taught in Spanish; in Spanish. Credit 3 units.

A&S TH

Span 4211. Spanish-American Literature of the Colonial Period

A selective survey of the literature of the three centuries between the first encounters of the European and American Indian cultures and independence from Spain. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates only; in Spanish. Credit 3 units.

A&S CD TH **FA** Lit

Span 423. Trotaconventos, Celestina and Co.: Go-Betweens, Love, Witchcraft, and Other Related Subjects

In this course we study how the literary figure known as the “go-between” evolved in Spanish literature, from its origins in Roman literature, the *Cantigas* and the *Exempla*, to its culmination in the *Libro de Buen Amor* and the *Tragicomedia de Calisto y Melibea*, also called *La Celestina*. We also read a selection of texts that were influenced by *Celestina*, and examine how their authors recreated *Celestina*'s characters and theme. Our analysis of the go-between leads us to a series of reflections about various related subjects, including the literary representation of love, the uses of language and magic as instruments of manipulation and power, and the ethical problems associated with such uses. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. Preceptorial for undergraduates only; in Spanish. Credit 3 units.

A&S TH

Span 426. Latin-American Theater

Same as IAS 4260, LatAm 416.

Survey of dramatic and theatrical currents from the late 19th-century to the present. The course focuses on tracing the themes of nationalism, cultural identity, immigration, class displacement and the effects of consumerism in representative plays from the Rio de la Plata, Chile, Colombia, and Mexico. The course studies manifestations of the sainete, the grotesco criollo, theater of the absurd, as well as the popular independent theater movements of the 1960s and '70s. Theoretical works studied include those of Brecht, Piscator, Esslin. Authors studied: Dragún, Payró, Cossa, Wolff, Sánchez, Díaz, Carballido, Gambaro, Buenaventura. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates only; in Spanish. Credit 3 units.

A&S SD TH **FA** AH

Span 4281. Creative Difference: Reclaiming Spanish-American “Traditional” Novel

Same as LatAm 428, IAS 4280.

This class focuses on a selection of aesthetically and socially representative 19th- and early 20th-century Spanish-American novels. Integrating a wide range of sources (critical essays, paintings, film), we explore abolitionist issues in Sab (Cuba), the reinvention of Amerindian legacies in *Aves Sin Nido* (Peru), and the different facets of modernization and nation-building in *Los de Abajo* (Mexico), *La Voragine* (Colombia). You should finish the course with a broader knowledge of Spanish-American literary history, a deeper understanding of textual representations of gender, class, and multiethnic identities, and a sharper awareness of your potential as a reader and critic. Significant selections of pertinent criticism and theory are required of graduate students. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S SD TH **FA** Lit

Span 4282. Voice Into Print: The Art of Storytelling in Spanish-American Short Story

The short story has been a central part of the extraordinary originality and vitality of Spanish-American writing, and it enjoys great popularity among scholars and general public alike. Integrating a wide range of sources (critical essays, paintings, film), this course brings together the best examples of the genre that span over a hundred years of the history of Spanish-American literature and exemplify a variety of themes and forms: from the ordinary to the fantastic, from the realist to the imaginative. Special emphasis is placed on the questioning of such binary oppositions in the most recent writings, particularly from the Caribbean, promoting the syncretic or “transcultured” forms of expression. Students familiar with the works of Quiroga, Borges, Rulfo, Cortázar, Ferré, and Valenzuela will be delighted to discover many vibrant new voices, including Peri Rossi, Sommers, and Moyano, or to explore the less-known terrain of minority writings. Significant selections of pertinent criticism and theory are required of graduate students. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates only; in Spanish. Credit 3 units.

A&S CD TH **FA** Lit

Span 4291. The Politics and Poetics of Spanish-American New Novel

When Spanish-American writers gained acclaim in the world literary scene in the so-called “boom” of the 1960s, their spectacular success was often linked with the so-called magical realism that draws upon the oral and written tradition of both European and regional heritage (African, Amerindian) and shapes them to forge a uniquely Latin-American poetics. Through theoretically informed approach this course offers an overview of the most acclaimed Spanish-American novels published between 1950 and 1970, with special attention given to the divergent cultural legacies and political uses of “magical realism.” Specific notions of New World/Old World, modernization/tradition, nation building/otherness are explored in novels such as: *Los Pasos Perdidos* by Carpentier (Cuba), *Pedro Paramo* by Rulfo (Mexico), *La Ciudad y Los Perros* by Vargas Llosa (Peru), *Los Recuerdos del Porvenir* by Garro (Mexico), *La Traicion de Rita Hayworth* by Puig (Argentina) and *Cien Años de Soledad* by García Márquez (Colombia). Significant selections of pertinent criticism and theory are required of graduate students. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates only; in Spanish. Credit 3 units.

A&S CD TH **FA** Lit

Span 430. Latin-American Essay

Same as IAS 430, LatAm 430.

Study of the principal movements and outstanding figures in the Spanish-American essay from the colonial period to the present. Sor Juana, Sarmiento, Alberdi, Martí, Rodo, Paz, Freire, Ortiz, Sabato, H.A. Murena. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates only; in Spanish. Credit 3 units.

A&S TH **FA** Lit

Span 431. Latin-American Poetry I

Same as LatAm 431, IAS 431.

Survey of the major figures of Latin-American poetry from the colonial period to modernism. Poets to be studied include Sor Juana, Caviedes, Avelaneda, Martí, Dario, Silva, Najera. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-

hour preceptorial for undergraduates only; in Spanish. Credit 3 units.

A&S TH **FA** Lit

Span 432. Latin-American Poetry II

Same as IAS 4323, LatAm 432.

Survey of contemporary Latin-American poetry, “postmodernismo” to the present. Poets to be studied include González Martínez, Vallejo, Neruda, Huidobro, Paz, Parra, Orozco, Pizarnik, Cardenal, Belli. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates only; in Spanish. Credit 3 units.

A&S TH **FA** Lit

Span 433. Spanish-American New Novel

This course offers a critical overview of the most acclaimed Spanish-American novels published between 1950 and 1970. The following texts are read critically with special attention given to the problematics of canonicity and formal experimentation: *Los Pasos Perdidos* by Carpentier, *Pedro Paramo* by Rulfo, *La Ciudad y los Perros* by Vargas Llosa, *Los Recuerdos del Porvenir* by Garro, *La Traicion de Rita Hayworth* by Puig and *Cien Años de Soledad* by García Márquez. Significant selections of pertinent criticism and theory are required of graduate students. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates only; in Spanish. Credit 3 units.

A&S TH **FA** Lit

Span 434. The 19th-Century Spanish Novel

Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates only; in Spanish. Credit 3 units.

A&S TH **FA** Lit

Span 435. Mediterranean Cultural Studies

This course is a cultural studies seminar for advanced undergraduate and graduate students. Taking a Mediterranean perspective as a background (and we certainly spend some time discussing what such a perspective entails), we investigate the different historical, political, and cultural crossings that have been taking place and are taking place at the Iberian Peninsula. Rather than a historical or chronological survey, the different sections of the course focus on the questions and conflicts that arise in these different Mediterranean encounters. These appear articulated in a series of texts that include literature, film, historical documents, song, and art. Even though we mainly concentrate on texts from the second part of the 20th century, the historical background, particularly regarding the Arab and Sephardic presence in Spain, will be highlighted throughout the semester. The interdisciplinary approach of this course allows students to explore human and Mediterranean geography, analyze different genres, and, finally, discuss present problems and debates from a historical perspective. Some of the issues addressed include: the question of a Mediterranean perspective, Arab and Sephardic Spain, the Mediterranean during the Spanish Civil War and World War II, old and new migrations, sexuality, globalization and tourism. Course requirements include short papers at the end of every section and a final paper for the undergraduate students, a presentation on a related topic and research paper for graduate students. Prerequisites: Span 307D and Span 308D and at least two 300-level courses taught in Spanish. One-hour preceptorial for undergraduates only; in Spanish. Credit 3 units.

Span 436. Spanish-American Fiction: 1970 to the Present

Study of Spanish-American narrative from the early 1970s to the present. Includes both novels by writers established before the 1970s (Vargas

Llosa, García Márquez, Fuentes) and writers associated with the newest novelistic trends (Eltit, Fuguet, Martínez, Paz, Valenzuela). Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates only; in Spanish. Credit 3 units.

A&S TH FA Lit

Span 4361. Latin-American Prose Fiction: 1975 to Present

Study of Latin American narrative from the late 1970s to the present. Includes both recent novels of writers established before the '70s (Vargas Llosa, García Márquez, Fuentes) and younger writers associated with the post-"boom" phenomenon. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates only; in Spanish. Credit 3 units.

A&S TH FA Lit

Span 439. Topics in History of Developing Areas II

Same as History 428.

A&S TH FA SSP

Span 4471. Spanish-American Women

Writers I

Same as IAS 4471.

A study of women's writing from the turn of the century to 1970. Readings include novels, short stories, poetry, essays, and autobiographical texts. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates only; in Spanish. Credit 3 units.

A&S SD TH FA Lit

Span 4472. Spanish-American Women

Writers II

Same as WGS 4472, IAS 4472.

A study of contemporary women's writing from 1970 to the present within a feminist theoretical framework. Topics include the construction of gender, female subjectivity, love, and power, women and politics, literary strategies, etc. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates only; in Spanish. Credit 3 units.

A&S SD TH FA Lit

Span 450. Special Topics in Spanish Literature and Culture

Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates only; in Spanish. May be repeated for credit. Credit 3 units.

A&S TH FA Lit

Span 4502. Latin-American Narrative in Film

Analysis and discussion of a select group of films, focusing on their literary origins or their peculiar elaboration of critical conflicts in contemporary Latin American society. Films by Littin, Puenzo, Lombardi, Skármeta, Solanas, Gutiérrez Alea, Lilienthal, and others. Novels by Vargas Llosa, Carpentier, Amado, Puig, Skármeta, and Soriano. Course conducted in English. Does not fulfill 400-level literature requirement. Credit 3 units.

A&S TH FA AH

Span 4503. Latin-American Film: Argentine Cinema and the Dirty War

We begin with an introduction to film criticism, exploring what it means to analyze film critically in Spanish. Then, using the Argentine cinema of the 1980s and '90s as a case study, we investigate the strategies used by film as it reacts to political and social power. Topics include: the cinematic adaptation of literary sources, humor and social critique, film and film technique as a political tool, film and censorship, and film as both cultural arti-

fact and artistic expression. Texts by authors including Monaco, Soriano, Vargas Llosa. Films by directors including Bemberg, Puenzo, Oliveira, Aristarain, Mosquera, and Saura. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. Conducted in Spanish. Credit 3 units.

A&S TH FA AH

Span 451. Medieval Spanish Literature

Same as Med-Ren 454.

Study of the development of the principal literary traditions of medieval Spain, emphasizing major genres, themes, and styles. Consideration of various critical approaches and responses to medieval texts. Lectures, papers, and class reports. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S TH FA Lit

Span 453. Survey of 18th-Century Latin-American Narrative

Exploring new ways of thinking, scientific observation and traveling, historiography, and the organization of knowledge. Analysis and discussion of a variety of 18th-century Latin-American narratives such as conventual writing by women, memoirs, travel, scientific writing, and newspaper articles, to understand how that century's attempts to compile, question, seek, build, and reform came about. The narratives are regarded in their historical context and in a dialogue with some of the most recent literary studies about 18th-century Latin America. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates. Credit 3 units.

A&S TH FA Lit

Span 4533. Narratives of Fear: Violence in Latin-American Literature

Same as LatAm 4533, IAS 4533.

This course analyzes different representations of violence in Latin-American literature. Based on a critical analysis of 19th- and early 20th-century texts, we study how the recognition and legitimization of violence occurs in the context of hierarchical relationships in the society. Also we study how the literary images of bandits, pirates, thieves, and assassins become the counter discourse of the views of progress sustained by the hegemonic powers. The role of power and ideology is discussed in texts that define different levels of violence as a cultural manifestation. Credit 3 units.

A&S TH FA Lit

Span 455. History of the Language

Same as Med-Ren 455.

A study of the evolution of Spanish and its dialects from Latin to contemporary usage. Knowledge of Latin helpful but not required. Prerequisites: Span 307D, 308D. Credit 3 units.

A&S LA

Span 456. Romance Philology

Same as French 456.

A&S LA

Span 458. Gender, Politics, and Writing in Women's Fiction of the Post-Franco Era

Same as WGS 4581.

This course focuses on the narrative fiction of Spanish women of the post-Franco era: those who began to publish shortly after Franco's death and continue to write into the new century (Esther Tusquets, Cristina Fernández Cubas, Rosa Montero, Carmen Riera, and Adelaida García Morales), as well as the more recent crop of writers who emerged on the literary scene in the past decade (Nuria Amat, Lucía Etxebarria, and Espido Freire). We consider the works of these women within their cultural, historical, and political contexts, addressing issues such as the representation

of gender and sexuality, the cultural impact of feminism, nationalism, and globalization, and the influence of the publishing industry and the market on literary production. Whenever available, film adaptations of these literary works are used in conjunction with the readings. Prerequisites: Span 307D and Span 308D and at least two 300-level courses taught in Spanish. One hour preceptorial for undergraduates only. In Spanish. Credit 3 units.

A&S TH FA Lit

Span 459. 16th- and 17th-Century Drama

Same as Med-Ren 459.

Study of the development of Golden-Age Spanish theater from the brief court comedies, religious, and popular plays of the 16th century to fascinating and disturbing masterpieces of the 17th century that represent seduction, wife murder, betrayal, mistaken identity, political uprising, and metaphysical angst. Authors include: Lope de Vega, Tirso de Molina, Calderón de la Barca, Ruiz de Alarcón, Ana Caro, and María de Zayas. Prerequisites: Span 307D and Span 308D and at least two 300-level courses taught in Spanish. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S TH FA Lit

Span 461. Cervantes: Don Quixote

Same as Med-Ren 461.

Detailed study of Cervantes' masterpiece, *Don Quixote*. Lectures, oral reports, textual analysis, and discussion. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S TH FA Lit

Span 4611. The Golden Age Novelas

A detailed study of the novela, or novella, genre in 17th-century Spain, including selected novelas ejemplares by Cervantes and selected novelas amorosas and desenganos amorosos by María de Zayas. The course considers the problem of exemplarity, the representation of transgression or deviancy, literary tradition, and socio-historical context in these works. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S TH FA Lit

Span 462. 16th- and 17th-Century Prose

Same as Med-Ren 4621.

Reading of works that are groundbreaking in the formal development of Golden Age Spanish literature and in the representation of ideas concerning national and individual identity during the imperial period. To include *Dialogo de la Lengua*, *Lazarillo de Tormes*, *Diana*, and selected works by Guevara, Cervantes, Quevedo, and Zayas. Seminar discussions and research paper. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S TH FA Lit

Span 463. 16th- and 17th-Century Poetry

Same as Med-Ren 463.

Classical Spanish poetry during the Renaissance and the baroque periods. Poets range from the Marques de Santillana and Garcilaso de la Vega to Luis de Gongora, San Juan de la Cruz, and Francisco de Quevedo. Movements and trends explored include the tradition of courtly love, culteranismo, Spanish mysticism, and conceptismo. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S TH FA Lit

Span 464. Self-Representation and Picaresque Fiction in Early Modern Spain

This course investigates self-representation through the figure of the picaresque and fictional autobiography in the representative works of the Spanish picaresque genre (Lazarillo, Guzman de Alfarache, and El Buscon). We also examine the figure of the picaresque in novels with female protagonists such as *La Lozana Andaluza* and *La Picara Justina* (as well as a short story by María de Zayas) and consider the relation of the picaresque to women's roles in Spanish fiction and culture. This course considers aspects of gender, ethnicity, class, and desire in the socio-historical context of picaresque fiction as well as narratological approaches to these texts. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S TH FA Lit

Span 465. The Spanish Trickster

A study of Spain's major picaresque novels in the Golden Age in the context of early modern Europe. Translations of works such as the *Lazarillo and Buscon*, as well as selected foreign imitations and parodies of the Spanish picaresque from the 17th and 18th centuries. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. Does not fulfill the 400-level literature requirement for the Spanish major but is applicable to other credit required for the major. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S TH FA Lit

Span 466. Second Language Acquisition

Same as Ling 466.

A&S LA

Span 467. Grammar and Vocabulary Acquisition

Same as Ling 467, PNP 467, Span 467.

This course examines theoretical and instructional implications of research on grammar and vocabulary acquisition. Topics include making form-meaning connections during language learning; developmental stages; the role of input and input processing; explicit and implicit methods of grammar instruction; pertinent factors in vocabulary acquisition, such as learning context and processing resource allocation; and comparisons of incidental and direct vocabulary instruction techniques. Major theories of language acquisition (e.g., nativism, emergentism) are critically examined in light of the research presented, and research findings are applied to instructional practices. Credit 3 units.

A&S LA

Span 468. Don Quixote

A close reading of the English translation of Cervantes' masterpiece, with special attention given to the European literary context. Conducted in English. Credit 3 units.

A&S TH FA Lit

Span 469. Reading and Writing in a Second Language

Same as Ling 469, PNP 469, Educ 4691, Span 469, Ling 469.

This course, taught in English, extends issues in second language (L2) literacy beyond pedagogy by examining the wide range of theoretical and research issues, both historical and current. Literacy acquisition among second language learners involves a number of variables including both cognitive and social factors. Topics to be discussed in class include: individual learner differences; the extent to which reading and writing are interrelated; text types and literary forms; literacy and social power; and universal cognitive operations. Students discuss how to bridge research and practice, and they create 12 reading and writing activi-

ties that are grounded in empirical investigations. Credit 3 units.

A&S TH

Span 471. Borges

Comprehensive study of Borges' major works. Analysis of basic themes, philosophical implications, and structural elements present in Borges' poetry, essays, and short stories. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S TH FA Lit

Span 472. 19th-Century Novel

This course carries out a critical re-examination of the concept of "realism" through a close analysis of representative narrative works of 19th-century Spain. Texts to be covered include canonical novels by Galdós, Clarín, Pardo Bazán, and Valera, as well as selections of non-canonical popular novels by women. These works are examined through the lens of both 19th-century literary and cultural discourses (including articles and essays by the novelists themselves), and of 20th-century literary and cultural theories. Issues to be explored include: the critical reappraisal of "realism"; intersections between fictional and historical discourse; the problems of historiography; language and the self-reflexive text; representations of gender, sexuality, and ethnicity; literature and national identity. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S TH FA Lit

Span 473. Romanticism

The origins of romanticism as a movement explored before reading and analyzing key works by the main Spanish romantic writers: Cadalso, El Duque de Rivas, Espronceda, Larra, Mesonero Romanos, Becquer, Campoamor, and Zorrilla. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S TH FA Lit

Span 475. The Other in Contemporary Spanish Fiction

An examination of the various manifestations of "the other" in works of Delibes, Perez Reverte, Matute, Goytisolo, Riera, Atxaga. Aspects study include history, culture, religion, language, and gender. Ancillary readings treat theoretical as well as critical issues. Two or three short papers (2-3 pages), and a longer paper with specific installments and revisions due during the semester (undergraduates, 15 pages; graduates, 20 pages). Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates only; in Spanish. Credit 3 units.

A&S TH FA Lit

Span 479. Generation of 1898: Theater and Poetry

Analysis of works by Azorin, Unamuno, Baroja, Maeztu, and Valle-Inclán. Various approaches to each work encouraged, and the theory of "generations" questioned. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S TH FA Lit

Span 480. The Generation of '98

An analysis of the Spanish-American War, the warring parties, and particularly of the literature it created in Spain by authors such as Unamuno, Machado, Valle-Inclán, Azorin, and Baroja. The "desastre" led to introspective analyses of philoso-

phy, education, and history. It attempted to rediscover the Hispanic ethos, to re-create its landscape poetically, and to become European without losing its Spanish roots. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S TH FA Lit

Span 481. Modern Drama

Readings from 19th- and 20th-century playwrights such as Zorrilla, Benavente, Valle-Inclán, Lorca, Buero-Vallejo. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S TH FA Lit

Span 486. 20th-Century Novel

A study of the novel in 20th-century Spain, focusing on the contemporary period. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S TH FA Lit

Span 487. Discourses on Gender in 19th- and 20th-Century Spain

Same as WGS 4877.

This course focuses on discourses on gender, from the late 19th century to the present in the context of feminism in Spain. We explore the social, political, and cultural role of Spanish women (writers) within their specific historical contexts, with a special attention to their struggle to construct a new female subjectivity through their writings. To this end, their narrative fiction (novels, short stories) are read in conjunction with nonfictional writings (essays, journalism, etc.). Authors to be studied include 19th-century proto-feminists such as Emilia Pardo Bazán and Concepción Arenal; early 20th-century writers such as Carmen de Burgos, Margarita Nelken, and other female activists of the Republican period; and women writers of the post-War and post-Franco eras. Prerequisites: Span 307D and Span 308D and at least two 300-level courses taught in Spanish. One-hour preceptorial for undergraduate students; in Spanish. Credit 3 units.

A&S SD TH

Span 490. Spanish Women's Fiction on the Edge of the Millennium

The course focuses on the narrative fiction of Spanish women of the post-Franco era: those who began to publish shortly after Franco's death and continue to write into the new century (Cristina Fernández Cubas, Rosa Montero, Soledad Puértolas, and Carme Riera), as well as the more recent crop of writers who emerged on the literary scene in the past decade (Nuria Amat, Lucía Etxebarria, Belén Gopegui). Not only are the aesthetic innovations of these writers considered, but also their preoccupation with the following socio-political and cultural issues: connections between gender, sexuality, and writing; their response to feminist literary criticism and politics; and their relationship to the market and consumer society in the context of globalization. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S SD TH FA Lit

Span 491. 18th- to 19th-Century Literature

Readings in various genres covering significant figures and works in neoclassicism, romanticism, and realism. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S TH FA Lit

Span 494. 20th-Century Poetry

Examination of 20th-century Spanish poetry from Machado and Juan Ramon Jimenez to the Generation of '27 and younger poets. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S TH **FA** Lit

Span 495. Honors

Students who meet the requirements work closely with a member of the faculty on an individual basis on a project of mutual interest. Emphasis on a tutorial on a regular basis. Prerequisite: permission of Director of Undergraduate Studies. Preregistration not permitted. Credit variable, maximum 3 units.

A&S TH

Span 498. Contemporary Spanish Novel

A study of modern novels by established authors, such as Benet, Goytisolo, and Martin Gaité, and new figures such as Landero, Millas, and Puertolas. Prerequisites: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S TH **FA** Comp

Span 499. Contemporary Spanish Novel II: 1965 to Present

A study of modern novels by established authors, such as Benet, Goytisolo, and Martin Gaité, and new figures such as Landero, Millas, and Puertolas. Prerequisite: Span 307D and Span 308D and at least two 300-level literature courses taught in Spanish. One-hour preceptorial for undergraduates; in Spanish. Credit 3 units.

A&S TH **FA** Lit

Span 500. Independent Study

Prerequisites: senior or graduate standing and permission of the chair of the department. Credit variable, maximum 3 units.

Russian

James V. Wertsch

Marshall S. Snow Professor in Arts & Sciences
Ph.D., University of Chicago

Associate Professors**Michael Finke**

Ph.D., Indiana University

Max J. Okenfuss

Ph.D., Harvard University

Senior Lecturer**Mikhail Palatnik**

M.A. equivalent, University of Chernovtsy
M.A., Washington University

Emerita Professor**Milica Banjanin**

Ph.D., Washington University

The Russian program at Washington University offers four years of language instruction and a variety of courses on Russian literature, culture, and history from medieval times to the present day.

Language courses provide exposure to Russian in its contemporary, everyday use. Beginning and intermediate students study in intensive courses combining master classes and practice sessions and rapidly acquire basic speaking skills and a solid foundation for further work. Students successfully completing the fourth-year course will have developed proficiency adequate for seeking employment or pursuing graduate studies where the language is required. All levels of instruction employ audiovisual materials, including video instructional films, videotapes of Russian television news programs, and Internet resources.

Literature courses in translation depart from detailed studies of specific authors, literary periods, and/or social and historical themes to arrive at a broader understanding of Russian culture. They place great emphasis on the improvement of analytical writing skills. Courses treating the full range of Russian history—Medieval, Imperial, Soviet, and Post-Soviet—are offered in the Department of History, as are a variety of more specialized topics courses.

A minor in Russian is administered through the International and Area Studies Program, which also offers a minor in Russian Studies/International and Area Studies. Students also are encouraged to consider majors in International Studies, European Studies, Comparative Literature, and History (see the entries for these programs in this *Bulletin*), all of which can be pursued with a focus on Russia and the former Soviet Union. Students thus have the option of pursuing thorough knowledge of the Russian language and a deep insight into Russian culture focused primarily through the lens of literature, film, and other media, or of acquiring a basic reading and conversational competence in the Russian language while approaching Russia and the former Soviet Union from other disciplinary or multidisciplinary perspectives.

plinary perspectives.

The Russian Minor: The minor may be completed with four years of language study, or with a minimum of two years of language study and three courses in Russian language, literature, or culture at or above the 300 level, with at least one of these in literature or culture.

The Russian Studies/International and Area Studies Minor: For a minor in Russian Studies/International and Area Studies, you are required to complete 15 graded credits plus four semesters (or its equivalent—see the description under International and Area Studies in this *Bulletin* for details) of Russian language. 6 units may be at the introductory level; at least three of those units must be chosen from: Introduction to European Studies OR Crossing Borders I OR Crossing Borders II. At least 9 units must be at or above the 300 level, with course work focused on Russia, as determined in consultation with the minor adviser. No more than 3 units may be from a semester of study abroad (6 units from a year of study abroad). Some units earned through advanced level language study (300 or above) may be applied to the minor at the discretion of the adviser. Twelve of the 15 credits must be unique to the IAS minor (i.e., not counted toward any other major or minor).

Study Abroad: All students are encouraged to participate in one of the Washington University study abroad programs in St. Petersburg, Russia. Semester options include both language and area-studies programs, while the summer program is language-focused only; there are programs available for students at any language level, including beginning. The University's programs in St. Petersburg are conducted under the auspices of CIEE (Council for International Educational Exchange), the longest running such program in Russia. Financial aid may be available for these programs through both Washington University and CIEE.

Undergraduate Courses

Russ 101D. Elementary Russian

Same as Russ St 101D.

Interactive multimedia course designed to emphasize spoken language; includes the very latest video materials geared toward situations in contemporary post-Soviet Russian life. Also provides thorough understanding of fundamental grammar and develops reading and writing skills. Five class hours per week, plus an additional hour for conversation, review and testing. Credit 5 units.

A&S LA

Russ 102D. Elementary Russian

Same as Russ St 102D.

Continuation of 101D. Interactive multimedia course designed to emphasize spoken language; includes the very latest video materials geared toward situations in contemporary post-Soviet Russian life. Also provides thorough understanding of fundamental grammar and develops reading and writing skills. Five class hours per week, plus an additional hour for conversation, review, and testing. Credit 5 units.

A&S LA

Russ 211D. Intermediate Russian

Same as Russ St 211D.

Designed to solidify students' control of Russian grammar and advance conversational, reading, and

writing skills. Includes video materials produced in Russia and conveying an up-to-the-minute picture of contemporary Russian life. Credit 4 units.
A&S LA

Russ 212D. Intermediate Russian

Same as Russ St 212D.

Continuation of 211D, completes comprehensive review of Russian grammar and further advances conversational, reading, writing, and listening skills. Revised textbook with new audio and video materials that convey an up-to-the-minute picture of contemporary Russian life. Credit 4 units.

A&S LA

Russ 215C. Introduction to Russian Civilization

Same as Russ St 215C.

Overview of main currents and developments in Russian culture and the arts from earliest records to present day. Folk literature and art, architecture, dress, music, literature, film. Topics include pre-Christian pagan beliefs, the introduction of Orthodox Christianity, the "Tatar yoke," reactions to the "Europeanization" of Russia, the self-identity of a people neither European nor Asian. Are the radical changes taking place in Russia today a complete break with the past or a reemergence of certain cultural constants? Knowledge of Russian language not required. Open to freshmen. Credit 3 units.

A&S CD TH FA SPS

Russ 299. Internship

Credit variable, maximum 6 units.

Russ 322D. Third-Year Russian

Same as Russ St 322.

Designed to develop students' abilities in the contemporary spoken language. Conversational practice is combined with a review of grammatical concepts. Students also work with newspapers, read literary texts, and write compositions. Prerequisite: Russ 212D or equivalent. Credit 3 units.

A&S LA

Russ 324D. Third-Year Russian

Same as Russ St 324.

Designed to develop students' abilities in the contemporary spoken language. Conversational practice is combined with a review of grammatical concepts. Students also work with newspapers, read literary texts, and write compositions. Prerequisite: Russ 322D or equivalent. Credit 3 units.

A&S LA

Russ 331C. Masterpieces of 19th-Century Russian Literature

Same as EuSt 3316, Russ St 331C, IAS 3316.

Survey of the chief literary movements and genres in 19th-century Russia through writings of its greatest authors. Works by Pushkin, Lermontov, Gogol, Turgenyev, Dostoevsky, Tolstoy, Leskov, Chekhov and others, read in translation and treated in historical and literary context. Emphasis on polemical dialogues between authors and engagement with vexing issues of the day. Open to freshmen. Conducted in English. Credit 3 units.

A&S SD TH FA Lit

Russ 339C. 20th-Century Russian Literature and Culture

Same as Russ 339, IAS 3390, Russ St 339C, EuSt 3390.

A survey of major writers and literary movements of 20th-century Russia. Literary innovation and political propaganda examined as responses to the writer's role in society. Additional focus on film; popular culture; new sensibilities; the recovery of literary past; and contemporary women's fiction. Texts will be treated in literary and historical contexts. Readings in English may include Babel, Blok, Brodsky, Bulgakov, Gladkov, Mayakovsky, Pasternak, Solzhenitsyn, Tolstaya, Trifonov, Zamyatin, Zoschenko. No prerequisites. Open to freshmen. Credit 3 units.

A&S CD TH FA Lit

Russ 348. Dostoevsky and Tolstoy: From Novel to Film

Same as Film 348, Russ St 348.

What happens to the narratives of the two greatest Russian novelists of the 19th century in translation from one artistic medium to another? A selective survey of Tolstoy and Dostoevsky, in which readings (in English) are accompanied by screenings of their best (and excerpts from a few of their most outrageous) cinematic renditions from around the world. What can we learn about each individual medium through this juxtaposition? What happens to Tolstoy and Dostoevsky when they are translated from their original cultural and historical contexts into other, often quite alien ones, including our own? Freshmen welcome. Credit 3 units.

A&S TH FA Lit

Russ 350C. The 19th-Century Russian Novel

Same as IAS 3500, Russ St 350C, EuSt 3500.

The 19th-century "realistic" novel elevated Russian literature to world literary significance. Close readings in English translation of masterpieces by Pushkin, Lermontov, Gogol, Dostoevsky, Turgenyev, and Tolstoy, guided by an investigation of their cultural contexts and a critical perspective on the notion of realism. Credit 3 units.

A&S SD TH WI FA Lit

Russ 351C. Literature and Psychoanalysis: Russia and the West

Same as Comp Lit 349C, Russ St 351C.

Introduction to psychoanalysis as a field of literary criticism, from its earliest times to the present, with emphasis distributed between literary texts and their authors, the reading process, and theory. Additional focus on the Russian context raises questions about the special place Russia and Russians had in Freud's thought, why psychoanalysis caught on so quickly in Russia (only to be suppressed by Stalin), and why it is so popular now (Yeltsin signed a decree officially recognizing the discipline of psychoanalysis). We ask: How is the writer's personality revealed, suppressed, or otherwise implicated in his or her products? What are the limits of such speculation, and how do we avoid writing our own psyches into interpretations of others' texts? Finally, what are the major charges against psychoanalysis made by its critics in recent years? Readings in English translation and films may include works by Sophocles, Ovid, Gogol, Dostoevsky, Chekhov, Hoffman, Jensen, Kafka, Mann, Sacher-Masoch, Nabokov, Fassbinder, and select items of folklore; theory and applied criticism by Freud, Rank, Lacan, Bettelheim, Holland, Brooks, Bakhtin and Crews. No prerequisites. Credit 3 units.

A&S TH FA Lit

Russ 352. Russian Literature and Medicine: Chekhov and Others

Same as Russ St 352.

Fiction, memoirs, and case histories by physicians and representations of illness and the practice of medicine as depicted by lay authors. We discuss: the poetics of illness, and illness as ready-made poetics; the potent ideological symbolism attached to the progressive figure of the physician in the middle of the last century; the turn-of-the-century theory of degeneration; the social engineers of Soviet times. Reading to include works by Mikhail Bulgakov, Anton Chekhov, Olga Forsh, Aleksandr Luria, Aleksandr Solzhenitsyn, Leo Tolstoy, Vikent Veresaeu. No prerequisites. Open to freshmen. Credit 3 units.

A&S TH FA Lit

Russ 362. Introduction to Russian Civilization

Same as IAS 362.

A&S TH

Russ 375. Topics in Russian Culture

Same as IAS 3750.

A&S TH WI

Russ 404. Fourth-Year Russian

Same as Russ St 404.

Further develops students' abilities in all spheres of the language: speaking, listening, reading, writing. Vocabulary building, conversation practice, and student compositions based on materials from the Russian mass media, contemporary films, and readings in modern Russian literature. Prerequisite: three years of college Russian or equivalent. Credit 3 units.

A&S LA

Russ 405. Advanced Russian II

Same as Russ St 405.

Further develops students' abilities in all spheres of the language: speaking, listening, reading, writing. Vocabulary building, conversation practice, and student compositions based on materials from the Russian mass media, contemporary films, and readings in modern Russian literature. Prerequisite: three years of college Russian or equivalent. Credit 3 units.

A&S LA

Russ 431. Russia Today and Yesterday: Cultural Perspectives (in Russian)

Same as Russ St 431.

On the basis of contemporary literature, official media, popular songs and films, the course examines the ever-changing culture of the Russian people and society during the pre- and post-perestroika periods. Class discussions, lectures, and student presentations. Prerequisite: three years of college Russian or the equivalent. Credit 3 units.

A&S LA FA AH Lit

Russ 432. Russia Today and Yesterday (in Russian)

Same as Russ St 432.

Readings of 19th- and 20th-century Russian writers, as well as other literary and non-literary texts. Refinement and expansion of Russian communication skills (speaking, listening, writing, reading). Class discussions, student presentations, compositions. Prerequisite: Russ 431 or the equivalent. Credit 3 units.

A&S LA FA Lit

Russ 500. Independent Work

Prerequisite: Senior standing and permission of the chair. Credit variable, maximum 6 units.

Russian Studies

Please see Russian.

Undergraduate Courses

Russ St 101D. Elementary Russian

Same as Russ 101D.

A&S LA

Russ St 102D. Elementary Russian

Same as Russ 102D.

A&S LA

Russ St 211D. Intermediate Russian

Same as Russ 211D.

A&S LA

Russ St 212D. Intermediate Russian

Same as Russ 212D.

A&S LA

Russ St 215C. Introduction to Russian Civilization

Same as Russ 215C.

A&S CD TH **FA** SSP

Russ St 3131. Russian Politics

Same as Pol Sci 3131.

A&S SS **FA** SSP

Russ St 322. Third-Year Russian

Same as Russ 322D.

A&S LA

Russ St 324. Third-Year Russian

Same as Russ 324D.

A&S LA

Russ St 3253. Democratic Politics in Eastern and Central Europe

Same as Pol Sci 3253.

A&S SS **FA** SSP

Russ St 331C. Masterpieces of 19th-Century Russian Literature

Same as Russ 331C.

A&S SD TH **FA** Lit

Russ St 339C. 20th-Century Russian Literature and Culture

Same as Russ 339C.

A&S CD TH **FA** Lit

Russ St 348. Dostoevsky and Tolstoy: From Novel to Film

Same as Russ 348.

A&S TH **FA** Lit

Russ St 350C. The 19th-Century Russian Novel

Same as Russ 350C.

A&S SD TH WI **FA** Lit

Russ St 351C. Literature and Psychoanalysis: Russia and the West

Same as Russ 351C.

A&S TH **FA** Lit

Russ St 352. Russian Literature and Medicine: Chekhov and Others

Same as Russ 352.

A&S TH **FA** Lit

Russ St 356C. 20th-Century Russian History

Same as History 356C.

A&S TH **FA** SSP

Russ St 362. Introduction to Russian Civilization

Same as IAS 362.

A&S TH

Russ St 375. Topics in Russian Culture:

Same as IAS 3750.

A&S TH WI

Russ St 3908. Ideas, Personalities, and Politics in Revolutionary Russia: Writing-Intensive Seminar

Same as History 3908.

A&S TH WI

Russ St 39X9. To Russia and Return: Travel, Literature, and History: Writing-Intensive Seminar

Same as History 39X9.

A&S TH WI

Russ St 402. The Meaning of National Security in the 21st Century

Same as IAS 402.

A&S SS

Russ St 404. Fourth-Year Russian

Same as Russ 404.

A&S LA

Russ St 405. Advanced Russian II

Same as Russ 405.

A&S LA

Russ St 4271. Topics in Comparative Politics: Governments in Democratic Eastern Europe

Same as Pol Sci 4271.

A&S SS WI **FA** SSP

Russ St 431. Russia Today and Yesterday: Cultural Perspectives (in Russian)

Same as Russ 431.

A&S LA **FA** AH Lit

Russ St 432. Russia Today and Yesterday (in Russian)

Same as Russ 432.

A&S LA **FA** Lit

Russ St 4432. Politics of Post-Soviet Countries (Commonwealth of Independent States)

Same as Pol Sci 4432.

A&S SS **FA** SSP

Russ St 4442. The Jewish Experience in Eastern Europe

Same as History 4442.

A&S CD TH **FA** SSP

Russ St 448C. Russian History to the 18th Century

Same as History 448C.

A&S TH **FA** SSP

Russ St 449C. Imperial Russia

Same as History 449C.

A&S TH **FA** SSP

Social Thought and Analysis

Chair

John R. Bowen

Dunbar–Van Cleve Professor in Arts & Sciences

(Anthropology)

Ph.D., University of Chicago

Endowed Professors

Pascal R. Boyer

Henry Luce Professor of Collective and Individual Memory

(Anthropology)

Ph.D., University of Paris–Nanterre

Wayne Fields

Lynne Cooper Harvey Distinguished

Professor in English

(English)

Ph.D., University of Chicago

Jack Knight

Sidney W. Souers Professor of Government (Political Science)

Ph.D., University of Chicago

Linda J. Nicholson

Susan E. and William P. Stiritz Distinguished Professor of Women's Studies

(Women and Gender Studies)

Ph.D., Brandeis University

Robert A. Pollak

Hernreich Distinguished Professor of Economics

(Economics)

Ph.D., Massachusetts Institute of Technology

Mark R. Rank

Herbert S. Hadley Professor of Social Welfare

(Social Work)

Ph.D., University of Wisconsin–Madison

Lee N. Robins

University Professor of Social Science

(Sociology in Psychiatry)

Ph.D., Radcliffe College

Michael Sherraden

Benjamin E. Youngdahl Professor of Social Development

(Social Work)

Ph.D., University of Michigan

James V. Wertsch

Marshall S. Snow Professor in Arts & Sciences

(Anthropology, International and Area Studies, Education)

Ph.D., University of Chicago

Professors

Howard Brick

(History)

Ph.D., University of Michigan

Pauline Kim

(Law)

J.D., Harvard University

Joseph Loewenstein

(English)

Ph.D., Yale University

Larry M. May
(Philosophy)
Ph.D., New School for Social Research

Associate Professors

Garrett A. Duncan
(Education)
Ph.D., The Claremont Graduate School

Alan Lambert
(Psychology)
Ph.D., University of Chicago

John V. Nye
(Economics)
Ph.D., Northwestern University

Sunita Parikh
(Political Science)
Ph.D., University of Chicago

R. Keith Sawyer
(Education)
Ph.D., University of Chicago

Bradley P. Stoner
(Anthropology)
M.D., Ph.D., Indiana University

Nancy R. Vosler
(Social Work)
Ph.D., Virginia Commonwealth University

Assistant Professors

Lisa Baldez
(Political Science)
Ph.D., University of California–San Diego

Margaret L. Brown
(Anthropology)
Ph.D., Washington University

Bret Gustafson
Ph.D., Harvard University

John J. Hetts
(Psychology)
Ph.D., University of California–Los Angeles

Andrew Rehfeld
(Political Science)
Ph.D., University of Chicago

Adjunct Professors

James Bohman
(Philosophy, Saint Louis University)
Ph.D., Boston University

Pedro C. Cavalcanti
(Anthropology)
Ph.D., University of Warsaw

Linda Lindsey
(Social Thought and Analysis)
Ph.D., Case Western Reserve University

Donald E. Strickland
(Social Thought and Analysis)
Ph.D., Tulane University

Senior Lecturer

Helen Power
(Women and Gender Studies)
Ph.D., Washington University

Professor Emeritus

Marvin J. Cummins
(Political Science)
Ph.D., University of Colorado

Social Thought and Analysis offers you the opportunity to examine the nature and impact of societal structures and processes, as well as the development of social theory since the 17th century.

This undergraduate degree program is an interdisciplinary course of study that addresses human interaction in groups from social, historical, cultural, and theoretical perspectives. You may major or minor in Social Thought and Analysis or choose it as a concentration to complement your primary major.

The program emphasizes social problems that arise from distributions of power and resources. Throughout the curriculum, you receive a cross-cultural, multinational education. Because the study of Social Thought and Analysis provides a comprehensive understanding of modern society, as a student you will be better prepared to be a citizen in the 21st century.

When you take courses in Social Thought and Analysis, you learn from faculty members who are expert social scientists. Faculty members from anthropology, economics, education, history, law, medicine, philosophy, political science, psychology, and social work also participate in the program to give you a more complete view of particular issues.

Our faculty is involved in multidisciplinary community-based research and international research. As a student, you are eligible to participate in relevant hands-on research projects in the field of your choice.

Majoring in Social Thought and Analysis provides essential training for graduate study in any of the social sciences and is a useful background for many professional careers.

The major in Social Thought and Analysis is designed to provide students with training in social science theories and methods to allow them to choose a focus within the major, and to give them the opportunity to engage in directed research during their senior year.

Developing a Major Curriculum: Upon declaring the major in the Social Thought and Analysis (STA) office in Room 139 McMillan Hall, the student will be assigned an adviser based on his or her interests. Students may wish to consult the STA Directory, which lists faculty interests. The student will meet with the adviser to discuss objectives to be pursued within the STA framework and to develop a list of appropriate courses around a focus. The focus could be on cities, schools, socioeconomic inequality, social or political theory, religion and social change, comparative modernities, social problems, U.S. politics, or other topics. The list of courses can be modified as new courses are offered and old ones dropped.

Based on this initial meeting with the adviser, the student should write a one- to two-page “major plan” that describes the focus and lists some appropriate courses. The adviser and student should review the plan during subsequent advising meetings. The student should deposit a copy of the plan in the STA office.

During the spring of the senior year, the

student should write a “final statement” on his or her curriculum, in which he or she will assess the choice of courses and major, evaluate progress made and material mastered, and consider what might have been taken that was not. (These statements will provide one form of assessment of our program.) The statement will also describe how the requirements for the major were met, and discuss the degree to which the agreed-upon focus for the student’s curriculum was maintained. After the adviser has approved and signed this statement, the student must submit it to the STA office before his or her name will be given final approval for graduation as a STA major.

Required Courses: *Core courses*—(sophomore standing or consent of the instructor required for all three courses; 3 units each; offered annually):

STA 300: Models of Social Science. Analyzes different ideas of social science, the assumptions involved in different disciplines, and examples of different kinds of analysis.

STA 326: Methods and Reasoning in the Social Sciences I. Instructs students in ways of using quantitative databases to address social science problems.

STA 330: Methods and Reasoning in the Social Sciences II. Covers the nature of ethnography; students engage in research using ethnographic methods.

Seminars—All majors will take at least one “Topics” seminar, a designated 400-level course that relates social theory to empirical research topics. Students may take a “Topics” seminar in their junior or senior year, and, of course, they may take more than one. (The courses will be open to all students, but STA majors will be given preference.) Students are encouraged to develop research projects from their work in one of these courses or in any other course.

By Thanksgiving break of their senior year, all majors are to have decided on a research topic for their spring semester and to have received their adviser’s approval. The student should deposit a one-page research plan in the STA office at that time.

Seniors writing Honors theses will enroll in STA 490: Senior Research Seminar, in the fall and spring semesters. Seniors writing one-semester senior projects enroll for spring semester only. (STA 490: Senior Research Seminar, is open only to STA majors and minors except by special permission. Credit 3 units.) At the end of the spring semester we will organize a half-day workshop in which students will present the results of their projects and discuss the implications of their work for future research.

Research projects—Projects may be of several types:

1. It may be a standard Honors thesis (in which case the student will have enrolled for STA 490: Senior Research Seminar, in both the fall and spring semester).
2. It may be a standard research paper, like an Honors thesis, but not requiring prior (i.e., fall period) intensive research and not qualifying the student for Honors.
3. It may be a group project that builds on work in a previous course (e.g., the “Topics” seminar) or on another experience.

4. It may be the research component of an internship (either as the successor to an earlier internship [STA 299] or as an internship pursued as part of STA 490). It would need to be defined as a research project, however, and not merely as a standard university internship (which often requires only a journal and a minimally analytic paper).
5. It could be part of a larger research project carried out by a faculty member. Faculty interests will be listed on the STA Directory and Web site; students are encouraged to read these interests for potential matches. However, research could be with any other member of the University faculty, in any school.

Electives: In all, majors must complete 27 units in the major, including 21 at the 300 level or above. The above-mentioned required courses amount to 15 units (STA 300, 326, 330, 490, plus one 400-level “Topics” seminar). There remain four elective courses, at least two of which must be at the 300 or 400 level. These four electives should be chosen as part of the student’s major plan.

Minors: Minors will take the three 300-level required courses, one (400-level) “Topics” seminar, plus two additional courses for a total of 18 units. Minors are encouraged to take the Senior Research Seminar as well; doing so counts as one of their additional courses.

Senior Honors: You are encouraged to work for Honors. If you qualify, you must complete the requirements and an Honors thesis under the direction of a special Honors committee or another University faculty member, subject to the program chair’s approval.

Undergraduate Courses

STA 100. Global Process and Local Identities *Same as Educ 4931.*

This all-university course is designed to explore one of the major paradoxes of our time. At the same time that the forces of globalization seem to be at work in virtually all areas of our lives (global communication, the global economy, the environment), new demands for local identities are cropping up (nationalism, local political control). This is an issue that will face everyone in the 21st century, but it is presently very little understood. The course provides a forum for students and faculty to discuss these issues in a critical, informed way. Particular emphasis is given to providing small group discussion settings where students and faculty can work together. Course presentations and discussions introduce students to a range of disciplinary perspectives and acquaint them with how they can pursue these perspectives in greater depth in departments at Washington University. Each week, the course meets for one large lecture or presentation session and one small group discussion. Lectures are given by University faculty and visiting scholars on a range of topics: law, global. Special emphasis is placed on fostering small group discussions as a way of entering into Washington University’s intellectual community. Limited to first-year students. May be taken credit/no credit only. Credit 2 units.
A&S SS FA SSP

STA 103B. Introduction to Political Economy: Macroeconomics *Same as Econ 103B.*

A&S QA, SS FA SSP

STA 104B. Introduction to Political Economy: Macroeconomics *Same as Econ 104B.*

A&S QA, SS FA SSP

STA 105. Freshman Seminar: The “Cultural Wars”: Origins, Anatomy, and Implications

Recent decades have witnessed escalating public conflict in America over such “values” issues as abortion, gay marriage, prayer in the schools, the public funding of transgressive art, and the content of American history textbooks. These conflicts are more than isolated battles over the proper status of women, the nature of the family, the place of religion in modern society, the purpose of art, and the national ideals we pass on to the next generation. What is more, these conflicts tend to be linked one to another in the minds of the combatants, suggesting that they are the interrelated battles of a more comprehensive contest between rival visions of freedom and moral order (“liberal” and “conservative” visions, in common parlance). Unlike ordinary “conflicts of interest,” normative conflicts such as these resist compromise and negotiated settlement, thus posing special challenges to democratic government. In this seminar we will explore the substantive issues over which these combatants engage, the rhetorical structure of these conflicts, their historical roots (religious, political, and socioeconomic), and the sociology of their contagion (including the impact of political party competition, the courts, and modern communications technology). We will close the seminar by relating America’s culture wars to analogous culture wars in other parts of the world, and within this broader perspective, we will examine the challenges that such conflicts pose for democratic politics and evaluate the strategies that have been proposed for coping with them. Credit 3 units.

A&S SS

STA 106. Freshman Seminar: St. Louis: Engaging the City *Same as AMCS 106.*

This seminar introduces students to the histories, cultures, societies, and politics of St. Louis through the study of, and active involvement in, diverse facets of urban life. Students will read and discuss current and historical material on St. Louis and carry out research and active collaboration with ongoing projects in the city. Such projects might include collection of local histories, volunteering with city agencies or neighborhood organizations, studying patterns of urban life and diversity, or tracing changing cultural identities of St. Louis neighborhoods and public spaces. The seminar is intended to explore articulations between social science and public life. The course will include field trips, visits with St. Louis’ public figures, and opportunities for individual internships. Credit 3 units.

A&S SS

STA 120B. Social Problems and Social Issues *Same as AMCS 102B, Lw St 120B.*

Survey of social problems and social issues in contemporary American society, such as racism, poverty, sexism, crime, and war. Credit 3 units.

A&S SS FA SSP

STA 127. Introduction to Political Theory II: Classics of Western Social and Political Thought *Same as Pol Sci 107.*

A&S SS

STA 150. Topics in STA: Gender and Culture in Global Landscape Credit 3 units.

A&S SS FA SSP

STA 209. Freshman Seminar: Gender and Citizenship *Same as WGS 210.*

A&S SD, TH FA SSP

STA 210B. Gender Roles

Same as Lw St 210B, WGS 230B.

Examines major theoretical explanations of different roles of the sexes, including sexual stratification, socialization, the family, labor force, media, interpersonal communications, and “gender politics” in America. Credit 3 units.

A&S SD, SS FA SSP

STA 218. Introduction to the Sociology of Law

Same as Pol Sci 2182.

A&S SS FA SSP

STA 220. History of Modern Social Theory

Same as Lw St 220.

An introduction to modern social theory from the age of Adam Smith to the present, featuring discussion of primary texts by major contributors to “classic” social theory—notably Karl Marx, Max Weber, and Emile Durkheim—and surveying trends of social thought since their time, including main currents of American social science, critical theory, feminism, postmodernism, and new approaches to understanding global social structures. Credit 3 units.

A&S SS

STA 221. Introduction to Memory Studies

Same as Psych 221.

The course focuses on memory not only as an individual phenomenon but also as the basis for the transmission of culture and the construction of collective identity. We will survey such topics as experimental methods and findings in the study of individual memory; questions of accuracy and vividness of memory and witness reports; repressed memories; transmission of cultural norms and identity through narratives; shared historical memories; individual trauma and historical upheaval; revision of the past and political usage of collective memory. Credit 3 units.

A&S SS

STA 299. STA Internship

Internship students may receive up to 3 units of credit for an approved and faculty-sponsored internship. Credit variable, maximum 3 units.

FA SSP

STA 300. Models of Social Science

Same as PNP 300, Pol Sci 300, Phil 300.

What goals and assumptions do the social sciences share, and what distinguishes them from one another, from the natural sciences, and from the humanities? This course is designed to explore these questions first by setting them in historical context and then through analysis of concrete examples that illustrate different approaches to social scientific research. Topics include: testing strategies in the social sciences (a comparison of qualitative versus quantitative strategies for studying “fragile families”); debates about objectivity (as raised by the IQ controversy); problems of historical interpretation (illustrated by a reflective retelling of Haitian history); and pressing ethical issues to do with the responsibilities social scientists have to those they study and to the larger society. Credit 3 units.

A&S SS, WI FA SSP

STA 300W. Models of Social Science

Same as Phil 300W.

Unlike atoms, humans are generally thought to have free will. Yet, unlike many good stories, people are predictable. How much does this matter to the study of society and human behavior? What distinguishes the social sciences from the natural sciences and the humanities? What goals and assumptions do the social sciences share? This course is designed to explore these questions first

by setting them in historical context and then through the analysis of concrete applications that will illustrate different approaches to social scientific research. Topics include: evaluating qualitative and quantitative methods in the social sciences; causation in the social sciences; debates about objectivity; problems of historical interpretation; and political and cognitive influences on inquiry. Applications may include: pornography and sexual violence, birth order and respectivity to innovation; the translation of the bible into English and the English and American revolution; race and community; the role of federal spending on science through political agencies; or other similar issues. 300W (but not 300) counts as a writing-intensive course. Credit 3 units.

STA 301B. Individual, Family, and Community
Same as AMCS 301B, Lw St 301B, ISA 333, Anthro 301B, Pol Sci 333B.

A course on the relationships between the individual and various forms of community, in the U.S. and in other societies. We examine interactions in family, school, and neighborhood, and the social bonds or divisions created therein. We also consider the place of group differences (gender, ethnic, religious) in law and in political life. Materials come from political theory, law, and the social sciences. Credit 3 units.

A&S SS FA SSP

STA 302. Democracy, the Market, and the Individual

Same as Pol Sci 3021, AMCS 315.

This course addresses the question of how people can develop political and economic institutions that best serve their interests. The focus of the course is an examination of the institutions of capitalism and democracy as the means of organizing, respectively, an economy and a policy. We look at arguments in favor of these institutions, as well as arguments on their limitations. Primary emphasis is on works of the 19th and 20th centuries that have had a major impact on the way we think about man and society. Credit 3 units.

A&S SS FA SSP

STA 302C. Honors Seminar for Sophomores II: Tutorial in History

STA 303. Major Themes in U.S. Urban History
Same as History 303.

Using St. Louis and other midwestern cities as examples, the course looks at the emergence and functions of cities: the importance of water and rail transportation and regional connections, foreign and domestic immigration and the growth of distinctive neighborhoods, as well as the significance of major events such as the 1904 World's Fair. Changes in metropolitan St. Louis since World War II and issues of urban development will also be examined. Collaborative student projects, visits to areas of St. Louis, films, videos, and presentations by guests are part of the course. Credit 3 units.

A&S SS FA SSP

STA 3031. Gender and Education

Same as Educ 303.

A&S SD, SS FA SSP

STA 3032. Western Thought and Contemporary Social Problems

Same as Lw St 3032, IAS 3032.

Predominant ideologies and myths, their historical origins (classical theorists such as Locke, Rousseau, and Marx are briefly discussed), and how they/we confront modern dilemmas of our civilization; that is, religious, racial, and national tolerance/intolerance; the pursuit of a career and personal independence: "How to get a job?"; the welfare state and the market; liberalism and individual rights; social stratification and inequality; productivity and/or unemployment. Discussions are

drawn from contemporary material and authors.

Credit 3 units.

A&S SS FA SSP

STA 3051. Topics Seminar: Collective and Individual Memory

Same as AMCS 3051, PNP 3051, Psych 3621, Educ 305.

This course outlines a range of perspectives on collective and individual memory. In addition to reviewing contributions that various disciplines have made to the study of collective and individual memory, the seminar seeks to develop an integrated picture of how these perspectives fit together. A major part of the course is devoted to research projects to be proposed and carried out by the students. Topics for these projects may be in areas such as: memory, history, and identity; the role of narrative in memory; the emergence and resolution of conflicting accounts of the past; memory illusions; and the representation of the past in museums, memorial sites, and commemorative practices. Permission of the instructor required. Credit 3 units.

A&S SS FA SSP

STA 310. Political Economy of Government Behavior

This class is about how the aggregation of individuals' decisions affect social, political, and economic outcomes. Prices in markets, election results, and even common social problems, such as traffic jams, are the result of the choices of thousands of people. Given that these macro effects are often undesirable, why do individuals choose the actions that they do? This class deals with how and why individuals choose actions and how their actions aggregate to influence macro outcomes. Credit 3 units.

A&S SS FA SSP

STA 312B. Education, Childhood, and Society

Same as Educ 313B.

Credit 3 units.

A&S SS FA SSP

STA 3141. Sociolinguistics, Literacies, and Communities

Same as Educ 314.

A&S LA

STA 315. Politics, Economics, and Welfare

Same as Econ 350.

A&S SS FA SSP

STA 3171. Topics in Politics: Ethnicity, Gender, and Violence

Same as Pol Sci 3171.

A&S SS FA SSP

STA 319. Race, Class, and the City: Ethnographic Perspectives

Same as Anthro 3192.

Much of the ethnographic tradition in anthropology, sociology, and allied disciplines has focused on questions of poverty and race in urban settings. This course takes up this engaged tradition, seeking to relocate it within a broader historical perspective and theoretical framework. Centering on the tensions between theory and practice, we begin with the conceptual foundations of the notion of "poverty," explore the critical reform literature of the 19th century, and then study the ethnographic tradition of research on race, class, and the city in the U.S. Is poverty to be understood as a condition of particular groups or individuals, often defined in terms of "lack" or "absence," or is it more structural in nature, deeply linked to the social and ideological forms of industrial capitalism? Credit 3 units.

A&S SS FA SSP

STA 321. Urban Social Theory

Same as Anthro 3211.

Do impersonality and social breakdown character-

ize cities or are they places of personal liberation and creativity? How do city dwellers adapt to the urban environment? Are subcultures produced in the city by poverty and prejudice? What is the impact of urban planning on everyday city life?

These questions are engaged through a cross-cultural and historical approach to the city. Credit 3 units.

A&S SS FA SSP

STA 323. Cultural Diversity and Assimilation

Culture, ethnicity, and race as factors influencing ethnic relations between members of the dominant group (i.e., Caucasians) and members of selected ethnic groups (i.e., African Americans, Asian Americans, Hispanic Americans, and Native Americans). Special consideration given to the nature of ethnic relations in a multiethnic society. While emphasis is placed on people of color, the course compares and contrasts the experiences of people of color with early European immigrant groups. Also: power and inequality, prejudice and discrimination, acculturation and assimilation, policy issues. Credit 3 units.

A&S SS FA SSP

STA 324. Introduction of American Social Welfare

Same as Pol Sci 3281.

Examination of the origins and structure of the major American categorical assistance and social insurance programs: Social Security, Medicare, food stamps, and AFDC. Academic and public policy controversies related to welfare reform, universal health care, and social security crises will be addressed. Prior course work in social thought and analysis or political science is required. Credit 3 units.

A&S SS FA SSP

STA 325. Poverty in America

The causes, nature, and extent of poverty in the United States; ways of dealing with poverty, including employment policies and social welfare programs addressing changes in the American family structure. Prerequisite: 3 units of social science or permission of the instructor. Credit 3 units.

A&S SS FA SSP

STA 326. Methods and Reasoning in the Social Sciences I

Same as Anthro 313B.

This course provides an introduction to statistical methods in the social sciences. Students will learn and apply basic concepts including data description, probability theory, statistical inference, hypothesis testing, and regression analysis to social problems. Data will be used to analyze current policy issues such as poverty, health care, and income distribution. During the course, students will learn how to manipulate and analyze statistical data using computer software. Credit 3 units.

A&S QA, SS FA SSP

STA 3261. Inequality, Hierarchy, and Difference

Same as Anthro 3261.

A&S SD, SS FA SSP

STA 328. Current American Social Problems and Policy

Credit 3 units.

A&S SS FA SSP

STA 330. Methods and Reasoning in the Social Sciences II

Same as AMCS 332, AFAS 2411, AFAS 241B, AFAS 3772, Anthro 3411, History 2411, History 3300, IAS 341B.

What historical circumstances in colonial India and South Africa produced Gandhi and *satyagraha* (nonviolent resistance) against British rule? Were his methods successful? How have Gandhi's

ideas influenced political protest in the United States and elsewhere? Students will read Gandhi's writings and other historical sources and conduct independent research on current protest groups that use nonviolent methods. Credit 3 units.
A&S SS FA SSP

STA 331C. The American School

Same as Educ 301C.
A&S SD, TH FA SSP

STA 3324. Urban Politics and Administration

Same as Pol Sci 3382.
A&S SS FA SSP

STA 334C. Women and Social Change

Credit 3 units.
A&S SS FA SSP

STA 335. Studying the State

Same as Anthro 3241.
 This is a course on paradigms and methods for understanding the state based on qualitative study of state agents, rituals, and effects that are often ignored in analyses of formal models, rules, and institutions. Issues discussed include nationalism, bureaucracy, violence, power, identity, culture, and corruption. Cases draw primarily on ethnographic studies of state systems and processes in diverse geographic, historical, and cultural contexts. Credit 3 units.
A&S SS

STA 3361. Topics in Politics: Politics and Literature

Same as Pol Sci 336.
A&S SS FA SSP

STA 3371. The Economics of Law

Same as Econ 353.
A&S SS FA SSP

STA 3372. Everyday Encounters with Power and Authority

Same as Anthro 3372.
A&S SS FA SSP

STA 340. Introductory Psychological Statistics

Same as Psych 300.
A&S NS, QA FA NSM

STA 3401. Political Discourse

Same as Pol Sci 3401.
A&S SS FA SSP

STA 343. Text, Memory, and Identity

Same as IAS 343.
A&S TH

STA 344. Topics in Women's Studies: The Politics of Marriage

Same as WGS 344.
A&S SS FA SSP

STA 349. Women and the State

Credit 3 units.
A&S SS FA SSP

STA 3561. Women and the Law

Same as WGS 3561.

STA 359. Topics in European History: The New Imperialism

STA 3602. American Culture and Society Since 1945

Same as History 383.
A&S TH FA SSP

STA 3611. Political Representation

Same as Pol Sci 3611.
A&S SS FA SSP

STA 3612. Morality and War

Same as Pol Sci 3612.
A&S SS FA SSP

STA 361C. Black America since the Civil War

Same as History 388C.
A&S TH FA SSP

STA 362. Political Thought in the 20th Century

Same as Pol Sci 3091.
A&S SS FA SSP

STA 365. Cultural Order and Change

Same as Anthro 3655, History 3652.
 How are cultural beliefs and practices produced? How are they maintained? Under what conditions can they change? The current controversies over "the Western tradition," multiculturalism, and identities based on class, gender, race, or sexuality give these questions special significance. Course uses the perspectives of cultural anthropology and history to address them. Prerequisite: sophomore standing, or permission of the instructor. Preference for enrollment given to majors in social thought and analysis. Credit 3 units.
A&S SS FA SSP

STA 366. American Economic History

Same as Econ 326.
A&S SS FA SSP

STA 370F. Social and Political Philosophy

Same as Phil 340F.
A&S TH FA SSP

STA 372. Law in American Life II: 1776 to the Present

Same as History 372C.
A&S SD, TH FA SSP

STA 3722. History of Law in American Life II: 1776 to the Present

Same as 372C.
 Credit 3 units.
A&S SS FA SSP

STA 372C. Law in American Life II: 1776 to the Present

Same as History 372C.
A&S SD, TH FA SSP

STA 373F. Classical Ethical Theories

Same as Phil 331F.
A&S TH FA SSP

STA 375. Economic Reasoning in the Social Sciences

Introduction to the principles of microeconomics with examples drawn from political science, anthropology, and history as well as some typical economics cases. The course teaches how to apply the concepts of opportunity cost, the law of demand, and competitive equilibrium to the analysis of socioeconomic issues. Overlaps standard courses in price theory, but with greater emphasis on issues in public choice and political economy, such as the problems of collective action, public goods provision, and incentive-compatible mechanisms. Credit 3 units.
A&S SS FA SSP

STA 380. Introduction to Social Psychology

Same as Psych 315.
A&S SS FA SSP

STA 385. Feminist Approach to the Psychology of Women

Same as WGS 328.
A&S SS FA SSP

STA 387. Between Submission and Power: Women and Family in Islam

Same as WGS 306.
A&S CD, SS FA SSP

STA 390. Topics in Women's Studies: Feminist Research Methods

Same as WGS 392.
A&S SS FA SSP

STA 392C. Latin America in the 20th Century

Same as Pol Sci 373.
A&S SS FA SSP

Same as Pol Sci 373.
A&S SS FA SSP

STA 395. Independent Study

Prerequisite: permission of the instructor.
 Credit 3 units.
FA SSP

STA 400. Independent Work

Prerequisite: permission of the instructor.
 Credit 3 units.
FA SSP

STA 401. Current Issues in Social Theory

Same as Educ 4482, Pol Sci 4012, Anthro 4482.
 Seminar on two paradigms for the study of social action: interpretive studies focusing on meaning, and strategic approaches focusing on choice and constraint. Emphasis is on the mutual dependence of the two paradigms, explored through reading current work in politics, anthropology, social theory, and history, with case studies in law and legal processes. Prerequisite: 6 units of social sciences or history. Credit 3 units.
A&S SS FA SSP

STA 402. Drug Abuse in American Society: Social, Legal, and Political Consequences

Same as Lw St 402.
 This course includes information on the major types of abusable substances and overviews current knowledge regarding biological, psychological, and social correlates of substance abuse. Emphasis is placed on understanding how different segments of American society are impacted by alcohol and various drugs. Implications for public policy are considered and are a core focus of the course. Credit 3 units.
A&S SS FA SSP

STA 403. Race, Sex, and Sexuality: Concepts of Identity

Same as WGS 403.
A&S SD, SS FA SSP

STA 404. Topics Seminar in Political Theory: Legitimacy

Same as Pol Sci 5081.
 What is "legitimacy" as a political concept? Does a legitimate state have special rights (like coercing its citizens) that an illegitimate state does not have? And do citizens of a legitimate state have special obligations to it (like obeying its laws) by virtue of its being legitimate? In short, why do we care that a state is legitimate at all, rather than (or in addition to) being stable or just? In this seminar we investigate the concept of "legitimacy" as it is featured in social and political theory, and as it is invoked in social science research more broadly, particularly in public opinion research. We also investigate the role of constitutions in establishing a legitimate political order. Credit 3 units.
A&S SS, WI

STA 405. Topics Seminar: Immigration and Heritage

Same as AMCS 405, IAS 406, Anthro 4352.
 New immigrants from Asia, Latin America, the Caribbean, and Eastern Europe have radically altered the composition of the American population since U.S. immigration laws changed in the 1960s. What changes in American culture has this immigration brought about? What difficulties do they find in adapting to the U.S.? A combination of social-science studies, films, fiction, and student independent research will be used to address these issues. Credit 3 units.
A&S SS FA SSP

STA 406. The Politics of Identity in China

Same as Pol Sci 4063.
 Many people take "China" and "Chinese" to be straightforward concepts. This course challenges these assumptions, posing a number of questions: What are the boundaries of China? What does it mean to be Chinese? How do nationality, ethnic-

ity, gender, and class intersect with politics in China? Most work on identity in China has been done by historians and anthropologists. We use work from these and other disciplines to develop an understanding of the political face of identities in contemporary China, and their political implications. Credit 3 units.

A&S SS FA SSP

STA 4061. The Meaning of National Security in the 21st Century

Same as IAS 402.

A&S SS

STA 407. Social and Cultural Change

Same as Anthro 427.

A&S SD, SS FA SSP

STA 4071. Topics in Political Thought: Transformational Politics

Same as Pol.Sci 4071.

A&S SS FA SSP

STA 410. Topics Seminar: Law, Language, and Culture

Same as Lw St 410, PNP 410, Anthro 4491, Ling 4101.

A seminar on the roles of language and culture in shaping the rules, interactions, and institutions of law, in the United States and elsewhere. We begin by examining how lawyers, judges, and clients experience, talk about, and shape law in the U.S. We then consider how both Anglo-American and civil law traditions respond to cultural and religious pluralism. Written essays and local ethnography are required. Junior or senior standing required. Credit 3 units.

A&S SS FA SSP

STA 4109. History and Identity

Same as Educ 4109.

A&S SS FA SSP

STA 411. Sociolinguistics: Ethnography of Communications

Same as Anthro 412.

A&S SS FA SSP

STA 4111. Households and Families in Cross-Cultural Perspective

Same as Anthro 4111.

A&S SS FA SSP

STA 412B. Sociology of Education

Same as Educ 453B.

A&S SD, SS FA SSP

STA 418. The Law and Individual Liberties

Credit 3 units.

A&S SS FA SSP

STA 420. Language and Political Economy

Same as Anthro 4201, Pol.Sci 4201.

The course surveys language use as shaped by an array of politicoeconomic situations, including dialectal differences in stable Western democratic states, processes of urbanization and nation-formation in the First and Third World, bilingualism and multilingualism associated with transnational labor migration, and language in colonial and postcolonial contexts. Also considers what it means to think of language as a commodity, and different forms of resistance to political-economic hegemony that linguistic practice makes possible. Credit 3 units.

A&S SS FA SSP

STA 4211. Philosophy of Social Science

Same as Phil 4211.

A&S TH FA SSP

STA 423. Differential Life Styles

STA 4261. Topics Seminar: Systems of Inequality

Same as Anthro 4261.

A&S SD, SS, WI FA SSP

STA 4262. Inequality across States and Markets

Same as Pol.Sci 4264.

The focus of this course is on economic and political inequality and the nature of the link between the two. We explore political and economic sources of inequality, and consider the implications of inequality for political and economic outcomes. We examine approaches, strategies, and institutions that address inequality across countries with different political and economic arrangements. Credit 3 units.

A&S SS FA SSP

STA 428. Topics in American Politics

STA 4290. Topics Seminar: History of Modern American Social Theory

Same as AMCS 4290, History 4290.

An intensive survey of major American thinkers and trends of thought concerned with understanding society, culture, and personality. The course will examine key developments in the social sciences (economics, sociology, anthropology, psychology) along with related currents in philosophy and political ideology, from the 1870s to the 1990s. It will focus on prominent figures, such as William Graham Sumner, Thorstein Veblen, G. H. Mead, W. E. B. DuBois, Franz Boas, Margaret Mead, Talcott Parsons, C. Wright Mills, C. L. R. James, Barrington Moore, Nancy Chodorow, James S. Coleman, and James Clifford, and it will study the impact on American social thought of powerful intellectual currents such as Darwinism, pragmatism, cultural pluralism, Marxism, Weberian sociology, psychoanalysis, feminism, and post-modernism. Of special interest are the attempts American theorists have made to fashion a broad-based and integrated (cross-disciplinary) social science. Class meetings will combine informal lectures and discussion of primary texts. Credit 3 units.

A&S TH FA SSP

STA 4293. History and Social Theory

Same as History 4293.

A&S TH FA SSP

STA 430. Topics Seminar: Historical Thinking

Historical thinking is central to a number of disciplines, including history, anthropology, social and biological sciences. Students will learn about historical analyses as practiced in several disciplines and as studied by philosophers. Topics include ideas of explanation and generalization, the use of narratives, and the kinds of evidence introduced to support historical arguments. Credit 3 units.

A&S TH FA SSP

STA 432. Topics in Comparative Politics: Current Controversies in South Asian Politics

Same as Pol.Sci 432.

A&S SS FA SSP

STA 434. Approaches to Comparative Politics

Same as Pol.Sci 510.

STA 4341. Approaches to Comparative Politics II

Same as 5102.

Credit 3 units.

A&S SS FA SSP

STA 434B. Seminar in Black Social Science

Same as AFAS 434B.

A&S SD, SS FA SSP

STA 435. Cultural History

Same as Anthro 4351, IAS 4351.

Focus on how historical approaches and social science theory can combine to explain cultural continuity and change; practice in the collection and use of evidence from archival and primary sources. Credit 3 units.

A&S SS FA SSP

STA 4362. Topics Seminar: Local Genders, Global Transformations

Same as Anthro 4362.

A&S SS FA SSP

STA 439. Economic Anthropology

Same as Anthro 439.

A&S SS FA SSP

STA 441. Social Statistics

Same as IAS 441, Anthro 441, Educ 4411.

Introduction to the rationale and use of quantitative methods in social science; techniques for obtaining, analyzing, and presenting social data in numerical form; applications of sampling and probability to social science research; parametric and nonparametric techniques of bivariate analysis, including correlation and regression. Credit 3 units.

A&S SS FA SSP

STA 442. Social Statistics Practicum

Same as Educ 4412, Anthro 442, ASTAT 350A.

This course is an applied statistics "tutorial" which takes students individually through the application of statistical techniques, including some multivariate methods, to research problems of interest to them. The course is designed for students working on a variety of empirical research projects in the social sciences: for example, class research assignments, senior projects, senior theses, master's theses, and doctoral dissertations. It also is appropriate for students wishing simply to learn to apply their basic statistical knowledge. Prerequisite: STA 441 or other basic statistics course. Credit 3 units.

A&S SS FA SSP

STA 4422. History, Memory, and Collective Identities

Same as History 4422.

A&S TH FA SSP

STA 443. European Intellectual History: 1890-1930

Same as History 443.

A&S TH FA SSP

STA 444. Survey Research

Reviews basic survey research procedures, including the design of questionnaires and other interview schedules, the conduct of interviews, coding, data processing, quality control, and the preparation of these data for analysis. Prerequisites: 9 units of social science and permission of the instructor. Credit 3 units.

FA SSP

STA 445. Topics Seminar in Ethics and the Social Sciences

What responsibilities do social scientists have to their subjects, to the agencies that employ and fund them, to their professional community and its ideals of scientific or scholarly integrity? These issues are explored historically, with reference to debate over formative ideals of value neutrality and objectivity, and through an examination of contentious cases drawn from a range of social sciences. Specific issues include: requirements of informed consent and the use of deception in experimental research; assessments of risk and benefit; conflicts of interest in professional settings. Credit 3 units.

A&S SS

STA 4461. The Rule of Law

STA 4464. Topics Seminar: Religion, Law, and Pluralism

Same as Anthro 4464.

A&S SS FA SSP

STA 448. Trauma and Memory

Same as PNP 448, Psych 4408.

A thorough investigation of the effects of trauma on memory in both individuals and collective

groups. Topics will include flashback memories, forgetting and repression, post-traumatic stress and memory, and effects of trauma on individual and group identity. Prerequisite: Psychology 100B or permission of the instructor. Credit 3 units.
A&S SS FA SSP

STA 4481. Writing Culture

Same as Anthro 4481.
A&S SS, WI FA SSP

STA 4483. Language, Mind, and Action in Sociocultural Context

Credit 3 units.
A&S SS FA SSP

STA 4484. Language, Thought, and Culture

Same as Educ 4484.
A&S SS FA SSP

STA 450. Economics of Social Policy

Same as Econ 440.
A&S SS FA SSP

STA 4503. Topics in Political Thought: Order, Diversity, and the Rule of Law

Same as Pol Sci 4503.
A&S SD, SS, WI FA SSP

STA 4504. Topics Seminar: Contemporary Democratic Theory

Contemporary debates in democratic theory have produced a number of challenging and provocative accounts of how democratic institutions can and should work. In this course we will analyze a number of competing theories of democracy and assess the similarities and differences among them. Although the course focuses primarily on theoretical issues, special attention will be given to how empirical research in the social sciences on democratic institutions and procedures informs and clarifies these debates. Credit 3 units.
A&S SS FA SSP

STA 4511. Race, Ethnicity, and Culture: Qualitative Inquiry in Urban Education

Same as AFAS 4511.
A&S SD, SS, WI

STA 4512. Contemporary Issues in the Developing World

Same as Anthro 4513.
A&S SS FA SSP

STA 4513. Criminal Law and Criminal Justice: Homicide

Same as Pol Sci 4513.
A&S SS, WI FA SSP

STA 452. Seminar in Comparative Public Policy

STA 455. Topics Seminar: Language and Culture

The study of language and speech in the context of social relationships and cultural systems. Topics include the role of speech in shaping identities such as nationality, gender, and class, language ideologies and social power, the relationships between language and mind, and the role of language in human development. Credit 3 units.
A&S SS FA SSP

STA 4608. The Education of Black Children and Youth in the United States

Same as Educ 4608.
A&S SD, TH, WI FA SSP

STA 461. Historical Development of Economic Ideas

Credit 3 units.
A&S SS FA SSP

STA 461B. The Construction and Experience of Black Adolescence

Same as AFAS 461B.
A&S SS FA SSP

STA 465. Postcolonial Theory and Society

Same as History 4651, IAS 465.
 Through a combination of nonfiction, novels, and films, this course explores the condition of “post-coloniality” in theory and in reality. The first half of the course concerns the Western construction of the colonial world; the second half concerns the “meltdown” of the West and Western metatheories. Credit 3 units.
A&S SS FA SSP

STA 466. Intellectual History of Europe: 1789–1890

Same as History 442.
A&S TH FA SSP

STA 4662. European Intellectual History: 1930–1990

Same as History 444.
A&S TH FA SSP

STA 467. Western Economic History

Same as Econ 423.
A&S SS FA SSP

STA 468. Intellectual Revolution in 20th-Century China

Same as History 4900.
A&S TH FA SSP

STA 4721. Social Theory and Anthropology

Same as Anthro 472.
A&S SS FA SSP

STA 4725. Theories of Collective Thought

Same as Pol Sci 505.

STA 475. Feminist Theories and Methods in Social Sciences

Same as Anthro 4755.
 A course on feminist epistemologies and methodologies in the social sciences. Introduces explanations for gender discrimination and their policy implications. Considers work, sexuality, language, and violence; and examines strengths and weaknesses of different research methodologies. Credit 3 units.
A&S SS FA SSP

STA 4751. American Culture: Traditions, Methods, Visions

Same as AMCS 475.
A&S TH

STA 4782. Black Nationalism: Ideology, Theory, and Politics

Same as AFAS 4601.
A&S SS

STA 487. Social Gerontology

Same as Psych 427.
A&S SS FA SSP

STA 4888. Topics in American History: Thorstein Veblen and his America

Same as History 488.
A&S TH FA SSP

STA 489. Education and Public Policy in the United States

Same as Educ 489.
A&S SS FA SSP

STA 490. Senior Research Seminar

Seniors writing Honors theses take the course both fall and spring semesters. Seniors writing one-semester senior projects enroll for spring semester only. At the end of the semester we will organize a half-day workshop in which students will present the results of their projects and discuss the implications of their work for future research. Credit 3 units.
A&S SS FA SSP

STA 491. Honors Thesis Seminar

All students writing an honors thesis in STA register for the Honors Thesis seminar during the spring of their senior year (after completing 490 in the fall). This seminar provides an opportunity to discuss methodological issues, compare notes on progress, troubleshoot difficulties, and consider ways of improving both the research and the presentation of the results. The seminar will meet periodically and primarily in the first half of the semester. More information about writing an honors thesis in STA can be found at artsci.wustl.edu/~sta/capstone.html. Prerequisite: STA 490. Credit 3 units.

STA 4918. Self and Society in Modern European Cultural History: Advanced Seminar in History

STA 4999. Advanced Seminar: Introduction to Comparative Civilizational Analysis: United States, China, and Japan
Same as History 4999.
A&S TH

STA 500. Independent Work

Prerequisites: senior standing and permission of the instructor. Credit variable, maximum 6 units.

STA 501. Seminar in Political Thought: Contemporary Political and Social Theory

Same as Pol Sci 501.

STA 516. Seminar in Comparative Politics

Same as Pol Sci 516.

STA 5482. Proseminar in Historiography

Same as History 5482.

Urban Studies

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Ph.D., University of Maryland, College Park

James V. Wertsch

Marshall S. Snow Professor in Arts & Sciences (Anthropology, International and Area Studies, Education)
Ph.D., University of Chicago

The Urban Studies major is ideal for students drawn to the serious examination of the profound issues affecting urban/metropolitan America and to prepare students, indeed the nation's future leaders, for the challenge of solving these issues.

While initially focusing on issues related to race and ethnicity in St. Louis and other major U.S. cities, in part, because of increasing immigration and globalization, the course work aspires to a more comparative and transnational framework. The program seeks to prepare students to research and investigate issues concerned with: evolving patterns of metropolitanism and the necessity for central city as well as neighborhood reconstruction; problems associated with re-gentrification, urban sprawl, and affordable housing; crises confronting newly emerging immigrant communities, and the social

cleavages of urban marginalized communities; underperforming urban schools; and the in-migration and out-migration of the city and its schools. These are but a few of the topics and issues that the academic program focuses upon.

The Major: There are four subject area concentrations in Urban Studies: Neighborhoods and Community Development, Urban Education, Cities of the World, and Public Policy/Social Policy. Urban Studies majors must complete Urban Studies 299, one introductory course in math or applied statistics (e.g., ASTAT 330A or 330B), one 400-level independent study or an internship, located locally or nationally, and a capstone seminar with required writing assignments. Overall, students must complete 33 units of course work for the major, of which 21 must be 300-level or above. Of these 21 advanced units, no more than 6 units may be from independent study courses. Once you declare a major in Urban Studies, you will be assigned a major adviser, who will help you formulate your area concentration.

The Minor: There is currently no minor available in Urban Studies.

Senior Honors: As an Urban Studies major, you are encouraged to work for Senior Honors, for which you may apply in your junior year. Acceptance into the program is based on your previous academic performance and a proposal to a faculty member who agrees to supervise your Honors research. You must complete Honors thesis research and an Honors thesis, which is evaluated by a three-member faculty committee.

Undergraduate Courses

URST 299. The Study of Cities and Metropolitan America

This course serves as the introductory course analyzing the forces shaping America's cities and surrounding metropolitan areas. It examines as well strategies for dealing with many of the profound social issues affecting urban/metropolitan America. Emanating from a historical perspective, it examines the ways in which industrialization and deindustrialization shaped Northern American cities and the consequences of deindustrialization on urban citizenry. It further surveys the demographic and spatial transformation of American cities examining the consequences of urban transformation on federal, state, and local politics, on society, and on her institutions. Similarly, the course focuses on the origin and societal changes and emerging goals of urban development, gentrification and evolving patterns of metropolitanism, and the necessity for central city as well as neighborhood reconstruction. The dynamics of racial residential segregation, crime and punishment, issues of academic achievement and under-achievement, the social cleavages of urban marginalized communities, family structure, urban homelessness, urban sprawl, and health care, among others, are viewed from the perspective of social justice by exploring social, political, economic, racial, and ethnic factors that impact on access, equity and care. Various theoretical perspectives and philosophies are introduced that have dominated the discourse on race and urban poverty. A field-based component complements the course work, and is designed to build interest, awareness, and skills in preparation for outreach to urban communities. Prerequisite: sophomore standing. Credit 3 units.

A&S SS

URST 3011. Individual, Family, and Community

Same as STA 301B.
A&S SD SS **FA** SSP

URST 3134. The AIDS Epidemic: Inequalities, Ethnography, and Ethics

Same as Anthro 3134.
A&S SS

URST 322C. African Civilization 1800 to Present

Same as AFAS 322C.
A&S CD TH **FA** SSP

URST 3252. History and (Auto)biography of Modern South Africa

Same as History 3252.
A&S CD TH

URST 375. Topics in Urban Studies

Prerequisite: URST 299 and junior standing.
Credit 3 units.
A&S SS

URST 400. Urban Education in Multiracial Societies

This course offers students an analysis of the historical development and contemporary contexts of urban education in English-speaking, multiracial societies. It examines legal decisions, relevant policy decisions, and salient economic determinants that inform urban systems of education in Western societies including, but not limited to, the United States, Canada, Great Britain, and South Africa. The course draws on quantitative, qualitative, and comparative data as an empirical foundation to provide a basis for a cross-cultural understanding of the formalized and uniform system of public schooling characteristic of education in urban settings. Given the social and material exigencies that shape urban school systems in contemporary societies, special attention is given in this course to the roles of migration, immigration urbanization, criminal justice, industrialism, de-industrialism, and globalization in shaping educational outcomes for diverse students in the aforementioned settings. Prerequisite: junior standing or permission of instructor. Credit 3 units.

A&S SS

URST 4101. Metropolitan Finance

This course is an interdisciplinary examination of fiscal policies in metropolitan regions and the related public policies that can make them better or worse places for living and working. A particular focus is on the financial structures and arrangements—both public and private—that support or hinder quality of life in urban spaces. Core topics of study include the potential impact of decentralized governments on metropolitan economic development, determination of optimal arrangements for sharing fiscal responsibilities among levels of government, evaluation of local revenue and expenditure decisions, and assessment of prospects and options for intergovernmental fiscal reform. The course is consistent in its approach to policy. Drawing on literature in sociology, education, public finance, community development, political economy, and other related fields, the course readings and experiences explore how fiscal policies can and do affect urban dwellers and their well-being. This is a departure from many public finance courses. Such an approach leads to very different questions, though. How do liquor zoning regulations influence minority and nonminority children in schools? Should whites be paid to move into minority neighborhoods or vice-versa? This approach to the study of metropolitan finance puts an emphasis on topics such as child care, public transportation, minimum wage, housing codes, street behavior, homelessness, incarceration, alcohol, sports stadiums, illicit drugs, tax abatements, water service, garbage collection,

schools, higher education, sprawl, and technological change, with consideration given to political, institutional, and cultural factors. Students are required to attend hearings, meetings, and other relevant functions associated with the development of public financial policy. Prerequisite: URST 299 and either junior standing or permission of the instructor. Credit 3 units.

A&S SS

URST 416. Rediscovering the Child: Interdisciplinary Workshops in an Urban Elementary School

Same as AMCS 416.

A&S SS

URST 4210. Tale of Two Cities: The Growth and Structure of Chicago and St. Louis

Same as AMCS 4210.

A&S TH

URST 4261. Political Economy of Urban Education

Same as Educ 4621.

A&S CD SS

URST 4280. History of Urban Schooling in the United States

Same as Educ 4280.

A&S TH

URST 4289. Neighborhoods, Schools, and Social (In)equality

Same as Educ 4289.

A&S SS

URST 4315. Culture, Language, and the Education of Black Students

Same as Educ 4315.

A&S CD SS F SSP

URST 4511. Race, Ethnicity, and Culture

Same as AFAS 4511.

A&S SD SS

URST 455. Topics in Urban Studies

Prerequisites: URST 299 and senior standing. Credit 3 units.

A&S SS

URST 4561. Urban Politics

Same as Pol Sci 4561.

A&S SS

URST 4608. The Education of Black Children and Youth in the United States

Same as Educ 4608.

A&S SD TH WI (FA) SSP

URST 461B. Construction and Experience of Black Adolescence

Same as AFAS 461B.

A&S SS (FA) SSP

URST 462. Politics of Education

Same as Educ 462.

A&S SS (FA) SSP

URST 4872. Colonial Cities and the Making of Modernity

Same as History 4872.

A&S CD TH (FA) SSP

URST 4891. Education and Public Policy in the United States

Same as Educ 489.

A&S SS (FA) SSP

URST 4951. The Civil Rights Movement

Same as History 4951.

A&S SD TH (FA) SSP

URST 499. Independent Work for Senior Honors

Credit variable, maximum 3 units.

A&S SS

Women and Gender Studies

Director

Mary Ann Dzuback

(Education and History)

Ph.D., Columbia University

Endowed Professors

Jane Aiken

William M. Van Cleve Professor of Law

(Law)

J.D., New York University

LL.M., Georgetown University Law Center

Susan Frelich Appleton

Lemma Barkeloo and Phoebe Couzins

Professor of Law

(Law)

J.D., University of California–Berkeley

Linda J. Nicholson

Susan E. and William P. Stiritz Professor in

Women's Studies and Professor of History

Ph.D., Brandeis University

Lynne Tatlock

Hortense and Tobias Lewin Distinguished

Professor in the Humanities

(Germanic Languages and Literatures)

Ph.D., Indiana University

Professors

Marilyn Friedman

(Philosophy)

Ph.D., University of Western Ontario

Beata Grant

(Chinese Languages and Literatures)

Ph.D., Stanford University

Angela Miller

(Art History)

Ph.D., Yale University

Vivian Pollak

(English)

Ph.D., Brandeis University

Nancy Staudt

(Law)

Ph.D., University of Minnesota

Karen L. Tokarz

(Law)

J.D., Saint Louis University

LL.M., University of California–Berkeley

Colette H. Winn

(Romance Languages)

Ph.D., University of Missouri–Columbia

Associate Professors

Miriam Bailin

(English)

Ph.D., University of California–Berkeley

Nancy E. Berg

(Modern Hebrew Languages and Literatures)

Ph.D., University of Pennsylvania

Elizabeth Childs

(Art History)

Ph.D., Columbia University

Rebecca Copeland

(Japanese Languages and Literatures)

Ph.D., Columbia University

Margaret Finders

(Education)

Ph.D., University of Iowa

Fatemeh Karamustafa

(Persian Languages and Literatures)

Ph.D., University of London

Laura Rosenbury

(Law)

J.D., Harvard University

Akiko Tsuchiya

(Romance Languages)

Ph.D., Cornell University

Assistant Professors

Lara Bovilsky

(English)

Ph.D., Duke University

Leslie Brown

(History)

Ph.D., Duke University

Lingchei Letty Chen

(Modern Chinese Language and Literature)

Ph.D., Columbia University

Rebecca DeRo

(Art History)

Ph.D., University of Chicago

Tonya Edmond

(Social Work)

Ph.D., University of Texas at Austin

Mona Lena Krook

(Political Science)

Ph.D., Columbia University

Erin McGlothlin

(Germanic Languages and Literatures)

Ph.D., University of Virginia

Shanti Parikh

(Anthropology)

Ph.D., Yale

Adjunct Associate Professor

Linda Lindsey

(Social Thought and Analysis)

Ph.D., Case Western Reserve University

Lecturers

Jami Ake

(Assistant Dean and Academic Coordinator)

Ph.D., Indiana University, Bloomington

Carroll Balot

(Interdisciplinary Project in the Humanities)

Ph.D., Duke University

Ruth Berson

(Women and Gender Studies)

Ph.D., Washington University

Barbara Baumgartner

(Women and Gender Studies)

Ph.D., Northwestern University

Susan Stiritz

(Women and Gender Studies)

Ph.D., Washington University

Courses in the program emphasize the importance of gender in affecting many aspects of the world in which we live, such as its literature, art, history, political structures, and

economic institutions. The curriculum provides opportunities to explore the specificity of women's experiences, concerns, and perspectives and to see how these vary among different social groups and at different points in time. It also provides opportunities to study the social construction of masculinity as it changes historically and cross-culturally. The Women and Gender Studies program examines these complex issues from a solid intellectual and academic perspective.

The Women and Gender Studies program offers both interdisciplinary courses based in the program and more disciplinary based courses coming from departments and programs throughout the University. Examples of interdisciplinary courses located within the program include: Introduction to Women's Studies, Masculinities, Women's Health Care in America, and Race, Sex, and Sexuality: Concepts of Identity. More disciplinary based courses include: Women and Work in the United States, Gender and Education, Performing Arts: Performing Gender, Modern Black Women Writers, Women Artists and 20th-Century Feminism, History of Sexuality in the United States.

The Women and Gender Studies program at Washington University is one of the oldest in the nation. In it, students experience an emphasis on excellent teaching and on close contact between students and faculty.

The Women and Gender Studies program provides numerous opportunities for hands-on learning experiences. Students can earn academic credit for internships with agencies such as the Women's Self-Help Center. Women and Gender Studies students also have the opportunity to study abroad. Increasingly, educational institutions abroad offer programs focused on women, gender, and sexuality, and Washington University students often participate in these programs.

Women and Gender Studies encourages students to think critically and to participate actively in their own education. Most classes are small, rely heavily on classroom discussion, and emphasize interaction between faculty and students. Women and Gender Studies courses can be taken as electives, toward a minor, toward a primary major, or toward a second major. Graduate students can pursue a certificate in Women and Gender Studies.

Women and Gender Studies prepares students for a career that involves women's concerns or issues around gender or sexuality. Many graduates who continue their schooling choose to focus on such issues in medical school, law school, in public health programs, or in social work. Some students envisage a career in college or university teaching, aiming for positions in Women and Gender Studies Departments or in other departments, such as history or literature, where they can apply a Women and Gender Studies focus. Other students have had good experience finding jobs directly out of college working in nonprofit agencies, in the arts, media, or politics.

The Major: A major in Women and Gender Studies consists of nine courses or 27 units

in Women and Gender Studies, 21 of them in courses numbered 300 and above. Included in those units, a student must fulfill four courses from the following categories: (1) A Women and Gender Studies home-based course at the 100 or 200 level; (2) Feminist Theory (335); (3) A course home-based or cross-listed in Women and Gender Studies that analyzes differences in gender either cross-culturally or historically; and (4) Feminist Research Methods (392) or a Senior Honors thesis.

The Minor: A minor in Women and Gender Studies consists of 18 units in Women and Gender Studies, 12 of them in courses numbered 300 and above. All 18 units must be separate courses not double-counted toward a major. It is the policy of the College of Arts & Sciences that a student who chooses to declare a minor must do so no later than the end of the sixth semester.

Undergraduate Courses

WGS 100B. Introduction to Women's Studies
Same as Lw St 107B, AMCS 100B.

Interdisciplinary examination of major topics in women's lives and in the development of feminist theories. For students without previous academic experience in Women's Studies. Note: Some sections may be restricted to first-year or second-year students only. In these sections, computer enrollment limits will be set at zero and students will be enrolled in consecutive order from the wait list until the class is filled. Credit 3 units.

A&S SD TH FA SSP

WGS 102. Women in Science: An Introduction

Throughout the centuries, women were interested and involved in the sciences. Their scientific contributions, however, have often been overlooked and their abilities questioned. The 2005 proposition by then-Harvard President Larry Summers that women's innate differences explain why fewer women succeed in math and science suggests that women continue to face assumptions about their scientific competence. In addition to examining the history of women's participation in science, this class explores the continuing cultural and economic barriers to women interested in science. Starting with a historical overview of women in science, we look at the contributions of women scientists. We review the numbers of women in various fields with good representation, such as biology, and those with few women, such as physics and computer science. Like the prestigious journal *Science*, we also explore whether women do science differently. This course is restricted to Women in Science Focus program participants. Credit 1 unit.

A&S TH

WGS 105. Introduction to Sexuality Studies

An introduction to the history of the study of sexuality in the 19th, 20th, and 21st centuries. An examination of the ways that human groups attach meaning to emotions, desires, and relationships reveals that human sexuality is the product of cultural history. Taking a social constructionist perspective, this course investigates how the deployment of sexuality socializes, organizes, and provides identities to individuals and groups. We also consider why the topic of sexuality provokes such volatile reactions in contemporary American culture, how the discussion of sex is discouraged, and what is at stake in developing skills, knowledge, and attitudes to engage in public discussion of sex. Credit 3 units.

A&S SD SS

WGS 200. Women Writers of the Near and Far East

Same as ANELL 200.

A&S CD TH

WGS 203. Gay and Lesbian Theory

Same as AMCS 2030.

This course provides students with an interdisciplinary examination of the history, politics, and cultural expressions of gay and lesbian communities in American culture. It explores the ways lesbians, gay men, bisexual, and transgendered people construct, participate in, and resist various constructions of gender and sexuality. We question desire and social/cultural power, the nature and power of social change, etc. Particular attention is paid to examining the roots and effects of heterosexism and homophobia, the call for hate crime legislation, the ethics of "outing" and "passing," the impact of AIDS, partnership recognition, and domestic violence on GLBT communities.

Throughout the course students are encouraged to examine the intersections of gender, race, ethnicity, and social class with sexual orientation. Credit 3 units.

A&S SD TH FA SSP

WGS 208B. Masculinities

This course critically examines the subject of masculinity through a number of themes including history, society, politics, race, gender, sexuality, art, and popular culture. Interdisciplinary readings are drawn from the fields of sociology, anthropology, literature, history, art history, and cultural studies. We examine the challenges presented to "masculinity" (and a variety of responses) by the late-20th-century emergence of gender studies. Our goal is to come to a working definition of masculinity/ies and gain an understanding of some past, current, and possible future masculine behaviors, mythologies, ideologies, experiences, and identities. Credit 3 units.

A&S SS FA SSP

WGS 210. Freshman Seminar: Gender and Citizenship

Same as STA 209, AMCS 210, Lw St 2101.

Who is a citizen, and what exactly does this term mean? This freshman seminar investigates how ideologies relating to gender have shaped the rights and duties attached to citizenship in the United States, and how women and men have drawn on those ideologies to make claims to citizenship. We focus on distinct movements in the past and present to identify models of citizenship that have been available to Americans. These movements include the creation of an ideology of "republican motherhood" in the early Republic; the Reconstruction-era debate over the enfranchisement of African-American men; the male culture of 19th-century political parties; the woman suffrage campaign; 20th-century debates over military service for women and for gay men and lesbians; welfare rights and welfare reform; and abortion conflicts since *Roe vs. Wade*. We take an interdisciplinary approach that encompasses scholarly writings and a wide variety of historical and contemporary documents. Credit 3 units.

A&S SD TH FA SSP

WGS 214C. Introduction to Women's Texts

Same as E Lit 214C, AMCS 214C.

Discussion of canonical and nontraditional texts, most by women. Emphasis on how these texts represent gender, how literature contributes to identity formation, and how women have used the written word to change their social and imaginative conditions. Majors in Women and Gender Studies may arrange to do additional course work for 300-level credit. Credit 3 units.

A&S SD TH FA Lit

WGS 2150. Introduction to Literary Study II: Modern Texts, Contexts, and Critical Methods**WGS 230B. Changing Sex Roles**

Same as STA 210B.
A&S SD SS **FA** SSP

WGS 240. Not Members of the Club: Women and Slaves in the Greco-Roman World

Same as Classics 240.
A&S CD SD SS **FA** SSP

WGS 253. Women's Fiction in Contemporary Spain

Same as Span 245.
A&S TH **FA** Lit

WGS 293. Images of East Asia: The Geisha

Same as Asian CC 294.

WGS 300. Independent Study: Internships

This course is only for internships. Credit variable, maximum 3 units.

WGS 3010. Topics in Art History: Women and Medieval Art

Same as Art-Arch 3010.
A&S TH

WGS 3011. Sophomore Honors Tutorial

Same as WGS 303.

WGS 3012. Gender and Politics

Same as Pol Sci 3010.
A&S SS

WGS 303. Gender and Education

Same as Educ 303.
A&S SD SS **FA** SSP

WGS 3031. Gay and Lesbian Theory

This course provides students with an interdisciplinary examination of the history, politics and cultural expressions of gay and lesbian communities in American culture. It explores the ways lesbians, gay men, bisexual, and transgendered people construct, participate in, and resist various constructions of gender and sexuality. We question desire and social/cultural power, the nature and power of social change, etc. Particular attention is paid to examining the roots and effects of heterosexism and homophobia, the call for hate-crime legislation, the ethics of "outing" and "passing," the impact of AIDS, partnership recognition, and domestic violence on GLBT communities. Throughout the course students are encouraged to examine the intersections of gender, race, ethnicity, and social class with sexual orientation. Credit 3 units.

A&S SD TH

WGS 3033. Global Masculinities

Same as WGS 303.

WGS 306. Between Submission and Power: Women and Family in Islam

Same as IAS 3061, Lw St 3061, STA 387, JNE 306, Re St 319.

As a result of recent political upheavals in the Middle East, Muslim woman, her rights, and her role in the society have been the focus of much attention. Who dictates her dress regulation? Who defines her legal rights? Is she entitled to work? Can she be politically active outside her family? Can she be economically independent? What is her reaction to polygamy? An attempt to look at these and similar questions as addressed by traditional Islam and interpreted in major Muslim countries today. Credit 3 units.

A&S CD SS **FA** SSP

WGS 308. Masculinities

Meets with 208B, but with additional course work for 300-level credit. Women and Gender Studies majors and minors. Permission of the instructor is required. Students should register for 208B until permission of the instructor is obtained. Credit 3 units.

A&S SS

WGS 3091. Lesbian, Gay, Bisexual Identity Development

Same as Psych 3091.
A&S SD SS **FA** SSP

WGS 310. Women's Health Care in America

Same as WGS 310, AMCS 311.

This course examines issues surrounding women's health care in America. While the scope is broad, the major emphasis is on the 19th and 20th centuries. Through an examination of popular writing, scientific/medical writing, letters, diaries, and fiction, we look at the changing perceptions and conceptions of women's bodies and health in America. Credit 3 units.

A&S SS **FA** SSP

WGS 3101. Cultural Studies in Sexuality and Gender

Same as Hum 310.
A&S SD TH

WGS 3134. The AIDS Epidemic: Inequalities, Ethnography, and Ethics

Same as Anthro 3134.
A&S SS

WGS 314. Introduction to Women's Texts

Meets with 214C, but with additional course work for 300-level credit. Women and Gender Studies majors and minors. Permission of the instructor is required. Students should register for 214C until permission of instructor is obtained. Credit 3 units.

A&S SD TH **FA** Lit

WGS 316. Contemporary Women's Health

Same as AMCS 328, WGS 316, AMCS 3163.

We identify and study a broad range of health issues that are either unique to women or of special importance to women. The roles that women play as both providers and consumers of health care in the United States are examined. The interface of gender, race, and class and their impact on an individual's access to and experience in the health care system are central concerns. Our topics are wide-ranging and include discussions of breast cancer, mental health, cardiovascular disease in women, women and eating (from anorexia to obesity), reproductive issues (from menstruation to fertility to menopause), as well as the politics of women's health, gender differences in health status, the effect of employment on health, the history of women's health research. Credit 3 units.

A&S SD SS **FA** SSP

WGS 319. Contemporary Women Writers in an International Context

Same as E Lit 319.

This course is designed as a survey of contemporary women's literature (outside of the United States) from an international and multicultural perspective. Special attention is given to the intersection of gender issues with those of race, class, and ethnicity, in these women's writings. For undergraduate students with a background in literature or Women's Studies, or by permission of the instructor. Credit 3 units.

A&S SD TH WI **FA** Lit

WGS 3191. Contemporary American Women Poets

Same as E Lit 3191.
A&S TH **FA** Lit

WGS 3201. Gender, Culture, and Madness

Same as Anthro 3201.
A&S SD SS

WGS 3202. Anthropological Perspectives on Women's Health

WGS 3205. Women in Music
 Same as Music 3025.
A&S SD TH

WGS 323. Topics in English and American Writers

Same as E Lit 323.
A&S TH **FA** Lit

WGS 3241. Topics in Women Writers: Selected English and American Writers

Credit 0 units.
FA Lit

WGS 3282. Sexuality in Africa

Same as AFAS 3282.
A&S CD SS **FA** SSP

WGS 3312. Topics in Politics

Credit 3 units.
FA SSP

WGS 3313. Gender and American Politics

Same as Pol Sci 331B.
A&S SD SS **FA** SSP

WGS 3321. Feminist Philosophy

Credit 3 units.
A&S TH **FA** SSP

WGS 3323. Topics in Gender and Religion: Women and Islam

Same as Anthro 3313.
A&S CD SS **FA** SSP

WGS 335. Feminist Theory

Same as Lw St 335, AMCS 335.

This course begins by examining the 19th- and early 20th-century historical context out of which contemporary feminist theory emerged. We then turn to the 1960s and the emergence of the "Second Wave" of feminism. We focus on some of the major theories that developed during the 1960s, 1970s, and 1980s and the conflicts and internal problems these theories generated. We then examine some of the ways these problems were resolved in feminist theory of the 1990s. The last part of the course focuses on topics of concern to contemporary feminists—such as the family, sexuality, and globalism—and the contributions feminist theory brings to these topics. Open to graduate students by enrolling in WGS 500; contact Women and Gender Studies office for details. Credit 3 units.

A&S SD TH **FA** SSP

WGS 336. Topics in Politics: Women and the Law

Same as Pol Sci 333.
A&S SS **FA** SSP

WGS 337. Women's Literature: Before *Thelma and Louise*: American Women's Adventure Stories

Same as AMCS 337.

American literature is filled with adventurers and adventure stories. Some of the most exciting tales were written by women. Their adventures include Mary Rowlandson's autobiography of her capture by and life with the Indians, E.D.E.N. Southworth's story of a 19th-century heroine who rescues imprisoned maidens and fights duels, and Octavia Butler's science fiction account of a 20th-century black woman who is transported back through time to an ante-bellum plantation. Until recently, American women authors and their stories were largely dismissed because they were perceived to focus on domestic concerns, which

were seen as narrow and trivial. But the works of many women authors are far different from sentimental domestic fiction. In addition to looking closely at the historical and cultural conditions in which the narratives were written, we examine the ways in which these writers conform to and rebel against cultural prescriptions about femininity. Finally, we read some contemporary and current criticism about these works and American women's writing and discuss the politics of canon formation. Tentative Reading List: Mary Rowlandson, *The Captivity and Restoration of Mrs. Mary Rowlandson* (1682); *The Journal of Madam Knight* (1704); Catharine Maria Sedgwick, *Hope Leslie* (1827); E.D.E.N. Southworth, *The Hidden Hand* (1858); Zora Neale Hurston, *Their Eyes Were Watching God* (1937); Octavia Butler, *Kindred* (1979); Paule Marshall, *Praisesong for the Widow* (1983). Writing-intensive. Credit 3 units. **A&S SD TH WI FA Lit**

WGS 340. Israeli Women Writers

Same as MHBR 340.

A&S CD SD TH WI FA Lit

WGS 3413. Women in Early Modern Europe

Same as History 3413.

A&S SD TH FA SSP

WGS 343. Understanding the Evidence: Provocative Topics of Contemporary Women's Health and Reproduction

Same as AMCS 341.

Contemporary topics of women's health and reproduction are used as vehicles to introduce the student to the world of evidence-based data acquisition. Selected topics span and cross a multitude of contemporary boundaries. Issues evoke moral, ethical, religious, cultural, political, and medical foundations of thought. The students are provided introductory detail to each topic and subsequently embark on an independent critical review of current data and opinion to formulate their own notions. Examples of targeted topics for the upcoming semester include, but are not limited to: abortion, human cloning, genetics, elective cesarean section, fetal surgery, hormone replacement, refusal of medical care, medical reimbursement, liability crisis, and gender bias of medical care. Credit 3 units.

A&S SS

WGS 346. Female Gaze: Picturing Abuse in the Media

Same as AMCS 3462.

This course offers an opportunity to examine the ways women's relationships and experiences are pictured in the media. The goal of this class is to help build alternative frames of reference to those currently common in the classic cinema repertoire, TV advertising, and the nightly news. The course combines formal lectures with screenings and discussions of current and classic media from around the world. We screen more than a dozen independent short films by women about women's issues introducing students to diverse constructions of masculinity, femininity, romance, and violence. We examine how shooting and editing techniques affect the meaning of the documentary and manipulate viewers' beliefs. Credit 3 units.

A&S TH

WGS 347. Gender and Citizenship: Writing-Intensive Seminar

Same as History 3470, AMCS 3470.

In this writing-intensive course we examine how ideas about gender have shaped the ways Americans understand what it means to be a citizen. We focus on a variety of cases in the past and present to explore the means by which women and men have claimed the rights and responsibilities of citizenship. The types of questions that we ask include: What rights or duties devolve from the status of citizen? Who qualifies for citizenship and

what qualifies them? What distinct models of citizenship have been available to Americans? How have individuals used notions of gender identity to make claims to political subjectivity? And finally, how do gendered claims to citizenship intersect or conflict with claims based on race, class, ethnicity, or humanity? Prerequisite: previous course work in Women and Gender Studies or permission of the instructor Credit 3 units.

A&S TH

WGS 3506. Women Writers of Early Modern Spain

Same as Span 3506.

A&S TH FA Lit

WGS 351. Creative Women

Same as Art-Arch 3631.

This course investigates women's creativity in both the visual and literary arts of the 19th and 20th centuries in Europe and America. Students examine the role of gender in women's production from the point of view of the experience of the creative individual and her relation to the family, community, and society. Class discussions are based on close readings of texts by such authors as Adrienne Rich, Maxine Hong Kingston, Alice Walker, Virginia Woolf, and Sylvia Plath. Artists to be discussed range from Vigee Le Brun, Mary Cassatt, Romaine Brooks, to Cindy Sherman, Kiki Smith, and Maya Lin. Course requirements include lively class participation, written responses to readings, and one research paper. Prerequisites: any course in women and gender studies or art history, or prior permission from one of the instructors. Credit 3 units.

A&S LA FA AH Lit

WGS 3560. Black Women Writers

Same as AFAS 3651.

A&S SD TH FA Lit

WGS 3561. Women and the Law

Same as WGS 3561.

WGS 357B. Gender Politics in Global Perspective

Same as Pol Sci 357B.

A&S SS FA SSP

WGS 358. Scribbling Women: 19th-Century American Women Writers

Same as E Lit 359, AMCS 3581.

In 1855, Nathaniel Hawthorne wrote to his publisher, William Tichnor, that "America is now wholly given over to a damned mob of scribbling women and I should have no chance of success while the public taste is occupied with their trash." In this class, we examine works of those scribbling women of the 19th century. We read one of the best-selling novels of the century, one that created a scandal and ruined the author's literary reputation, along with others that have garnered more attention in our time than in their own. In addition to focusing on these women writers, we also explore questions about the canon and American literature: What makes literature "good"? What constitutes American literature? How does an author get in the canon and stay there? Finally, in this writing-intensive course, there are frequent writing assignments and a strong emphasis on the essential writing process of drafting and revising. Credit 3 units.

A&S TH FA Lit

WGS 359C. Women in Modern European History, 1700–2000

Same as History 359.

A&S CD TH FA SSP

WGS 362A. With Woman: Birth Assistants in Cross-Cultural Context

Same as Anthro 362A.

A&S SS

WGS 3666. Women in Film: From the Silent Feminists to *Thelma and Louise*

Same as Film 366.

A&S SD TH

WGS 3751. Topics in Women's History

Same as History 3751.

A&S SD TH FA SSP

WGS 382. Readings in Feminist Theology: Women Theologians of the 20th Century

Same as Re St 3811.

A&S TH FA SSP

WGS 3820. Writing Women of Imperial China

Same as Chinese 382.

A&S TH

WGS 383. Topics in Women and Gender Studies

Same as AMCS 3832.

Credit 3 units.

WGS 387. Topics in Women's Literature

Credit 3 units.

A&S TH FA SP

WGS 390. Women, Feminism, and Popular Culture

Same as AMCS 390.

Controversies about feminism in the press, television, radio, literature, and film affect the way that women and women's lives are shown to the general public. We look at images of women in popular culture, and we read analytically texts associated with feminism that have had considerable publicity in recent years. Works by Camille Paglia, Katie Roiphe, Christine Sommers, and Naomi Wolf, all of whom oppose or attempt to modify much feminist thought, are read along with works by those with whom they disagree. How do these writers address questions of women's sexuality, women's place in society, and women's agency? And what effect do the controversies have on attitudes toward women and toward the feminist movement? Credit 3 units.

A&S SD SS FA SSP

WGS 391. Social Construction of Female Sexuality

Same as Lw St 3912.

This course examines the relationship between female sexuality and its social, historical, and ideological contexts. Course materials provide feminist analyses of the changing social organization and cultural meaning of women's bodies, sexual desires, and sexual practices. Prerequisite: Introduction to Women's Studies, Introduction to Women's Texts, or permission from the instructor. Preferences to those who have taken WGS 395 Contemporary Female Sexualities, WGS majors and minors, seniors, and juniors. Credit 3 units.

A&S SS FA SSP

WGS 392. Feminist Research Methods

Same as STA 390.

This course examines feminist epistemologies and research methods. We ask how gender theory and feminist politics shape the kinds of research questions we ask, the types of materials we use, and how we define our relationships with our subjects. We study how feminist scholars have challenged dominant theories of knowledge and the major methodologies employed in their disciplines. Students explore research methods from the social sciences and humanities (interviews, life histories, participation observation, textual analysis) and engage feminist critiques and evaluation of such methods. The course requires commitment to a research project to be completed in stages over the course of the semester. Prerequisite: At least one Women and Gender Studies course at the 100 or 200 level. Credit 3 units.

A&S SS FA SSP

WGS 393. Violence Against Women: Current Issues and Responses*Same as Lw St 390, AMCS 391.*

This course explores the issue of violence against women within families, by strangers in the workplace, and within the context on international and domestic political activity. In each area, issues of race, class, culture, and sexuality are examined as well as legal, medical, and sociological responses. Readings cover current statistical data, research, and theory as well as information on the history of the battered women's movement, the rape crisis center movement, violent repression of women's political expressions internationally, and the effect of violence on immigrant and indigenous women in the United States and abroad. Credit 3 units.

A&S SD SS FA SSP**WGS 394. Communities of Women: Service-Learning Seminar**

This course explores the sometimes vexed relationship between the theory and the practice of women's studies. Students in the course, who must also enroll in the service companion course (3941), participate in service work while taking the course. In class, we discuss and write about the history of women and volunteerism, the ethical challenges of service work, the ongoing affinity between community service and female citizenship, as well as how students' particular experiences challenge or confirm theoretical discussions in women's studies. Because this is a writing-intensive course, students are expected to submit and revise three medium-sized papers as well as to write other, unrevised writing assignments including directed journals and a writing assignment to be determined by each agency partner. The three essay assignments each make up part of a larger paper that is to be submitted (with further revision) at the end of the course. Enrollment limited to Women and Gender Studies students with junior or senior standing or with permission of the instructor. Credit 3 units.

A&S SS WI**WGS 394I. Communities of Women: Service-Learning Seminar Internship Component**

This course is the service companion course for WGS 394 Communities of Women: Service-Learning Seminar. Students must be enrolled in WGS 394. For the internship component, students choose from a number of pre-approved service projects at local agencies whose mission it is to serve women from St. Louis. This course has variable credits. For 2 units of credit, students are expected to work at their partner agency for six to eight hours per week; for 3 units of credit, students are expected to work between eight and 10 hours per week. Students cannot receive credit for any paid work. Credit to be determined in each case.

A&S SS**WGS 394Z. Service-Learning: Projects in Domestic Violence**

In this course, we explore the links between the theories and practices of Women and Gender Studies through a combination of research and direct community engagement. Course readings focus on the ways that poverty and violence, along with race and gender expectations, shape the lives of women. A required community service project for this course asks students to examine the relationship between the course readings and the lives of actual women in St. Louis. Over the course of the semester, students design and execute programming for women at a local community agency. This is a writing-intensive course. Credit 3 units.

A&S SD SS WI**WGS 395. Contemporary Female Sexualities**

The course explores representations of and theories about contemporary women's sexual fantasies, attitudes, behaviors, relationships, and communities. Topics include sexual desire and gender; sexuality and the female life cycle; sexual behavior and gender; sexual variations linked with particular socioeconomic, ethnic, psychological, and physical variables; models of female sexual response; committed and uncommitted relationships; sex and marriage; fertility and its control; and teaching children about sex. We read both literary and theoretical texts with an eye to understanding what roles various sexualities play in personal lives, in relationships, and in communities. Prerequisite: Introduction to Women and Gender Studies, Introduction to Women's Texts, or permission from the instructor. Preferences to those who have taken WGS 391 The Social Construction of Female Sexuality, majors, minors, seniors, and juniors. Credit 3 units.

A&S TH FA SSP**WGS 397I. Gender in Contemporary Art***Same as Art-Arch 397I.***A&S TH FA AH****WGS 3988. Gender and Sexuality in 1950s America: Writing-Intensive Seminar***Same as History 39F8.***A&S SD TH WI****WGS 399. Undergraduate Work in Women's Studies**

Credit 3 units.

WGS 399I. Undergraduate Teaching Assistant

In this course an advanced undergraduate can assist a faculty member in the teaching of an introductory level Women and Gender Studies course. Credit 3 units.

WGS 401. Gender, Culture, and Identity in America*Same as E Lit 401I, AMCS 400, History 400A.*

This course examines how culture functions as an arena for women's articulation of identity within a specific historical and national context. We focus on four women who are important for understanding 19th and 20th century "popular" and "high" culture in America: Charlotte Cushman (theater), Mae West (theater and film), Sylvia Plath (poetry and prose), and Gwendolyn Brooks (poetry and prose). The course uses an interdisciplinary approach and employs feminist theory, including theories of gender performativity. We explore the ways in which gender intersects with other socially constructed categories of American identity such as race, class, and sexuality, from about 1835–2000. Prerequisite: permission of instructor. Completion of at least one Women's Studies course or permission of instructor. Credit 3 units.

A&S SD TH FA SSP**WGS 4010. Fourth-Level Modern Hebrew I: Women and Words****WGS 4011. IPH Thesis Prospectus Workshop***Same as Hum 401.***A&S TH****WGS 403. Race, Sex and Sexuality: Concepts of Identity***Same as History 4033, STA 403, AMCS 401, WGS 403.*

This course examines changes in the meanings of three concepts of identity—race, sex, and sexuality—from the early modern period to the present. The course begins by looking at early modern constructions of these concepts in Western Europe. We then focus on changes occurring during the course of the 18th and 19th centuries in Europe and the United States and at how such changes were similar and different among these three concepts. We then examine 20th-century

challenges to 19th-century constructions. The course concludes by studying the relationship between these challenges and 20th-century identity political movements organized around these concepts. Prerequisite: completion of at least one Women and Gender Studies course or permission of the instructor. Credit 3 units.

A&S SD SS FA SSP**WGS 4031. Topics in Gender and Judaism: Gender and Sexuality in Judaism***Same as JNE 403.***A&S SD TH FA SSP****WGS 4032. Gender and Labor Politics in East Asia***Same as Anthro 4031.***A&S SS FA SSP****WGS 407. Topics in Women's History***Same as History 3752.***A&S SD TH FA SSP****WGS 408. Gender in Contemporary Art***Same as Art-Arch 408.***A&S SD TH FA AH****WGS 409. Gender, Sexuality, and Change in Africa***Same as AFAS 409.***A&S SD SS WI FA SSP****WGS 410I. Medieval English Literature II***Same as E Lit 410I.***A&S TH****WGS 4104. Studies in Genre: Gender and Genre***Same as German 4104.***A&S CD TH WI FA SSP****WGS 4106. Studies in Gender***Same as German 4106.***A&S SD TH WI****WGS 4112. Body and Flesh: Theorizing Embodiment***Same as Anthro 4112.***A&S SS****WGS 4122. Language and Gender***Same as Anthro 4122.***A&S SD SS FA SSP****WGS 415. Topics in Women and Literature***Same as E Lit 415.***A&S TH FA Lit****WGS 415I. Feminist Art and Theory 1970 to Present***Same as Art-Arch 415.***A&S TH****WGS 419. Feminist Literary Theory***Same as WGS 419, AMCS 418, Span 419, Ital 419, French 419, Comp Lit 419, E Lit 476.*

This course is intended to acquaint students with basic ideas and issues raised by a diversity of voices in contemporary feminist criticism and theory. Readings cover a wide range of approaches and tendencies within feminism, among them: French feminism, Foucauldian analyses of gender and sexuality, lesbian and queer theories, Third World/post-colonial feminism, and feminism by women of color. Given that feminist literary theories developed in response to and in dialogue with wider sociopolitical, cultural, and philosophical currents, the course includes application of theory to literature, but also explores feminist literary theory in an interdisciplinary context. Note: This course is in the core curriculum for the Women and Gender Studies graduate certificate. Prerequisites: completion of at least one Women and Gender Studies course and permission of the instructor. Credit 3 units.

A&S TH

WGS 420. Contemporary Feminisms*Same as Phil 4202, WGS 420.*

The purpose of this course is to provide a framework, a map, within which students can locate feminist ideas. The course, which may be presented historically, explores and compares different types of feminism selected from, for example, the following feminisms: liberal; Marxist; socialist; radical; lesbian; black; existentialist; postmodern. The class considers how such feminisms analyze the nature and sources of women's oppressions, the worlds they envision, and the means they use to bring about change. Note: This course is in the core curriculum for the Women and Gender Studies graduate certificate. Prerequisites: completion of at least one Women and Gender Studies course and permission of the instructor. Credit 3 units.

A&S SD TH FA SSP**WGS 4201. The Novel in the Feminine (Le Roman au féminin)***Same as French 4201.***A&S TH FA Lit****WGS 4221. Topics in Women and French Literature:***Same as French 4221.***A&S TH FA Lit****WGS 423. Topics in American Literature: Whitman and Dickinson***Same as E Lit 423.***A&S SD TH FA Lit****WGS 4232. Topics in American Literature****WGS 4233. Topics in American Literature I***Same as E Lit 4231.***A&S TH FA Lit****WGS 4241. Topics in American Literature II***Same as E Lit 424.***A&S TH FA Lit****WGS 432. Women Writers of the 20th Century***Same as Ital 432.***A&S SD TH WI FA Lit****WGS 4333. Women of Letters***Same as French 4331.***A&S TH FA Lit****WGS 4362. Local Genders, Global Transformations***Same as Anthro 4362.***A&S SS FA SSP****WGS 4363. Sex, Gender, and Power***Same as Anthro 4363.***A&S SS****WGS 437. Global Feminisms***Same as IAS 4370.*

This course examines the global dimensions of feminist organizing and policy-making, drawing on both historical and contemporary examples. It applies insights from research on social movements, state-society relations, and multi-level governance to explore the formation, activities, and strategies of international and transnational women's networks on issues ranging from suffrage and equal rights to domestic violence and gender quotas. It considers interactions with local and national women's movements, as well as states and international organizations, and weighs the opportunities and constraints involved in mobilizing beyond the nation-state in struggles against inequality in global and national arenas. Credit 3 units.

A&S SS**WGS 438. Contemporary American Feminism and Theater***Same as Drama 438.***A&S TH FA AH****WGS 440. Women in the History of Higher Education and Professions***Same as Educ 440.***A&S SD TH FA SSP****WGS 445. Japanese Fiction***Same as Japan 445.***A&S CD TH WI FA Lit****WGS 4451. Seminar: Women and Comedy****WGS 4454. Irish Women Writers: 1800 to Present***Same as E Lit 4454.***A&S TH FA Lit****WGS 4472. Spanish-American Women Writers II***Same as Span 4472.***A&S SD TH FA Lit****WGS 4479. Senior Seminar in Religious Studies: Contemporary Approaches to the Study of Women and Religion***Same as Re St 479.***A&S SD TH****WGS 4494. Modern Japanese Women Writers: Madame Butterfly's Delinquent Daughters***Same as Japan 449.***A&S CD SD TH WI****WGS 4502. Women and the Medieval French Literary Theory***Same as French 450.***A&S TH FA Lit****WGS 4550. English Novel of the 18th Century: Jane Austen***Same as E Lit 455.***A&S TH FA Lit****WGS 4581. Gender, Politics and Writing in Women's Fiction of the Post-Franco Era***Same as Span 458.***A&S TH FA Lit****WGS 462. Topics in English Literature***Same as E Lit 462.***A&S SD TH FA Lit****WGS 4691. East Asian Feminisms***Same as East Asia 469.***A&S SD TH****WGS 4701. Readings in Chinese Literature: Gender and Religion***Same as Chinese 470.***A&S TH FA Lit****WGS 4711. Gender and Religion in China***Same as Re St 4711.***A&S TH FA SSP****WGS 475. Intellectual History of Feminism***Same as E Lit 475, LH 475, History 4751, Phil 4751, WGS 475, Pol Sci 4501.*

Focus on feminist thought in Western culture. Course traces the relationship among emergent feminist ideas and such developments as the rise of scientific methodology, Enlightenment thought, revolutionary movements and the gendering of the political subject, romanticism, socialism, and psychoanalysis. Readings drawn from both primary sources and recent feminist scholarship on the texts under consideration. Authors considered: Mary Wollstonecraft, J.S. and Harriet Taylor Mill, Elizabeth Cady Stanton, Frederick Engels,

Josephine Butler, Emma Goldman, Karen Horney, and Simone de Beauvoir. Note: This course is in the core curriculum for the Women and Gender Studies graduate certificate. Prerequisites: completion of at least one Women and Gender Studies course and permission of the instructor. Credit 3 units.

A&S TH FA Lit**WGS 4771. Gender in 19th-Century Art***Same as Art-Arch 4771.***A&S SD TH FA AH****WGS 482. Reading Seminar in Gender and Chinese Literature: Women in the Chinese Literary Tradition***Same as Chinese 482.***A&S TH FA Lit****WGS 483. Gender and Genre***Same as French 483.***A&S SD TH FA Lit****WGS 487. Topics in American History***Same as History 487.***A&S TH FA SP****WGS 4873. Theater Culture Seminar: Gender in Contemporary Performances****WGS 4877. Discourses on Gender in 19th- and 20th-Century Spain***Same as Span 487.***A&S SD TH****WGS 4889. Reframing Feminist Art of the 1970s***Same as Art-Arch 4889.***A&S TH FA AH****WGS 489. The Battle of the Sexes: Sexual Conflict on Stage from Aeschylus to Albee***Same as Drama 489.***A&S TH****WGS 4908. Advanced Seminar: Women in American Society: Women in Social Movements***Same as History 4907.***A&S SD TH FA SSP****WGS 4918. Advanced Seminar in History***Same as History 4918.***A&S TH FA SSP****WGS 4934. Advanced Seminar in History***Same as History 4934.***A&S TH FA SSP****WGS 4974. Advanced Seminar in History: Gender and Property Law***Same as History 4974.***A&S TH FA SSP****WGS 4982. Advanced Seminar: Women and Confucian Culture in Early Modern East Asia***Same as History 4982.***A&S TH****WGS 499. Honors Thesis: Research and Writing**

Enrollment in this course is limited to students accepted into the Honors Program. Petition for permission to enroll is available in the Women and Gender Studies Office, 18 Busch Hall. Credit 3 units.

A&S TH**WGS 4990. Advanced Seminar: History of the Body***Same as History 4990.***A&S SD TH****WGS 500. Independent Study**

Directed readings and research in women and gender studies. Prerequisite: permission of instructor. Credit variable, maximum 4 units.

FA SSP

Olin School of Business

Olin School of Business

Mahendra Gupta, Ph.D.
Dean

Jim Beirne, M.B.A.
Associate Dean and Director of Weston Career Center

Joseph P. Fox, M.B.A.
Associate Dean for M.B.A. Programs

Gary M. Hochberg, Ph.D.
Associate Dean for the Undergraduate Program

Glenn MacDonald, Ph.D.
Senior Associate Dean for Academic Affairs

Chakravarthi Narasimhan, Ph.D.
Director of Doctoral Programs

Anjan Thakor, Ph.D.
Senior Associate Dean for Academic Affairs

Ronald Allen, M.B.A., M.L.S.
Asa F. Seay Librarian

Brian T. Bannister, M.B.A.
Associate Dean for Budget and Operations

Kenneth C. Bardach, M.B.A.
Associate Dean of Executive Education

Deborah F. Booker, M.B.A.
Associate Dean and Director of External Relations

Kenneth A. Harrington, M.B.A.
Director of Skandalaris Program

Konstance P. Henning, B.S.
Associate Director of Undergraduate Advising

Brad S. Iftner, M.S.
Associate Director of Undergraduate Advising

Steven J. Malter, M.S.
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Karen J. Margo, M.B.A.
Senior Director of Development

Barbara B. McKay, M.A.
Director of Academic and Administrative Affairs

Cynthia Newell
Registrar

Edward M. Novak, M.M.
Assistant Dean and Director of Information Services

Lanna K. Skadden, M.S.
Director of Undergraduate Advising

About the Olin School of Business

The Olin School of Business is named for John M. Olin, a business leader, a philanthropist, and a member of the University's Board of Trustees for nearly 40 years.

The Olin School of Business provides you with a diverse professional business education within the context of a broad-based liberal arts setting. Although the Olin School is large enough to offer comprehensive business programs and resources, it has the comfortable, friendly feel of a small

school community. At present, approximately 658 full-time undergraduates are enrolled in the Olin School, with 67 full-time faculty members.

As an undergraduate student at the Olin School, you may choose from majors in accounting; entrepreneurship; finance; international business; managerial economics and strategy; marketing; operations and supply chain management; and organization and human resources, all leading to the Bachelor of Science in Business Administration (B.S.B.A.) degree. Combined studies opportunities are also available and are discussed later in this section.

Faculty of the Olin School of Business are nationally renowned teachers, scholars, and practitioners, who are leaders in their fields. You will have access to your professors in small class settings, independent study opportunities, conferences, special lectures, research projects, and informal gatherings.

John E. Simon Hall is the hub of activity for Olin students. This well-designed state-of-the-art facility features the following:

- a computer center equipped with individual work stations and rooms for group work
- Kopolow Business Library with plenty of study space and an extensive open-stack collection
- modern classrooms, many of which are designed in a "case-study" format
- rooms for small-group study
- several student lounge areas that provide space for study and relaxation
- an auditorium for special presentations.

The St. Louis Business Community

Washington University's Danforth Campus is located in the center of greater St. Louis — the 18th largest metropolitan area in the United States — and is just 10 minutes west of downtown business and cultural centers. St. Louis ranks 13th in the number of Fortune 500 company headquarters. Companies such as Anheuser-Busch, the Brown Group, and Emerson were all founded in St. Louis. St. Louis business leaders maintain close contact with Olin students, assisting in and outside the classroom and providing internships and other experiential learning opportunities.

Undergraduate Programs Bachelor of Science in Business Administration Degree

As an undergraduate student in business, you take a common core of course work that touches on the major functional areas of business. Beyond this common background in business, you have the ability to study across disciplines and take advantage of the variety of courses offered. At least 40 percent of your business curriculum must be taken in nonbusiness subjects. You will have the opportunity to pursue studies tailored to your particular interests.

Majors

Because majors in the business curriculum are offered as an option, you may or may not choose to pursue a formal business major, or you may choose to complete more than one major. You may choose a major from the following fields of business study:

- Accounting
- Entrepreneurship
- Finance
- International Business
- Managerial Economics and Strategy
- Marketing
- Operations and Supply Chain Management
- Organization and Human Resources

For more information about specific course requirements for each major, you should refer to the Olin School's **Undergraduate Student Handbook**.

Instruction Methods

Our faculty uses a variety of teaching techniques to present material to you. Depending on the particular course requirements, an instructor may choose to employ simulation exercises, the case method, business games, role playing, field trips, research projects, lectures, and seminars. In addition, faculty members often invite area business leaders to lecture in classes.

Combined Degree Opportunities

As a business student, you have the opportunity to earn two undergraduate degrees simultaneously. While working on your B.S.B.A. degree, you may also work toward another undergraduate degree offered at the University. You must be admitted to the other degree-granting program, and you must meet specific degree requirements for both schools. Typically, this option requires additional time to complete all requirements. For example, if you combine your business degree with a degree from the College of Arts & Sciences, you must complete a minimum of 150 units between the two disciplines. Of the 150 units, at least 90 units must be from the College and at least 48 units from the Olin School. Some courses may be used to satisfy both degree requirements simultaneously. Because requirements for a second degree vary from discipline to discipline, you should talk with your primary adviser to plan your program.

3+2 Joint Degree Program

A special five-year program combining an undergraduate degree with the Master of Business Administration degree is available to a select number of undergraduates. Joint degree programs include: the A.B.-M.B.A. degrees offered with the College of Arts & Sciences, the B.S.-M.B.A. degrees offered with the School of Engineering & Applied Science, and the B.S.B.A.-M.B.A. degrees offered through the Olin School.

In the joint degree program you must complete at least 90 units before entering the Olin School, where you must then complete an additional 60 units of graduate-level courses. You must begin the full-time M.B.A. program in the fall semester. If your undergraduate major is in the School of

Engineering & Applied Science or in the College of Arts & Sciences, you may complete up to 15 units of remaining undergraduate course work after you have begun the M.B.A. program, provided the courses are at the 400 level or above. You should consult your academic adviser during your sophomore year to ensure compliance with specific degree requirements.

Admission to the 3+2 program is extremely competitive. You must have a superior academic record, an outstanding performance on your Graduate Management Admission Test (GMAT), and substantive summer internship experience in the corporate world. You apply during the winter of your junior year. An evaluative interview is required. You may obtain information and application materials for the M.B.A. program from the M.B.A. Admissions Office in Simon Hall, Room 114, or mba@olin.wustl.edu.

Master of Accounting (M.A.C.C.)

If you are interested in pursuing a career in public accounting, you may wish to think about the Master of Accounting (M.A.C.C.) program. This program is designed to allow students to combine an undergraduate degree with an M.A.C.C. degree in five years, thereby completing the 150 units required to sit for the certified public accountant (CPA) examination. In an integrated five-year program, you enroll in graduate course work during your fourth and fifth years of study. Specifically, you must complete 45 units of course work at the 400 level or higher, and 30 of the 45 units must be at the 500 level. As a B.S.B.A. degree candidate, you are still required to complete all specific course work requirements for your undergraduate degree. Business course requirements not taken at the undergraduate level would be taken at the graduate level. You must apply during your third year in the undergraduate program. You are required to maintain a B grade point average in course work at the graduate level to remain in good academic standing. Further information about this program is available from the Student Services Office in Simon Hall, Room 12.

Combined Majors

As a business student, you have the option to major in two areas from different schools. For example, you could earn a B.S.B.A. degree with a major in finance and a major in English literature from the College of Arts & Sciences. You must complete the specific courses required for the second major, but you are not required to complete the general requirements for the second degree. You should consult with your academic adviser for additional information.

Minors

The Olin School allows you to choose a nonbusiness minor in any recognized academic discipline within the University. You must satisfactorily complete all requirements for both the B.S.B.A. degree and the minor. Required courses for a minor may range from 15 to 27 units, depending on the specific regulations of the academic department.

Bachelor of Science in Business Administration Requirements

The Bachelor of Science in Business Administration degree is awarded to you by recommendation of the faculty. Standards established by the faculty for recommendation are:

1. Satisfactory completion of requirements regarding required and elective courses, accumulation of a minimum of 120 units of course work, and satisfactory fulfillment of other requirements established in accordance with the rules and regulations of the Olin School.
2. Completion of the last 30 units in residence at Washington University.

I. Nonprofessional Requirements

(a minimum of 48 units)

This course work must be taken outside the Olin School to satisfy these degree requirements.

- A. English Composition (3 units): You must demonstrate proficiency in reading and writing the English language by satisfactorily completing E Comp 100 with a grade of C+ or better.
- B. Mathematics (3–6 units): You must complete Math 127-128, or other calculus courses approved by the Olin School.
- C. Distribution Requirements (18 units): You must complete 3 units of physical and life sciences, 3 units of humanities, 6 units of international studies, 3 units of behavioral analysis, and 3 units of ethics and values.

Approved course selections are available in the University's **Course Listings**. Certain business courses may satisfy these distribution requirements; if taken, they also will count toward the professional electives requirement. If you select an economics course to satisfy a distribution requirement, the units may count either toward general elective credits or professional elective credits.

- D. Advanced Electives (9 units): You must complete at least 9 graded units of advanced nonbusiness course work (300 level or above). Advanced electives are defined as any nonbusiness course numbered 300 or above, excluding economics and University College courses. Advanced electives may also satisfy a distribution requirement. Economics courses may count toward either general or professional electives but not toward your advanced nonbusiness elective requirement.
- E. General Electives: All remaining units must be completed from other divisions of the University. Advanced economics course work may count toward general elective credit.

II. Professional Requirements

(a minimum of 48 units)

- A. Core Requirements (33–36 units):
Mgt 100/487
MEC 290
MEC 292 or Econ 104B

QBA 120 and 121
Acct 2610 and 2620
OSCM 230 and 356
Fin 340
Mkt 370
OB 360

- B. Professional Electives (minimum of 12–15 units): Professional electives are nonrequired business courses offered by the Olin School. If you complete Mgt 100 as a first-year student, you must take a minimum of 12 units; if you do not complete Mgt 100, you must complete a minimum of 15 units including Mgt 487.

III. Electives (24 units)

To ensure that your educational requirements are fulfilled, electives should be chosen in consultation with your academic adviser.

Academic Options for Non-B.S.B.A.-Degree Students

If you are a student in another undergraduate division of the University, you may choose to complete a second major in a business discipline or pursue a minor in business.

Second Major in a Business Discipline Requirements

A second major in a field of business allows you to combine your academic interests between two schools. Opportunities for second majors are offered to all non-B.S.B.A.-degree students. You may select a major from the following disciplines:

- Accounting
- Entrepreneurship
- Finance
- International Business
- Managerial Economics and Strategy
- Marketing
- Operations and Supply Chain Management
- Organization and Human Resources

If you combine your academic interests, you are required to follow the degree requirements for your primary major. Requirements for your second major include a core set of requirements and 12–18 units of business course work. Core requirements are as follows:

Mgt 100/487
Math 131 and 132
MEC 290
MEC 292 or Econ 104B
QBA 120 and 121
Acct 2610 and 2620

Because your core requirements are drawn from both business and nonbusiness disciplines, you are required to complete a minimum of 24 business units through the Olin School.

Transfer students from another institution must take a minimum of 18 credits through Olin.

Minor in Business Requirements

For a business minor, you must complete the following requirements for a total of 18 units.

I. Required Courses (12 units):

Acct 2610
MEC 290 or Econ 401
Mgt 100/487
QBA 120

II. Core Electives—at least two of the following (6 units):

Fin 340
HRM 320A or OB 360
Mkt 370
OSCM 356

Special Opportunities**Independent Study**

Independent study under the direction of a faculty member is available on a selective basis. The purpose of independent study is to provide an opportunity for you to pursue subject matter beyond the specific course offerings found in the Olin School. Projects may be done for 1–6 units, but normally no more than 3 units will be granted in any one semester. For more information, you should refer to the Olin School's *Undergraduate Student Handbook*.

Students may apply a maximum of 6 units of independent study in business and 6 units outside of the Olin School toward the 120-unit degree requirement.

Internship Opportunities

Olin juniors or seniors who have completed the core requirement and one advanced elective in the appropriate major field may apply to receive credit for internship experience. Students must work under the direction of a faculty member to complete an academic paper/project. The Internship Petition form must be submitted to the student's academic adviser by the end of the second week of the academic semester.

Several departments on campus offer other special internship opportunities. B.S.B.A. students are also eligible to participate in the Washington, D.C., Internship Program administered through the Department of Political Science in Arts & Sciences. With the exception of the Washington, D.C., Internship Program and the International Internship Programs, a maximum of 6 units of internship course work may be applied toward the B.S.B.A. degree.

Undergraduate Teaching Assistantships (UTAs)

In this challenging program, outstanding students are chosen to assist various professors with their course development work or research efforts. Students may conduct library research, perform computer programming, develop new learning materials for class, assist other students with their writing skills, or tutor in various areas of the curriculum.

Participation in the UTA program is voluntary and may begin as early as the first year. As a participant, you are paid the going rate for student assistants. UTA experience also impresses company recruiters.

Study Abroad

As a business student, you have the opportunity to participate in various study abroad programs. You may choose to (1) apply to the Olin School's International Internship Programs, (2) apply to the London Summer Program, (3) apply to participate in an academic exchange program in Hong Kong, Spain, or Australia, or (4) apply to participate in one of the study abroad programs sponsored by the Office of International and Area Studies in the College of Arts & Sciences.

International Internship Programs

Our International Internship Programs offer you the opportunity to combine classroom learning with an internship in Koblenz, London, or Paris. You earn 15 units of academic credit in any of these programs by completing:

- Six units of academic credit in appropriate areas (e.g., language study in non-English-speaking locations)
- Full-time internship placement of approximately 15 weeks (in London, Paris, or Koblenz)
- Significant research project in conjunction with the work experience. In Paris and Koblenz, these projects are done in French or German, respectively.

The International Internship Programs are open to all Olin juniors and seniors who have completed the equivalent of five semesters of course work (75 units) and the specific prerequisites for the particular program of study. Second majors and minors in business may also be eligible to apply. There is a minimum GPA requirement of 2.85 in your overall course work and 3.0 in your professional course work. Eligibility requirements are subject to change. Additional information is available in Olin's *Undergraduate Study Abroad Opportunities* brochure.

Other Study Abroad Opportunities Through Olin

London Summer Program. This program offers you the opportunity to study international business in London. The program consists of two related courses: a management elective and a finance elective. You may enroll in these courses the summer between your junior and senior year in Olin. Additional information is available in Olin's *Undergraduate Study Abroad Opportunities* brochure and at the following Web site: www.olin.wustl.edu/faculty/littlej.

Exchange Programs. Olin students may participate in academic exchange programs at the University of Melbourne or Australian National University in Australia, at Chinese University of Hong Kong or Hong Kong University of Science and Technology in Hong Kong, or at Carlos III University in Madrid, Spain. You may participate in any of these exchange programs and take course work that allows you to continue your studies toward your Olin School degree without interruption. Additional information is available in Olin's *Undergraduate Study Abroad Opportunities* brochure.

Semester in Washington, D.C.

The Washington Semester Program offers you the opportunity to observe and participate in the functions of the federal government or an affiliated agency, a national program, or a policy-making institution. The program is an internship in Washington, D.C., complemented by a weekly seminar on an appropriate topic and by an independent study project culminating in a research paper supervised by a faculty member of the Olin School. You earn 15 units of credit for the semester.

Internship areas of particular interest to business students are business, consumer affairs, economic policy, finance and accounting, international affairs, labor relations, and public relations. For information, you should contact the College of Arts & Sciences.

Lecture Series

The David R. Calhoun, Jr. and Kellwood Lecture series and various alumni and student groups bring to campus distinguished speakers of national and international prominence. These programs offer students the opportunity to interact with recognized business leaders from a variety of fields. Recent speakers have included Hugh Grant, CEO, Monsanto; Edward Whitacre, CEO, SBC Communications; J. Patrick Mulcahy, CEO, Energizer Holdings; David Daberko, Chairman and CEO, National City Corp.; John Biggs, former Chairman and CEO, TIAA-CREF; Hal Upbin, CEO, Kellwood Co.; Mary Junck, CEO, Lee Enterprises; and Doug Albrecht, CEO, Centric Group; among others.

Student Services and Resources**Weston Career Center**

To provide you with the most advanced career planning and job search services, the Olin School operates its own career resources center. Weston Career Center services are available to all full-time business students, to business alumni, and to any other students referred to the center.

Career Planning Guidance

The Weston Center offers you career education, information, and counseling. You are encouraged to meet with the center's staff early in your undergraduate career to discuss your professional goals and again before beginning any job searches.

The center offers a Career Preparation Series (CPS), designed for students in the junior year and required for students wishing to register for the on-campus interview program. CPS covers the basics of the career planning process and includes various workshops on self-assessment, résumé writing, information gathering, and interviewing techniques. You are required to complete a self-assessment exercise and to conduct at least one informational interview. You also may take advantage of videotaped practice interviews. You also may make use of

Career Connections, a University-wide listing of alumni.

The center hosts a series of alumni career panels in various functional areas and arranges other opportunities for students to network with business alumni.

Employer Recruitment

One of the center’s most visible services is the active on-campus interview program that takes place throughout the academic year. More than 400 organizations recruited Olin B.S.B.A. students in 2004-05 by posting jobs, requesting résumés, and conducting on-campus interviews.

Firms that recruit at the Weston Center represent all major industries, including commercial banking, consulting, financial management, government, manufacturing, merchandising, petroleum/mining, and public accounting. Many companies also conduct informational sessions on campus to acquaint you with their particular firms and employment opportunities.

In response to frequent contacts from employers with job openings, the center has a résumé referral program and a large database of job postings (full-time, part-time, and summer) available on the Internet.

Summer Employment

The center can assist you in your search for summer internships. Services include workshops, on-campus interviews, direct referrals for summer employment opportunities listed

with the office, and job postings. The center also offers assistance in developing strategies and employer contacts, as well as advice on résumé and cover letter preparation.

B.S.B.A. Full-time and Internship On-campus Companies

- A.G. Edwards and Sons, Inc.
- ABN-AMRO, Inc.
- Accenture
- ACNielsen BASES
- American Business Resources, Inc.
- Bank of America Corp.
- Bear Stearns
- Boeing Co.
- BP Amoco
- Cap Gemini Ernst & Young U.S., LLC
- Chicago Trading Company (CTC)
- CIBC World Markets Corp.
- Citibank, Inc.
- Colliers Turley Martin Tucker
- Deloitte Consulting
- Edward Jones
- ExxonMobil Corp.
- Federal Reserve Bank of St. Louis
- Freddie Mac
- Gap, Inc.
- G-Bar Limited Partnership
- General Mills, Inc.
- KPMG LLP
- Legg Mason Wood Walker, Inc.
- Lopata, Flegel & Co., LLP
- Lord Abbett and Company
- McMaster-Carr Supply Co.
- Macy’s-Federated Department Stores, Inc.

- Metropolitan Life Insurance Co.
- Monsanto Company
- Morgan Keegan & Co., Inc.
- Northwestern Mutual Life Insurance Company
- Oak Brook Bank
- PricewaterhouseCoopers
- Procter & Gamble Company
- Reliant Energy
- Renaissance Financial, Inc.
- Robert W. Baird and Company, Inc.
- Rubin Brown Gornstein & Co. (RBG & Co.)
- Southwest Securities Group, Inc.
- Spectrum Healthcare Services
- Stifel Financial Corp.
- Summit Strategies Group
- U.S. Department of Agriculture
- Union Pacific Corp.
- Wells Fargo and Co.
- Yellow Freight System, Inc.

Academic Support Services

Academic Advising

The Olin School provides you with expert academic advising and support. The Olin School has a director and three associate directors of undergraduate advising, who serve as general advisers to all undergraduate students on procedural matters, course planning, registration, and other academic matters. Faculty members also serve as advisers to students interested in specific areas of business.

Typical Four-Year Curriculum for a B.S.B.A. Student

Fall	<i>Units</i>	Spring	<i>Units</i>
First-year			
Management 100 ¹	3	Managerial Economics 290	3
Math 127 or higher ²	3	Accounting 2610	3
English Composition 100	3	Math 128 or elective ³	3
Electives ⁴	<u>6</u>	Electives	<u>6</u>
	15		15
Sophomore			
Quantitative Business Analysis 120	3	Quantitative Business Analysis 121	3
Core requirement(s) ⁵	3-6	Core requirement(s)	3-6
Electives	<u>6-9</u>	Electives	<u>6-9</u>
	12-18		12-18
Junior			
Core requirements	6	Core requirements	6
Electives	<u>9</u>	Professional elective	3
	15	Electives	<u>6</u>
			15
Senior			
Professional electives	6	Professional electives	6
Electives	<u>9</u>	Electives	<u>9</u>
	15		15

¹ Required only of first-year students entering the Olin School during the fall semester.

² Students with advanced mathematics backgrounds should take Math 128 in the fall. Students who wish to enroll in additional mathematics courses should enroll in Math 131 and/or 132 to satisfy the calculus requirement.

³ Students who completed Math 128 in the fall may enroll in an elective of their own choosing.

⁴ There are 60 units of electives noted in the above curriculum. Of these, the student must complete 39-42 units of nonbusiness course work, including 3 units in physical/life sciences, 3 units in humanities, 6 units in international studies, 3 units in behavioral analysis, 3 units in ethics/values, and 9 units in advanced nonbusiness courses (numbered 300 or above).

⁵ Of the core requirements, 33 units still need to be completed. Refer to page 280 for specifics on core requirements. A total of 120 units is needed to meet B.S.B.A. degree requirements.

Peer Advising Program

In this program, other business students, who are familiar with the University and with Olin’s programs and policies, help incoming students make a smooth transition to the University by providing informal peer advising services.

Tutoring Service

As an undergraduate student, you may take advantage of Olin’s free tutoring service. You may receive two hours a week of tutoring for each course in which you are enrolled.

Additional Resources

Center for Research on Economics and Strategy

The CRES’s objective is to advance understanding of firms and markets by supporting scientific research on these subjects, especially research employing state-of-the-art analytical and/or empirical methods to address substantive questions and intended to be published in top-tier academic journals. Topics include, but are not limited to, industrial organization, business strategy, and applications of game theory such as organization and incentive design, pricing, and industry evolution. Research at the interface of economics and strategy is of particular interest.

The center’s activities include (1) an Economics and Strategy seminar series in which both internal and external research will be presented; (2) a short-term visitor’s program in which researchers from other domestic or international institutions spend short periods at Olin; (3) conferences; (4) direct support for research, such as funds for research assistance or data collection beyond what would normally be funded by faculty research resources; (5) fostering interaction between the faculty and M.B.A./B.S.B.A. students by, for example, naming top-performing students CRES Fellows and supporting their assisting with, or in some way participating in, faculty research projects; and (6) dissemination of research through a center Web site.

Murray Weidenbaum Center on the Economy, Government, and Public Policy

Founded in 1975, the center has played a distinctive role in public policy research by providing timely, scholarly analyses of issues affecting America’s system of private enterprise. Its mission is “to improve public understanding of the private enterprise system in a global context, thereby fostering a public policy environment in which the U.S. market economy can prosper.”

The center focuses on three important public policy areas: regulatory reform, environmental issues, and international competition. In addition, the center’s studies on management issues provide valuable information to business executives and business school professors around the country.

Center for Experiential Learning

The Center for Experiential Learning gives you the opportunity, with the support of Olin faculty, to apply leading-edge business practices and practical management solutions to challenges facing actual businesses and organizations. Current opportunities include the following:

The Skandalaris Center for Entrepreneurial Studies includes a comprehensive curriculum and related experiential learning opportunities. It allows students the chance to start their own businesses or work with outside entrepreneurs, venture capital firms, and business incubators.

In the Investment Praxis course, you manage two separate investment funds comprising the Olin School’s endowment. You encounter the same institutional restrictions that are faced by professional managers and experience firsthand the issues and considerations of managing investments for the benefit of others. The first fund of approximately \$500,000 invests in equities benchmarked by the S&P 500. The second fund, founded in 2000, will permit investments in fixed-income and other non-equity securities. Governance of both Praxis funds is the responsibility of our students in the course. At the end of each semester, you will present the fund’s progress to the Praxis Advisory Board. Further information is available at realworld.wustl.edu/praxis.

Regulations and Policies

Registration

Detailed registration instructions and registration materials are available to you if you are currently enrolled in the Olin School or are newly admitted.

Class Attendance

The Olin School allows each instructor of a course to decide how many absences you may have and still pass the course. The Olin School expects faculty to give reasonable consideration to unavoidable absences and to the feasibility of making up work that has been missed. You are expected to explain to your instructors the reasons for any absences and to discuss with them the possibility of making up missed assignments.

If the nature of an illness is such that you expect to be absent from classes for an extended period of time, you should contact your academic adviser.

Units and Grades

A unit is a measure of quantity given for one hour of lecture or recitation course a week for one semester. A grade point is a measure of the quality of work done in the course.

The Olin School employs the following grading system in evaluating student performance:

Grade	Grade Points Per Unit
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7

C+		2.3
C		2.0
C-		1.7
D+		1.3
D		1.0
D-		0.7
F		0.0
P#	pass	no grade points
F#	failure	no credit
I	incomplete	temporary grade for maximum of 60 days
W	withdraw	no grade points
R	repeat	no credit

Grade points per course are calculated by multiplying the number of units of a course by the grade points earned. A minimum 2.0 grade point average in all course work taken at the University and a 2.0 in all professional course work taken at Olin must be achieved to satisfy B.S.B.A. graduation requirements.

You may retake a course if a higher grade is required or desired. The initial grade received in the course remains on your record, along with an R to indicate that the course was repeated. Credit is given only once for taking the course, and only the higher grade is used in computing your grade point average.

Pass/Fail Option

You may take a maximum of one course per semester on a pass/fail basis. A grade of P# (pass) indicates that credit has been awarded, but the work was not subject to finer evaluation. No required or business course work may be taken on a pass/fail option. This option is provided so that you may take non-business courses in subject areas with which you may have little familiarity.

Auditing a Course

You may not audit a business course. However, you may take nonbusiness courses for audit with the approval of the professor. An audited course does not count toward your degree requirements. A grade of L indicates satisfactory completion of an audit; unsatisfactory completion results in a grade of Z. Fees for auditing a course are assessed at the same rate as for all other courses.

Course Changes

You may drop a course until the end of the second week of classes; no record of the enrollment is recorded on your official transcript. You also may withdraw from courses between the beginning of the third and the end of the 12th week of the semester. In this case, a W (withdraw) is recorded on the official transcript. After the end of the 12th week, you may not withdraw from classes.

Incomplete Grades

You may be given an I (incomplete) when extenuating circumstances preclude the satisfactory completion of course work during the semester in which a particular course is taken. If you do not make up an I within the prescribed period, it will automatically be changed to an F.

Honors

Undergraduate business students are considered for the following honors:

Scholars in Business Program

The Scholars in Business program allows alumni, corporations, and friends of Olin to provide scholarship funds to students of high academic promise who require financial support to attend the University. Students are considered for this award when they make application for financial aid in the fall of each year. Donors and students meet each other at the annual Scholars in Business dinner.

Undergraduate scholarships funded through this program include:

Andersen Consulting Scholarship
Fred S. and Suzanne E. Anton Scholarship
William H. Armstrong Scholarship
Sue and Mel Bahle Scholarship
Baird, Kurtz, & Dobson Accounting Scholarship
Abraham A. Bank Scholarship
Charles M. Barnes Endowed Scholarship
William and Diane Barnes Scholarship
Walter G. Bauer Endowed Scholarship
Mary Ellen and Carl L.A. Beckers Scholarship
Beckmann Scholarship
Scott F. Bianco Memorial Scholarship
Frederick Bierman and James E. Spears Scholarship
Warren A. and Deloris Coy Boecklen Scholarship
Aranka Bohm Scholarship
Annie Usry Branham Scholarship
Karney A. and Marjorie J. Brasfield Endowed Scholarship
The Buerger Family Scholarship in Honor of Gary Hochberg
Florence and Frank J. Bush, Jr. Scholarship
William and Patricia Bush Scholarship
Dorothy and Butler Bushyhead Scholarship
Kelly Monaghan and Robert Buttke Scholarship
William Sutter Cassilly Endowed Scholarship
Class of 1954–Miller Upton Scholarship
Michele and Brian Cohen Scholarship
Stanley M. Cohen Endowed Scholarship
Coleman Foundation Scholarship
CPI Founders Scholarship
Alphonsus T. Cummins Scholarship
Gloria A. and Paul M. Dauten Scholarship
Alan E. Doede Endowed Scholarship
Catherine M. Dondzila Scholarship
Barbara and Nicholas Dopuch Scholarships
Marsha and Emmett Duemke Scholarship
Distinguished Faculty Scholarship in Honor of C. William Emory
Ernst & Young Scholarship
Alyn and Martyn Essman Scholarship
F.B.K. Scholarship in Honor of Carl Bauer
Raymond H. Fienup Endowed Scholarships
W.F.J. Fienup Scholarships
Jean and Donald Frahm Scholarship
Frances E. Franklin Scholarship
Aurora Leigh Frederick Endowed

Scholarship Fund

Benson L. and Kathleen F. Friedman Scholarships
Daniel G. Gaber Memorial Scholarship
Hollis L. Garren Scholarship
Morris M. Geifman Memorial Scholarship
Howard E. Gilkes Scholarship
Gussie Glik Scholarship
Lynn Kohane Schukar and Lillian Kohane Glick Memorial Scholarship
Alvin and Jeanette Goldfarb Scholarship
Michael C. Gombeg Scholarship
Alma and Oliver Goralnik Scholarship
Stuart and Elaine Greenbaum Scholarship
Bobette and Sidney Guller Scholarship
Robert L. and Carolyn M. Harmon Scholarship
Teresa Harris Memorial Scholarship
John H. Hayward Scholarship Fund
Carolyn and Jay Henges Scholarship
Robert R. Hermann Scholarship
Edwin W. Hudspeth Scholarship
Robert Sloan Jack Scholarship
Frederick D. Jacobus Memorial Scholarship
Kurt and Carolyn Jaeger Scholarship
Robert L. Johnston Scholarship in Business
Regina Karmel Memorial Scholarship
Distinguished Faculty Scholarship in Honor of Joseph M. Klamon
Gunther and Doris Kohn Scholarship
Louis and Rose Kopolow Memorial Scholarship
Lawrence Krulik Memorial Scholarship
Robert and Myrna Kuk Scholarship
Lee-Rowan Scholarships
Willard L. Levy Scholarship
Leslie and Carol Loewe Scholarships
Theodore R.P. Martin Scholarship
George D. McDowell Scholarship
Art and Marge McWilliams Scholarships
Leo and Dorothy Minner Memorial Scholarship
Grace Moro Scholarship
Motorola Scholarship
James Myles and Gladys Hecker Myles Scholarship
Kevin C. O'Neill Scholarship
PricewaterhouseCoopers Scholarship
Regency Group Scholarship
Reich Family Scholarship
Joseph A. Richardson Scholarship
Kay Roh Memorial Scholarship
Ronald and Alloyce Ross Scholarship
Rubin, Brown, Gornstein & Co. Scholarship
Robert N. Sachs Scholarship
Lillian M. Sagorske Memorial Scholarship
Lori and Ron Satnick Scholarship
Robert L., Jr. and Martha S. Scharff Scholarship
Barbara and Harry Schukar Scholarship
Louis and Ricki Schukar Scholarship
J. Henry Schweich Scholarship
Asa Forest Seay, Jr. Scholarships
The Seiden and Hirsch Family Scholarship
Cynthia and Keith Shaw Scholarship
Frank Havelock Simmons Scholarship
Jennifer Sosnik Memorial Scholarship
Southwest Securities Scholarship
C. Wayne Spann Scholarship
Stone Smurfit Container Corporation

Scholarships

Dorothy Tanenbaum Memorial Scholarship
Lawrence E. Thomas/Edward Jones Scholarship
Wesley Thomas Scholarship
Joseph and Patty Towle Endowed Scholarship
Colonel Irvin Trowbridge Scholarship
ValueQuest/TA Scholarships
Robert and Gerry Virgil Endowed Scholarships
Robert C. Wahlert Scholarship
Bob and Marianne Walpole Scholarship
Distinguished Faculty Scholarship in Honor of Merle Welshans
Gloria W. White Scholarship
Jerry Wightman Scholarships
O. Bliss and Susan H. Williams Scholarship
Wong Scholarship
Wayne Wood Scholarship
XI-I Award Scholarship (EMBA class)
Neil Marshall Yaris Scholarship
William and Marilyn Young Scholarship
Louis and Mary Zorensky Scholarship
Milton and Jeanne Zorensky Scholarship

Dean's List

Dean's List honors are awarded to undergraduates who have completed a minimum of 12 graded units and achieved a semester grade point average of 3.6 or above. No incomplete grades may be outstanding as part of your semester record.

Honorary Society

The top 7 percent of the junior class and the top 10 percent of the senior class are eligible for invitation to Beta Gamma Sigma, the national business honorary society. You must have completed a minimum of 30 units at Washington University to be eligible.

Graduation Honors

Graduating seniors in the top 5 percent of the graduating class based on overall University academic records graduate summa cum laude. Seniors in the top 6 to 15 percent of the graduating class graduate magna cum laude. These honors are recorded on the official University transcript.

Faculty

Endowed Professors

William P. Bottom

Joyce and Howard Wood Distinguished Professor of Organizational Behavior Ph.D., University of Illinois

Siddhartha Chib

Harry C. Hartkopf Professor of Econometrics and Statistics Ph.D., University of California–Santa Barbara

Martin W. Cripps

John K. Wallace, Jr. and Ellen A. Wallace Distinguished Professor of Managerial Economics

Ph.D., London School of Economics

Philip H. Dybvig (on leave)

Boatmen's Bancshares Professor of Banking and Finance

Ph.D., Yale University

Stuart I. Greenbaum

Bank of America Professor of Managerial Leadership

Ph.D., Johns Hopkins University

Mahendra Gupta

Dean and Geraldine J. and Robert L. Virgil Professor of Accounting and Management

Ph.D., Stanford University

Barton H. Hamilton

Robert Brookings Smith Distinguished Professor of Entrepreneurship

Ph.D., Stanford University

Ronald R. King

Myron Northrop Professor of Accounting

Ph.D., University of Arizona

Panos Kouvelis

Emerson Professor of Operations and Manufacturing Management

Ph.D., Stanford University

James T. Little

Donald Danforth, Jr. Distinguished Professor of Business

Ph.D., University of Minnesota

Glenn M. MacDonald

John M. Olin Professor of Business, Law, and Economics

Ph.D., University of Rochester

Judi McLean Parks

Reuben C. and Anne Carpenter Taylor Professor of Organizational Behavior

Ph.D., University of Iowa

Chakravarthi Narasimhan

Philip L. Siteman Professor of Marketing

Ph.D., University of Rochester

Robert A. Pollak

Hernreich Distinguished Professor of Economics

Ph.D., Massachusetts Institute of Technology

Ambar Rao

Fossett Distinguished Professor of Marketing

Ph.D., University of Pennsylvania

Jeroen Swinkels

August A. Busch, Jr. Professor of Managerial Economics and Strategy

Ph.D., Princeton University

Anjan Thakor

John E. Simon Professor of Finance

Ph.D., Northwestern University

Murray L. Weidenbaum

Edward Mallinckrodt Distinguished University Professor

Ph.D., Princeton University

Todd R. Zenger

Robert and Barbara Frick Professor of Business Strategy

Ph.D., University of California–Los Angeles

Professor

Jack A. Nickerson

(Organization and Strategy)

Ph.D., University of California–Berkeley

Associate Professors

Yossi Aviv

(Operations and Manufacturing Management)

Ph.D., Columbia University

J. Stuart Bunderson

(Organizational Behavior)

Ph.D., University of Minnesota

Kurt T. Dirks

(Organizational Behavior)

Ph.D., University of Minnesota

Lingxiu Dong

(Operations and Manufacturing Management)

Ph.D., Stanford University

Richard Frankel

(Accounting)

Ph.D., Stanford University

Armando Gomes

(Finance)

Ph.D., Harvard University

Claus W. Langfred

(Organizational Behavior)

Ph.D., Northwestern University

Hong Liu

(Finance)

Ph.D., University of Pennsylvania

Todd T. Milbourn

(Finance)

Ph.D., Indiana University

Tava L. Olsen

(Operations and Manufacturing Management)

Ph.D., Stanford University

Raymond T. Sparrowe

(Organizational Behavior)

Ph.D., University of Illinois at Chicago

Guofu Zhou

(Finance)

Ph.D., Duke University

Assistant Professors

Markus Baer

(Organizational Behavior)

Ph.D. expected 2006, University of Illinois

Tat Chan

(Marketing)

Ph.D., Yale University

Sergio Chayet

(Operations and Manufacturing Management)

Ph.D., Northwestern University

Amar Cheema

(Marketing)

Ph.D., University of Colorado

Daniel Elfenbein

(Organization and Strategy)

Ph.D., Harvard University

Michael W. Faulkender

(Finance)

Ph.D., Northwestern University

Amanda Y. Friedenberg

(Economics)

Ph.D., Harvard University

Radhakrishnan Gopalan

(Finance)

Ph.D. expected 2006, University of Michigan

Todd Gormley

(Finance)

Ph.D. expected 2006, Massachusetts Institute of Technology

Gautam Gowrisankaran

(Economics)

Ph.D., Yale University

Dirk Hackbarth

(Finance)

Ph.D., University of California–Berkeley

Zeynep K. Hansen

(Organization and Strategy)

Ph.D., University of Arizona

Nicole Thorne Jenkins

(Accounting)

Ph.D., University of Iowa

Ohad Kadan

(Finance)

Ph.D., Hebrew University

Anne Marie Knott

(Strategy)

Ph.D., University of California–Los Angeles

Dmitri G. Kuksov

(Marketing)

Ph.D., University of California–Berkeley

Lubomir Litov

(Finance)

Ph.D., New York University

Chris P. Long

(Organizational Behavior)

Ph.D., Duke University

Vladimir N. Mares

(Economics)

Ph.D., Rutgers University

Raj Mashruwala

(Accounting)

Ph.D., University of Texas–Dallas

Brian P. McManus

(Economics)

Ph.D., University of Virginia

Chandra Seethamraju

(Accounting)

Ph.D., New York University

Ozge Turut

(Marketing)

Ph.D. expected 2006, Harvard University

Tzachi Zach

(Accounting)

Ph.D., University of Rochester

Visiting Assistant Professors

Anchada Aida Charoenrook

(Finance)

Ph.D., University of Michigan

Charles J. Cuny

(Finance)

Ph.D., Stanford University

Ying Xie

(Marketing)

Ph.D., Northwestern University

Adjunct and Other Faculty**Sanford J. Boxerman**

(Business Law)
J.D., Harvard Law School

Lynnea A. Brumbaugh

(Communications)
Ph.D., Washington University

Samuel S. Chun

(Marketing)
Ph.D., Washington University

William R. Emmons

(Finance)
Ph.D., Northwestern University

William C. Finnie

(Marketing)
Ph.D., University of Pennsylvania

Ronald K. Fisher

(Business Law)
J.D., Washington University

Louis R. Forbringer

(Organizational Behavior)
Ph.D., University of Akron

Michael R. Gordinier

(Management)
Ph.D., University of Wisconsin–Madison

Scott E. Grasman

(Operations & Manufacturing Management)
Ph.D., University of Michigan

Kenneth A. Harrington

(Entrepreneurship)
M.B.A., University of Pennsylvania

Stacy L. Jackson

(Experiential Learning and Professional Development)
Ph.D., Rice University

Carol F. Johaneck

(Marketing)
M.B.A., Saint Louis University

Mark B. Lewis

(Finance)
M.B.A., Washington University

William J. Marshall

(Finance)
Ph.D., Washington University

Mark P. McLaren

(Accounting)
M.B.A., Columbia University

Donald W. Paule

(Business Law and Taxation)
LL.M., Washington University

David A. Poldoian

(Entrepreneurship)
M.B.A., Harvard University

Robert A. Portnoy

(Human Resource Management)
Ph.D., University of Missouri–Columbia

David A. Sentnor

(Accounting)
M.B.A., Washington University

Martin K. Sneider

(Marketing)
M.B.A., Harvard University

Mark E. Soczek

(Accounting)
A.B.D., Northwestern University

William J. Streeter

(International Business)
M.B.A., New York University

Sharon A. Tucker

(Human Resources Strategy)
Ph.D., University of Chicago

Annette M. Veech

(Managerial Communications)
Ph.D., University of Illinois at Urbana–Champaign

Stuart D. Yoak

(Ethics)
Ph.D., Washington University

Professors Emeriti**Nicholas Baloff**

(Business Administration)

Nicholas Dopuch

(Accounting)
Ph.D., University of Illinois

Powell Niland

(Management)

J. George Robinson

(Marketing)

Robert L. Virgil, Jr.

(Accounting)

John E. Walsh, Jr.

(Management)

Merle T. Welshans

(Finance)

Undergraduate Courses**Accounting**

Acct 2610. Principles of Financial Accounting
Same as Econ 2610.

Provides an overview of the financial accounting reporting process, with a primary focus on the analysis of economic events and their effect on the major financial statements (balance sheet, income statement, and statement of cash flows). Prerequisite: second semester freshman standing. Credit 3 units.

Acct 2620. Principles of Managerial Accounting
Same as Econ 2620.

Emphasis on the accumulation and analysis of data for internal decision makers. Introduces the vocabulary and mechanics of managerial accounting and accounting techniques used by internal managers in planning, directing, controlling, and decision-making activities within their organizations. Prerequisite: Acct 2610. Credit 3 units.

Acct 3610. Intermediate Financial Accounting Theory I

The first of a two-course sequence in corporate financial reporting. Examines the environment of financial accounting, the standards-setting process, and the conceptual framework that underlies financial accounting in the United States. Topics: review accounting basics, events, and transactions that impact financial statements, comprehension of corporate financial reports, and examination of political and economic factors influencing accounting policy. Prerequisite: Acct 2610. Credit 3 units.

Acct 3620. Intermediate Financial Accounting II

Continuation of Acct 3610. Focus on the accounting and reporting of various stakeholders' claims against the corporate entity. Claims of shareholder-

ers, long-term creditors, employees and governmental bodies are examined. An in-depth understanding of applicable generally accepted accounting principles is developed by examining the strengths and weaknesses of these principles and alternative accounting practices. Prerequisite: Acct 3610. Credit 3 units.

Acct 363. Cost Analysis and Control

Focus on the impact of changes in markets, in operations and information technology that affect the design of management accounting systems. Emphasis is on the strategic role of cost information in planning and controlling operations. Current thrusts of quality control and customer service in managing operations have placed new demands on management accounting systems beyond the traditional role of product costing for financial reporting. Course objective is to analyze how these new demands can be met through the expansion of the scope of management accounting systems. Prerequisites: Junior standing and Acct 2620. Credit 3 units.

Acct 464. Auditing

Same as Acct 564.

Examination of the professional service industry of auditing including evaluating objectively the service of obtaining, evaluating, and communicating evidence regarding managerial assertions about economic events. Specifically, auditing ascertains the degree of correspondence between managerial assertions and established criteria. Topics: economic role of external corporate auditing in securities markets; composition of firms in the auditing industry, regulatory environment of auditing, litigation issues facing the accounting/auditing industry, requirements for conducting audits and consideration of the scope and application of Generally Accepted Auditing Standards (GAAS) and the general technology of auditing which are some general auditing topics typically covered on the CPA exam. Prerequisite: Acct 3610. Credit 3 units.

Acct 466. Financial Statement Analysis

Designed to enhance your understanding of the process of evaluating financial statement information. Requires a basic familiarity with financial accounting and the assumptions underlying measurements reported in financial statements, an understanding of the economic and regulatory forces underlying corporate disclosure of financial statement information and their effects on financial statement information, and familiarity with data sources and analytical tools to extract and evaluate this data. Objectives are to develop familiarity with this type of analysis and to gain an appreciation for its limitations. Topics: profitability and risk analysis, credit risk models, forecasting, and valuation. Prerequisite: Acct 3610. Credit 3 units.

Acct 467. Income Tax Fundamentals

Same as Acct 567.

Principles of individual and corporate income tax, including the history and development of income tax legislation and regulations in the United States. Topics: basic tax concepts, relationships between business and taxable income, tax research and planning, and the impact of tax regulations on business planning and decisions. Prerequisite: Acct 2610. Credit 3 units.

Acct 4680. Advanced Financial Accounting Problems

Same as Acct 563.

Examination of the nature and financial reporting aspects of various business transactions: corporate acquisitions, mergers, and the formation of other strategic alliances. Topics: accounting for business combinations and consolidations, joint ventures and foreign currency translation, accounting and

financial reporting issues facing government entities. Prerequisite: Acct 3620. Credit 3 units.

Finance

Fin 340. Capital Markets and Financial Management

Examines finances of business at the aggregate level through the flow of funds framework. Financial decision making in areas of liquidity management, investment management, and the selection of capital sources. Prerequisites: Math 122, 128 or 132, Acct 2610, Mec 290 or Econ 103B, and completion or concurrent enrollment in QBA 121. Credit 3 units.

Fin 343. Personal Finance

Examines issues underlying decision making regarding personal investments. Topics: present value concepts, financial markets and instruments, portfolio theory, bond and equity valuations, mutual funds, mortgages, taxes and personal financial planning. Intended for nonbusiness students who are not second majors in Finance. Students may not receive credit for both this course and Fin 340. Prerequisite: non-B.S.B.A. degree students with junior standing. Credit 3 units.

Fin 400G. Financial Markets and Instruments (Imperial College/London)

Credit 3 units.

Fin 420. International Economics and Finance

Focuses on the application of concepts and techniques drawn from international economics and finance to the financial management of the business operating in a multinational environment. Topics from international economics include exchange rate determination, international capital flows, determination of trade flows and the terms of trade, and the influence of domestic macroeconomic policy. From finance, topics include the study of international financial instruments, international capital markets, exchange risk hedging techniques, and cost of capital issues. The nature and role of the various institutions involved in international finance are stressed. Prerequisite: admission to the Olin School's International Internship Program in London. Credit 3 units.

Fin 428. Investment Praxis

Students serve as managers of a portfolio, the Investment Praxis Fund, which is owned by the Olin School. Students analyze investment opportunities in various industries and present recommendations to the class for possible purchases or sales of securities. Students demonstrate that their investment decisions are consistent with the style and objectives of the fund. Valuation tools and financial statement analysis are emphasized as part of a thorough analysis. Course emphasis on contact with investment professionals such as portfolio managers, securities traders, consultants, custodians, and plan sponsors. Students will report on their performance to the Olin advisory board of the fund at the end of the semester. Prerequisites: Senior standing and Fin 340, Fin 451, Acct 466 or completion of either Fin 451 or Acct 466 and concurrent enrollment in the remaining course prerequisite and acceptance by the IP Admissions Committee. Credit 3 units.

Fin 441. Investments

Examines financial markets from the point of view of an investment/portfolio manager. Analyze some of the major financial institutions, such as the stock and options markets (exchanges). Study how financial securities (such as stocks, bonds, options, and futures) are valued in a well functioning financial market. Understand the theory of optimal portfolio selection based on the notions of static and dynamic portfolio efficiency, capital market equilibrium (a.k.a., the Capital Asset Pricing

Model) and the Arbitrage Pricing Theory, bond valuation and immunization, the binomial model and its connection to the Black-Scholes option pricing model, and hedging with financial futures in theory and practice. Review professional publications, such as the *Journal of Portfolio Management* and the *Financial Analysts Journal*. Prerequisite: Fin 451. Credit 3 units.

Fin 443. International Finance

Provides a framework for making financial decisions in an international context. Topics include: relevant features of international markets and instruments (such as foreign exchange, currency futures, options, swaps, Eurobonds, etc.); models of exchange rate determination; the issue of foreign exchange risk exposure from a corporate perspective; corporate risk management; problems related with capital budgeting in a multi-currency/environment; global investment management issues (risk return tradeoff across countries and global asset allocation); project finance; international taxation; cross-border mergers and acquisitions; and international corporate governance. Prerequisites: Fin 340. Credit 3 units.

Fin 447. Information, Intermediation, and Financial Markets

Examines the organization and function of financial markets from the corporate perspective with an emphasis on investment banking activities. Topics: design, issuance and trading of corporate securities, risk management and corporate control transactions. Develop familiarization with current practices while building a conceptual framework for understanding and anticipating change in the institutions that comprise the financial markets. Prerequisite: Fin 340 with Fin 451 and Fin 448 recommended. Credit 3 units.

Fin 448. Advanced Financial Management

Advanced study of corporate financial management. A major focus is the relationship between the internal decisions of the corporation and the valuation of the firm in the capital market. Topics: capital budgeting systems, capital structure, debt policy, cash and working capital management, short- and long-term financial planning. Prerequisite: Fin 451. Credit 3 units.

Fin 449. Risk Management

Thorough overview of the risk management process and the use of derivatives to manage risk. Objectives are: provide a framework that managers can employ to make strategic risk management decisions; integrate risk management into a broader understanding of corporate financial policy; introduce techniques that managers can use to identify risk exposures; identify the basic derivative market instruments available to manage risk and the uses, advantages, and disadvantages of each; present analytical and statistical techniques that managers can employ to reduce exposures to particular risks; and present an overview of the oversight of the risk management process. Specific topics include: determining the costs of risk to a corporation; managing interest rate risk using futures, forwards, and swaps; evaluating derivatives credit risk; credit risk derivatives; using options to manage risk and managing the risk of options positions; monitoring the activities of traders/risk managers; "derivatives disaster" including Barings, Metallgesellschaft, and Sumitomo; and exchange and OTC markets. Prerequisites: Fin 451. Credit 3 units.

Fin 450. Computational Finance

Introduction to computer-based application of sophisticated financial models such as binomial models of stock option pricing, interest derivative pricing, futures option pricing, and simulation models of asset allocation, stochastic volatility option pricing, and hedge performance. The applications will be developed using the Java program-

ming language. Prerequisites: Fin 451. Credit 3 units.

Fin 451. Options, Futures, and Derivative Securities

Examines the theory and practical application of derivative securities such as futures, options, and swaps. Central to the theory of derivative security pricing is arbitrage and payoff replication. In practice, derivative securities provide a principal route to manage and, in particular, hedge financial risk. Futures, options and swaps on different types of underlying assets are examined with emphasis on pricing and application. Prerequisite: Fin 340. Credit 3 units.

Fin 452. Advanced Derivative Securities

Same as Fin 537.

Human Resource Management

HRM 320A. Managing People in Organizations

Critically examines the interpersonal functions of management. Organized in three sections: (1) Introduces the principles of management with concepts of management including the traditional functions of planning, organizing, controlling, and problem solving as well the history of management and how such historical principles continue to influence the management of today's organizations. (2) Principles of Leadership concentrates on competencies for leading people. Topics: aligning and motivating people, conflict resolution, negotiating, decision making, communication skills, teambuilding and selecting effective leadership styles. (3) Leadership and Management: Applied Practice focuses on the nature of the workforce both now and in the volatile years ahead through case studies and group activities that will comprehensively incorporate the material from throughout the course. Prerequisite: sophomore standing. Credit 3 units.

HRM 325A. Personnel/Human Resources Management

Introduces the field of human resource management (HRM) as well as the profession through which it is practiced. Designed to develop a broad understanding of major HRM components and apply them to the principles by which organizations are managed. Develop a familiarity with the various types of human resource positions in organizations, the opportunities for career growth and the professional resources available through the Society of Human Resource Management including membership and certification requirements, publications, and Web sites. Prerequisite: Junior standing. Credit 3 units.

HRM 499. Internship

Credit 0 units.

Intl 0001. International Elective

Credit 0 units.

Intl 499. Internship

Credit to be determined in each case.

Management

Mgt 100. Individual in a Managerial Environment

Historical analysis of major trends shaping the contemporary and future nature of business. Emphasis on the development of critical and evaluative skills. Topics: demography, trade, technology, employment, government and the economy, social ethos and economic behavior, the nature of economic organization, and the growth of business firms in the United States and abroad. Only open to freshmen in the fall semester. Credit 3 units.

Mgt 200. Managing Your Business Career Strategy

Provides opportunities for students to: participate in career related self-assessment; explore numer-

ous business related careers; understand the curriculum and how it relates to desired majors or personal interests; and develop internship/job seeking competencies. Prerequisite: Sophomore standing or above. Credit 3 units.

Mgt 301. Legal Environment of Business Management

Surveys the various areas of law that make up the legal environment of business. Develops a basic understanding of law as it relates to business, with traditional emphasis on private law and business transactions. This study of the micro law of business will review the detailed substantive rules in the areas of contracts, sales, products liability, agency, corporations, and partnership. In addition, a summary review of contemporary legal problems such as insider trading, discrimination in employment, sexual harassment, and ethics may be discussed, if time permits. Case studies are analyzed in order to give the student an understanding of how various laws apply to actual situations. Prerequisite: Sophomore standing. Credit 3 units.

Mgt 308. Introduction to International Business

Focus on the aspects of management of a business enterprise that are necessary to compete in the global marketplace. The course begins with a survey of the environmental context in which international companies operate (economic systems and cultural factors). This is followed by a review of International Trade Theory and Economics. This forms a basis for concentration in the second half of the course on strategies and structure for global operations. The course deals with the situations in Europe, Japan, Latin America, and China through case studies and discussion of current topics and their relation to the fundamental aspects of global business management. Prerequisites: Junior standing or permission of instructor. Credit 3 units.

Mgt 310. Management Communications

Offers practical challenges to the way we think about communication and good opportunities to practice specific writing and presentation skills essential to your success in business. Individual assignments include memos, business letters, and various presentations; team assignments include short reports and a PowerPoint presentation for St. Louis business clients. Prerequisite: EComp 100 or permission of instructor. Credit 3 units.

Mgt 382. Business and Public Policy

Because the corporation's well-being may be drastically affected by the nonmarket environment, corporate leaders who can best predict the evolution of political and legal outcomes have an advantage. Specifically, the following issues are addressed: why governments engage in public policy affecting corporations; how business and other sectors are represented in government; motivations of public officials; decision-making structure of crucial government agencies such as Congress, the president, and regulatory agencies. Both written and verbal analysis and integrates formal problem-solving and expository techniques. Prerequisites: Mec 290 or Econ 103B and Mec 291 or Econ 104B. Credit 3 units.

Mgt 390. The Economics of Human Resource Management

Key to a firm's success is whether it can develop a firm organization and a human resource management system that reinforce the firm's strategic position. This course covers topics in managing work forces and organizations that are of fundamental importance to all managers, and teaches how organizational design and human resource policies interact with the firm's market strategy and production environment. We look at how management can motivate executive and employee performance, screen and attract appropriate workers, and improve the way information is processed

and decisions are made within organizations. This course combines economic analysis with case discussions to address topics including hiring policy, turnover, training, variable pay, promotions, evaluation, job design, teams, worker empowerment, hierarchy, and organizational structure like centralization and decentralization. Prerequisite: Mec 290. Credit 3 units.

Mgt 400L. Communications Close-Up for the Global Economy

This supplement to Mec 292 meets one hour each week to give students individual feedback on their presentation skills and on their critical thinking and writing skills. In class, we will thoroughly discuss two cases—*Don Quixote* and *Mutiny on the Bounty*—both of which deal with vital issues of group dynamics. Students will do a number of in-class exercises and then write one paper and do one presentation on each case. Prerequisite: Mec 292 or concurrent enrollment in Mec 292. Credit 1 unit.

Mgt 400M. Communications Close-Up for International Marketing

This supplement to Mkt 477 meets one hour each week to give students individual feedback on their presentation skills and on their critical thinking and writing skills. In class, we will thoroughly discuss three to four cases—Confucius, Machiavelli & Rousseau, and King David—which deal with the crucial issue of cultural relativism. Students will do a number of in-class exercises and then write one paper and do one presentation on each case. Prerequisite: Mkt 477 or concurrent enrollment in Mkt 477. Credit 1 unit.

Mgt 400N. Communications Close-Up for Organizational Behavior

This supplement to OB 360 meets one hour each week to give students individual feedback on their presentation skills and on their critical thinking and writing skills. In class, we will thoroughly discuss two cases—Winston Churchill and *12 Angry Men*—which deal with the most central issues of individual and group dynamics in organizations. Students will do a number of in-class exercises and then write one paper and do one presentation on each case. Prerequisite: OB 360 or concurrent enrollment in OB 360. Credit 1 unit.

Mgt 400P. Communications Close-Up for Principles of Marketing

What can Ghandi teach us about selling an idea—a crucial, controversial, and life-changing idea—to a split customer base: some not only welcoming but grateful; others not only hostile, but violent? And what can an ancient Chinese war strategy text teach us about analyzing the strengths, weaknesses, opportunities, and threats of our own companies and those of our competition? In this class, we will thoroughly discuss two cases—Mahatma Ghandi and Sun Tzu's *The Art of War*—which we will view and analyze through the marketing lens of the three C's: customer, company, and competition. Our goal will be to deepen students' understanding of certain crucial principles of marketing while giving focused assignments to help improve writing and presentation skills. Two individual written analyses (one on each case) and two individual presentations (one on each case). Prerequisite: Mkt 370 or concurrent enrollment in Mkt 370. Credit 1 unit.

Mgt 400Q. Communications Close-Up: Marketing, International Marketing, and Organizational Behavior

This course uses humanities-based managerial cases (including Ghandi, *The Art of War*, *12 Angry Men*, and Confucius, Machiavelli, and Rousseau) to deepen students' understanding of the core concepts of marketing, organizational behavior, and international marketing. Devoting a significant amount of class time to intensive lab work, the

course concentrates on developing students' individual (not team-based) writing and presentation skills. Assignments include at least three individual PowerPoint presentations and at least two individual papers, for which students will choose their own due dates. Prerequisites: Completion of or concurrent enrollment in one of the following courses: Mkt 370, Mkt 477 or OB 360. Credit 3 units.

Mgt 400R. Internship Experience

Credit 0 units.

Mgt 400S. International Business Environment (Imperial College/London)

Credit 3 units.

Mgt 400U. Presenting Yourself in Business Communications: Meetings, Memos, E-Mail, and Reports

Every field of business—marketing, accounting, finance, consulting, entrepreneurship—requires robust communication skills. It's not enough to know how to crunch numbers; you've got to know how to communicate your good ideas to your boss, your partner, your team members, and your clients. In short, you've got to know how to present yourself—in meetings, in person, and in writing. In this class, students work individually and in groups to transform merely competent writing and presentation skills into compelling ones. They stage formal and informal business presentations and create verbal and written reports for external clients. Class discussions, readings, and activities all complement one another and equip students with communication tools aimed at helping them first get a job—and then thrive during those first two critical years. Prerequisite: E Comp 100 or permission of the instructor. Credit 3 units.

Mgt 400V. Healthcare Economics, Policy, and Operations

Same as Mgt 500V.

The course is broadly broken into two halves. The first half will deal with topics in healthcare economics, health policy, insurance principles, and some basic analytic frameworks. The second half of the course will address more directly topics in healthcare management and operations. This half of the course will be oriented around case discussions. The entire course will be sensitive to variations in the backgrounds of class members with respect to economics and previous knowledge of healthcare. Prerequisites: Mec 290 or Econ 103B. Credit 3 units.

Mgt 402. Ethical Issues in Managerial Decision Making

Same as Mgt 502.

Focuses on ethical issues in management and surveys a number of ethical standards or levels by which managers make decisions involving most functional areas of business. Course emphasis on class discussion of cases and problem situations that confront managers and for which ethical dimensions are a significant part of the business choices. Prerequisite: Senior standing. Credit 1.5 units.

Mgt 410. Current Issues in International Trade and Finance

Introduction to prospects and problems of the international economy with an emphasis on the United Kingdom and the European Economic Community. Both economic and political dimensions considered. Required of all students participating in the Olin School's International Internship Program. Prerequisite: permission of instructor. Credit 1 unit.

Mgt 418. International Business: A Euro Perspective

Examines the economic and institutional setting of Europe from a general business perspective. The economic and political structures of major coun-

tries are studied. The role of the European Economic Community examined as well as that of some major international organizations such as GATT and OECD. The primary emphasis is with countries of western Europe. Other topics: theory of customs, unions, monetary and economic integration, and multicountry policy integration. Opportunities for and problems of doing business in Europe examined from both an overall strategic perspective and from the perspective of the different functional areas. Prerequisite: admission to the Olin School's International Internship Program in London. Credit 3 units.

Mgt 424. Business Planning for New Enterprises [The Hatchery]
Same as Mgt 524.

Mgt 430. Introduction to Entrepreneurship
This course covers the life dynamics surrounding the early stages of starting a business. Based upon a series of "experiential simulations," students will be involved in both individual and team competitive gamesmanship situations that replicate real world startup environments. Students will learn to identify characteristics of promising startup industry environments and markets; to understand the process of early stage company formation and some of the options open to founders; to understand some of the team dynamics and behaviors that might occur in a startup and to have some fun. Prerequisites: junior or senior standing with priority given to seniors and permission of instructor. Credit 3 units.

Mgt 4581. Common Law Marriage of Government and Business
Same as Econ 456.

Mgt 487. Competitive Strategy
Thinking strategically is appropriate in any setting in which one's own well-being is significantly affected by the actions of one or more other actors. This includes business as well as politics, war, sports, and the professions. In all of these arenas, people realize that the action that might be best depends significantly on the response of allies and opponents. There is now a relatively well-defined body of knowledge that seeks to distill principles of strategy that are as appropriate to the marketplace as to the battlefield or the playing field. The primary purpose of this course is to take advantage of this body of knowledge and to apply it to a series of business settings. While primarily theoretical, real world applications will be examined. Both economic and game theoretic tools will be used to analyze decisions of the firm, and the reactions to those decisions by other relevant players. Prerequisite: Senior standing, or permission of the instructor. Credit 3 units.

Mgt 490. Honors Seminar I
The first of a two-course honors seminar. Students will have the opportunity to investigate current issues in business using an interdisciplinary approach to their research. Course content of the seminar varies from year to year. Prerequisites: senior standing and faculty invitation. Credit 3 units.

Mgt 491. Honors Seminar II
The second of a two-course honors seminar. Students will have the opportunity to investigate current issues in business utilizing an interdisciplinary approach to their research. Course content of the seminar will vary from year to year. Prerequisite: Mgt 490. Credit 3 units.

Managerial Economics

Mec 290. Microeconomics
Provides a foundation to the analysis of optimal decisions by firms, namely how to make decisions about how much to produce, how to produce it, how to price it, and how these decisions are affect-

ed by demand, cost, the number and behavior of firms in the industry, the information the firm has, and the legal environment. Prerequisite: Math 121 or 131. Credit 3 units.

Mec 292. Global Economy
Introduces the fundamentals of international economic analysis. Provides an economic foundation to the analysis of business decisions and strategies in the global setting. Topics include: introduction to the global economy; comparative advantage as the basis for international trade and sources of comparative advantage; economies of scale and imperfect competition as the basis for international trade; tariffs and other instruments of trade policy; political, legal, and institutional factors influencing international trade; balance of payments; exchange rates and the foreign exchange market; international capital flows; national competitive advantage and industrial policies; global economic competition and business strategy. Prerequisites: Mec 290 or Econ 103B and QBA 120. Credit 3 units.

Mec 370. Game Theory for Business
Provides students with a methodological framework to analyze strategic business situations. Building on a background in microeconomics and statistics, this course includes such topics as the following: modeling strategic problems, games with sequential moves, games with simultaneous moves, strategies and the derivation of strategic forms, general classes of games, uncertainty and information, strategy and voting, auctions, bargaining. Prerequisites: Mec 290 or Econ 401, QBA 121 or Econ 413. Credit 3 units.

Mec 400F. Empirical Techniques for Industry Analysis
Same as Mec 500H.
Students will learn how to use data to answer a wide variety of questions regarding the incentives and behavior that generate market activity. We emphasize inference about the strategic decisions of firms and consumers. Students are introduced to new statistical and econometric tools by examining the application of these tools to current research in economics. Among the topics considered are the empirical implications of: strategic bidding in auctions, price discrimination and dispersion, differences across products, and the internal organization of firms. Prerequisites: QBA 120 and 121 or Econ 413, plus Mec 370 or Econ 476 and Mec 470 or Econ 452. Credit 3 units.

Mec 400G. Economic Issues and the Management of Healthcare
Same as Mec 500I.
The course provides an in-depth analysis of the economic issues of healthcare management, making use of frontier economic tools. The course will combine discussions of theories of healthcare with empirical readings on the healthcare sector. The idea is to understand what recent economic theories can contribute to healthcare management, and also to understand what evidence can be gleaned from real examples and data. The course will study many of the important features of demand and supply in this sector including insurance and managed care, the nature of hospitals and technological innovation and costs. The course will also discuss the role of the government in the healthcare sector and possibilities for reform. Required prerequisite: Mec 290 or Econ 103B. Recommended: Mgt 400V or Econ 352. Credit 3 units.

Mec 470. Market Competition and Value Appropriation
Provides students with frameworks and capabilities for making intelligent decisions in evolving markets. Course begins with general game theory concepts, which form the basis for two main topics: models of competition in markets and value

appropriation. Students will learn the basic framework, and apply it in the context of a detailed industry study. Specific topics may include firm interactions in stable and evolving market environments, industry life cycles, the evolution of new product markets, and strategic decision-making in developing markets. Prerequisites: Mec 290 or Econ 401 and QBA 121 or Econ 413. Credit 3 units.

Mec 494. Business and the Environment
Same as Econ 451.

Marketing

Mkt 370. Principles of Marketing
Introduces the fundamental principles of marketing management: analyzing market opportunities; segmenting markets, selecting target markets, and positioning. Developing and managing the marketing mix (product, price, distribution, and promotion) within the context of the marketing environment (customers, competitors, and the external environment). Prerequisites: Mec 290 or Econ 103B and Math 121 or higher level of calculus. Credit 3 units.

Mkt 373. Retail Management
Explores the fundamental factors that are critical to the success of most retailers; merchandising, store design and display, personal selling, advertising and promotion, pricing, and location. A wide variety of retailers—department stores, specialty stores, wholesalers clubs, direct marketers, franchisers, food retailers, discounters, and others—are studied. Through case methodology, the role that managers play in problem solving and development of strategies are studied. Topics include: positioning for success; retailing organizations; retail economics; pricing strategy; and entrepreneurial retailing. Prerequisite: Mkt 370. Credit 3 units.

Mkt 377. Consumer Behavior
Psychological, sociological, and social psychological principles as they apply to consumer response to product offerings, media communications, personal influence, and other environmental factors. Consumer buying behavior is analyzed from theoretical, empirical, and applied perspectives. Current applications of concepts employed by marketers are discussed in the context of both consumer and industrial marketing situations. Prerequisite: Mkt 370. Credit 3 units.

Mkt 400D. Integrated Marketing Communication
This course focuses on an Integrated Marketing Communications (IMC) approach to advertising and other forms of commercial communications. The purpose is to provide future managers and practitioners with a foundation in communications theory, based on understanding the target's role in the demand chain for goods and services, as well as hands-on experience in developing marketing communications plans. A practical understanding is provided of each of the range of marketing communications vehicles: consumer and business-to-business advertising, sales promotion/incentives, direct marketing, public relations, events and sponsorships, as well as online/interactive communications. Copy strategy, creative development, media planning, promotion strategy, and the evaluation of these programs are all addressed in this course. Industry experts will give guest lectures. We will have four companies in different industry sectors for which the class will develop marketing communications plans during the course. Prerequisite: Mkt 370. Credit 3 units.

Mkt 470. Advertising Management
Deals with the management of the advertising and sales promotion processes. Theories of how advertising and promotion affect consumer behavior

and aggregate demand. Copy strategy, creative development, media planning, promotion strategy, and the evaluation of these programs are all addressed in this course. Industry experts in each of these fields will give guest lectures. Case studies are used to provide practical understanding of the concepts presented during the course. Prerequisite: Mkt 370. Credit 3 units.

Mkt 470E. Pricing

The environment of pricing decisions and common analytical techniques used by firms in making pricing decisions are studied. Critical-thinking skills and problem-solving skills emphasized. Topics: market structure analysis, contribution analysis, product life cycles, product line decisions, pricing in marketing channels, and transfer pricing. Prerequisite: Mkt 473. Credit 3 units.

Mkt 473. Marketing Research

The four P's of marketing are product, place, price, and promotion. Using these decision variables, firms seek to maximize profits. Making these decisions requires market information. Marketing research is the process of actively collecting, assimilating, and analyzing market information to support management decision making. Teaches the nuts and bolts of market research. Prerequisites: Mkt 370, QBA 120 and QBA 121 or concurrent enrollment in QBA 121. Credit 3 units.

Mkt 476. Advanced Retail Topics

Focuses on current important issues facing retailers. Students form four- to six-person teams, to identify a relevant topic, to outline a project proposal identifying its scope and methodology, and to present both a written and oral presentation of their findings and recommendations. Course relies on cases, company and industry data, and field trips. Prerequisite: Mkt 373. Credit 3 units.

Mkt 477. International Marketing

Addresses three fundamental decisions confronting a company whose operations extend beyond the domestic market: (1) choosing which foreign markets to penetrate; (2) determining the mode of market entry; and (3) devising the international marketing plan. Topics include global marketing planning; environmental and cultural influences on international marketing decisions; organizational and control issues in international marketing decisions; global marketing intelligence; foreign risk and feasibility studies; and issues of ethics in other countries. Prerequisite: Mkt 370. Credit 3 units.

Mkt 480. Marketing Strategy

Focus is on the role of marketing strategy in the success of the firm and on the formulation of successful marketing strategy. Seven to 10 cases will be studied. In addition to playing MARKSTRAT (marketing strategy simulation), students will analyze the strategy of various firms in the same industry. Prerequisites: Mkt 370 and completion of three marketing electives, or completion of two electives and concurrent enrollment in the third elective. One of the marketing electives must be either Mkt 377, Mkt 470E or Mkt 473. Credit 3 units.

Operations and Supply Chain Management

OSCM 230. Management Science

Introduces concepts, methods, and applications of management science. Develops a more disciplined thinking process for approaching management situations by constructing, understanding, and using models both in other courses and on the job. Prerequisites: QBA 120 and Mec 290 or Econ 103B. Credit 3 units.

OSCM 356. Operations Management

Introduces a variety of common operations issues that are frequently dealt with in both manufactur-

ing and service industries and that affect other functions of the business. Specific topics include: inventory systems, process design and control, quality, facility location and layout, and forecasting. Prerequisites: Acct 2610, Mec 290 or Econ 103B, and completion or concurrent enrollment in OSCM 230. Credit 3 units.

OSCM 400B. Supply Chain Operations and Analysis

This class examines how companies manage the set of key processes involved in the design, procurement, production and delivery of goods and services to customers. Such processes include the management of materials, information, and financial flows in networks consisting of suppliers, manufacturers, distributors, and customers. Recent trends in communication technology, sophisticated information systems, globalization of operations and markets, increased demand for mass customization, and increasing customer expectations have made the coordination and integration of these flows within and across companies critical to the success of businesses. The course will focus on studying many of the qualitative strategic and operational aspects of supply chain management. In addition, it will provide students with quantitative modeling techniques and methodologies useful in the analysis and improvement of supply chains. Prerequisite: OSCM 356. Credit 3 units.

OSCM 458. Operations Planning and Control *Same as OMM 554.*

Examines the concepts and techniques essential for effective operations planning, scheduling, and control in various manufacturing and service organizations. Discusses the use of various models for inventory control, forecasting, production planning, and operations scheduling. Just-in-time techniques and material requirements planning systems will also be discussed. Prerequisite: OSCM 356. Credit 3 units.

Organizational Behavior

OB 360. Organizational Behavior Within the Firm

Provides a toolbox of analytical and interpersonal skills that are necessary to be an effective manager. Learn how these skills can have a significant impact on profitability. Objectives: (1) understanding research conclusions through explaining the dimensions of individual differences and how they impact motivation, job satisfaction, and ultimately organizational effectiveness; explaining group dynamics and how they determine effectiveness; identifying organizational implications of research; evaluating organizational structure and job design; evaluating organizational culture and identify methods of culture management; and identifying the steps and roadblocks in the process of organizational change. (2) Develop management skills by writing effective reports to senior management that analyze individual, group, and organizational effectiveness in actual organizations; and applying your understanding of individual, group, and organizational dynamics to improve your team's effectiveness on group projects. Prerequisites: Mgt 100 or sophomore standing. Credit 3 units.

OB 400B. Leadership in Organizations

This course is designed to fulfill three broad objectives for students. The first is to provide a useful overview of the primary leadership perspectives, focusing on how each framework links individual leadership to organizational outcomes. The second objective involves students in self-assessment of strengths and weaknesses in relation to the abilities and skills that are predictive of leadership effectiveness. Third, the course is designed to enable participants to articulate an effective strategic plan for individual leadership development.

Course topics include perspectives on individual leadership effectiveness, leadership and motivation, developing subordinates, leading groups and teams, leading the resolution of conflict, and leading organizational change. Prerequisite: Sophomore standing. Credit 3 units.

OB 461. Negotiation

Skillful negotiation is an important aspect of management. Designed to improve a student's skills in analyzing and conducting negotiations in a variety of settings. Topics include two-party bargaining, multiparty bargaining, arbitration, and coalition formation. Prerequisite: OB 360. Credit 3 units.

OB 499. Internship

Credit to be determined in each case.

Quantitative Business Analysis

QBA 120. Managerial Statistics I

The first of a two-course sequence in introductory statistics. Approximately one-half of the course is devoted to probability: basic ideas, univariate and joint distributions, and expected values and moments. This work is followed by an introduction to the topics of sampling, sample statistics, and sampling distributions. The sampling theory topics of estimation and hypothesis testing are covered. Prerequisite: Completion or concurrent enrollment in Math 122 or Math 132. Credit 3 units.

QBA 121. Managerial Statistics II

The second of a two-course sequence in introductory statistics. The course is devoted to the use of linear regression models, ways to deal with its problems (such as collinearity, serial correlation, and heteroskedasticity), and time series regression and forecasting. There will be quizzes and group projects in addition to a midterm and final. Prerequisite: QBA 120 or approved equivalent; Math 122/132; and Mec 290 or 103B. Credit 3 units.

***Sam Fox School
of Design &
Visual Arts***

Sam Fox School of Design & Visual Arts

Carmon Colangelo, M.F.A.
Dean

College of Architecture/Graduate School of Architecture & Urban Design

Jerry Sincoff, FAIA, B.Arch.
Dean

Peter MacKeith, B.A., M.Arch.
Associate Dean

College of Art/Graduate School of Art

Jeff Pike, M.F.A.
Dean

Georgia Binnington, B.A.
Associate Dean of Students

Michael Byron, M.F.A.
Associate Dean of Faculty

Mildred Lane Kemper Art Museum

Sabine Eckmann, Ph.D.
Director

The Sam Fox School of Design & Visual Arts aspires to become a model for the creation, study, and exhibition of multidisciplinary and collaborative work. Linking strong studio programs in art and architecture with one of the country's finest university art museums, the Sam Fox School is dedicated to intellectual exchange, fostering creativity, and investigating art and architecture's impact on society.

The Sam Fox School is composed of the College of Architecture, the Graduate School of Architecture & Urban Design, the College of Art, the Graduate School of Art, and the Mildred Lane Kemper Art Museum.

The **College of Art**, founded in 1879, was the first professional, university-affiliated art school in the United States. In the 1940s, its broad-based core program helped set the standards for the bachelor of fine arts degree. Faculty over the years have included Max Beckmann, Philip Guston, and other internationally known artists.

The **College of Architecture**, established in 1910, was one of eight founding members of the Association of Collegiate Schools of Architecture (ACSA). In 1962, Architecture launched one of the nation's first Master of Urban Design programs. Four winners of the Pritzker Prize, considered architecture's highest honor, have taught at the school.

The **Mildred Lane Kemper Art Museum** dates back to 1881 making it the first art museum west of the Mississippi River. The collection has historically focused on contemporary work. Today the Kemper Art Museum holds roughly 3,500 important

paintings, sculptures, photographs, and installations by 19th-, 20th-, and 21st-century American and European artists, along with significant antiquities and a large number of prints and drawings.

Additional collaborative opportunities are provided by the Department of Art History & Archaeology in Arts & Sciences and the Kenneth and Nancy Kranzberg Art & Architecture Library.

Inquiry, Creativity, and Synthesis

The Sam Fox School offers rigorous art and architecture education at both the undergraduate and graduate levels, within the unique context of an independent, nationally prominent research university.

The student body is composed of approximately 350 undergraduate and 20 graduate students in Art, as well as 210 undergraduate and 160 graduate students in Architecture. In all, they represent 10 countries, 45 states, and the District of Columbia. Roughly 30 percent of undergraduates pursue combined studies within another University area.

Both core and advanced studios integrate contemporary theory and practice. Among the innovative programs:

- Multidisciplinary courses co-taught by Art, Architecture, and Art History & Archaeology faculty. Recent seminars have explored the history of illustrated entertainment; combined urban theory with book design and production; and crafted a variety of online publications. Courses in exhibition studies are being offered and a new program of exhibition studies is under development.

- International studios in Barcelona, Buenos Aires, Florence, Helsinki, and Tokyo, are taught by Washington University faculty and offer a range of distinctive programs in art and architecture.

- Community projects include the University City Sculpture Series, which funds student-designed public artworks; WashU City, a mentoring program for local high school artists; and Architecture's Hewlett Program, which explores relationships between St. Louis' inner city, nearby municipalities, and outlying suburbs.

Uniting Creativity and Scholarship

The Sam Fox School boasts a unique combination of academic and intellectual resources.

The Architecture faculty includes practicing architects, urban designers, and landscape architects as well as eminent architectural theorists and historians and a select number of international visitors. The 18 resident, full-time faculty members have won national and regional awards for design excellence and planning, including more than two dozen from the American Institute of Architects alone.

Art's full-time faculty members include prominent painters, sculptors, printmakers,

and mixed-media artists as well as leading illustrators, graphic designers, fashion designers, and photographers. In the last decade, design faculty have won numerous professional honors while fine art faculty have been featured in more than 100 solo exhibitions and 300 group shows on five continents.

The nationally recognized Kemper Art Museum maintains a vital program of exhibitions, publications, and educational events. Major thematic shows are drawn from institutions and private collections around the world, while the Contemporary Projects Series highlights nationally and internationally emerging artists. The acclaimed permanent collection includes key works by modern and contemporary artists from Henri Matisse, Pablo Picasso, and Jackson Pollock to Christian Boltanski, Candida Hofer, and Olafur Eliasson.

Public events include concerts; film screenings; lectures and discussions with distinguished visitors; and museum tours led by student docents. The museum also provides workspace for faculty- and student-curated exhibitions (usually relating to Sam Fox School curriculum). Courses in Art History and Archaeology further complement the critical and practical study of exhibitions while facilitating student involvement in professional curatorial projects.

A Comprehensive Campus

The Sam Fox School is housed in a comprehensive, five-building campus for design and the visual arts. Conceived around a central courtyard, it both reflects and updates Washington University's original campus plan, developed in 1895 by Frederick Law Olmstead, the founder of American landscape architecture.

The architectural centerpiece is prize-winning Japanese architect Fumihiko Maki's new Kemper Art Museum. This elegant, 65,000-square-foot limestone clad structure—a gathering point for scholars and the general public—includes more than 10,000 square feet of exhibition space; art storage facilities; and the Florence Steinberg Weil Sculpture Garden. The museum also houses the new Kranzberg Art & Architecture Library; Art History & Archaeology; and the Newman Money Museum, a state-of-the-art numismatics center.

Adjacent to the Kemper Art Museum is Maki's new Earl E. and Myrtle E. Walker Hall. The three-story, 38,000-square-foot building will contain graduate studios; painting and sculpture studios; and the Nancy Spirtas Kranzberg Studio for the Illustrated Book.

Flanking the new buildings are Bixby and Givens halls—historic homes to Art and Architecture, respectively—as well as Steinberg Hall, Maki's iconic modernist pavilion. Recent renovations include state-of-the-art computing environments; accessible, light-filled studios; and additional workspaces.

College of Architecture

Graduate School of Architecture & Urban Design

Jerome J. Sincoff, FAIA, B.Arch.
Dean

Peter MacKeith, B.A., M.Arch.
Associate Dean

Architecture and Education

Throughout history, architects have played a leading role in forming the environment and in interpreting the aspirations of societies in all parts of the world. As a practical and useful art, architecture embraces aesthetic, ethical, social, and technical responsibilities. Architecture responds to the way people live and, in turn, influences their lives.

Students considering an architectural education and architecture as a potential career express an excitement about design and building, as well as a commitment to the environment. If you plan to study architecture, you should have artistic ability and a good academic base. Personal interests in such areas as drawing, painting, photography, sculpture, building, and the environment suggest a possible aptitude for architecture.

Architecture reflects culture; architects must know their culture deeply. To gain an understanding of all aspects of architecture and to develop the attitudes and skills necessary to deal with them, you must have a broad liberal arts education. This base of cultural understanding and critical thinking is combined with a curriculum that focuses intensely on the study of architecture.

Architecture is an absorbing, fascinating profession. Choosing architecture as a professional career requires a major educational commitment at the undergraduate level and to further study in a professional degree program. With a professional degree in architecture, you may choose to work in small or large architectural firms, in academia, in community or governmental organizations, with development teams, and in a variety of related fields.

Architecture at Washington University

Washington University established the Department of Architecture as part of the School of Engineering and Architecture in 1902. The School of Architecture became an independent division of the University in 1910.

In 1932, Givens Hall, which houses the School, was constructed as a result of a generous gift in memory of Joseph W. and Kate Abbey Givens. The Art & Architecture Library and the Mildred Lane Kemper Art Museum are next to Givens Hall.

In 1967, the School of Architecture became one of the first schools in the United

States to offer a pioneering six-year joint-degree (Bachelor of Arts and Master of Architecture) program. The 4+2 program now leads to a thorough four-year Bachelor of Science in Architecture degree, followed by two years of graduate study for the accredited professional Master of Architecture degree.

Equally, the College offers the four-year Bachelor of Arts degree with a major in architecture—a strong, flexible undergraduate curriculum that also prepares you for graduate study in architecture, usually for three years. These undergraduate degree programs offer you the opportunity to gradually focus your undergraduate studies within the College and allow you to make an incremental commitment to a career in architecture.

The College of Architecture faculty are nationally and internationally renowned practitioners and researchers who are committed to your undergraduate experience. As your academic advisers, they work with the dean and associate dean to help you build an individualized curriculum, select specific courses, and chart plans for your future career.

Undergraduate Degree Programs

The College of Architecture offers four-year undergraduate degree programs leading to either a Bachelor of Science in Architecture degree or a Bachelor of Arts degree with a major in architecture. These degrees are valuable for their flexible and broad-based curricular nature, founded deeply on the study of the arts and sciences, with a gradually intensifying focus on the study of architecture. For those wishing a vigorous, humanistic, open-ended undergraduate education, these degrees offer a foundation in the field of architecture as preparation for continued education in a professional degree program, employment options in architecturally related areas, or opportunities and accomplishment in any field valuing innovative, synthetic, conscientious thought and work.

Both undergraduate degrees are conferred by the College of Arts & Sciences. The requirements for both degree programs are the same through the 300 level (typically the junior year).

The first and second years of study are spent taking courses in the College of Arts & Sciences and completing introductory design studios and architecture history (100 and 200 levels) in the College of Architecture. The third year of study, common to both undergraduate degree programs, is an intensive year of architectural design studios, supported by course work in graphics (from conventional hand-drawing techniques to digital rendering), architectural history, theory, and building technologies.

At the conclusion of the 300-level course work, students have several options. Satisfactory completion of the 300-level course work qualifies you for the Bachelor of Arts degree with a major in architecture. You can continue to take selected course work in the College of Architecture, including the 400-level

architectural design studios. But you may also elect to devote your final year's course work at Washington University to further study in the College of Arts & Sciences or other schools at the University, to participation in a term of study abroad, or to completion of a minor course of study or even a second major course of study (see Combined Studies).

Students may also elect to pursue more thorough advanced studies in architecture in their senior year, in a curriculum constituted by 400-level architectural design studios, structural analysis and design, and specific architectural history, theory, and urban issues seminars. Combined study options are also possible in this curriculum. Satisfactory completion of the full 400-level curriculum qualifies you for the Bachelor of Science in Architecture degree.

Students receiving the Bachelor of Science in Architecture degree can apply to two-year Master of Architecture programs. Students receiving the Bachelor of Arts degree with a major in architecture will usually apply to three-year Master of Architecture programs (see Graduate Degree Programs, page 292).

If you enter the College of Architecture as a first-year student, you may complete both the bachelor's and the master's programs in minimum of six years, in a professional degree structure called the 4+2. Using the Bachelor of Science in Architecture degree as the initial basis, the 4+2 curriculum we offer allows you to spend four years as an undergraduate and two years as a graduate student in the Master of Architecture curriculum (see the 4+2 Program, page 292).

Further information on the particular requirements and curricular structures of the undergraduate degree programs is listed below.

Combined Studies

Washington University offers you the option to study across disciplines and to take advantage of the wide range of courses available. You may choose to major in architecture and minor in another subject; you may major in architecture and choose a second major in another area within the College of Arts & Sciences; or you may major in architecture and choose a second major in an area from a different undergraduate school.

Undergraduate Degree Program Requirements

As a student in the College of Architecture, you select, in consultation with your adviser, a course of study that satisfies the formal degree requirements, addresses your interests, and best meets your overall goals.

I. General

Undergraduate students in the College of Architecture receive either:

- A. The Bachelor of Science in Architecture degree, or
- B. The Bachelor of Arts degree with a major in architecture.

These degrees are conferred by the College of Arts & Sciences. All undergraduates must therefore fulfill the re-

quirements of the College, as well as the requirements of their specific degree program in the College of Architecture. The degree program requirements are the same for both degrees through the junior year (300 level). Students then choose which degree program they wish to pursue at the conclusion of the junior level.

II. College of Arts & Sciences

Requirements

A. Basic Skills

1. *Writing I*: Every student must demonstrate proficiency in reading and writing the English language and must begin to develop mature skills in framing and revising arguments by completing course work as determined by the Department of English with a grade of C+ or better.
2. *Quantitative Analysis*: Every student must develop skills in quantitative analysis by completing one of an approved list of "QA" courses with a grade of C+ or better.

B. Arts & Sciences Degree

Requirements

Please refer to the distribution requirements of the College of Arts & Sciences found on page 27 of this Bulletin.

III. College of Architecture Requirements

A. Prerequisite Courses to the Degree Programs

In addition to the requirements of the College of Arts & Sciences, the College of Architecture also requires that the quantitative analysis requirement be fulfilled by Math 131 (placement by math department) or its equivalent. This quantitative analysis foundation is extended by required course work in Physics 117A, usually during the sophomore year.

To establish a basis for cultural understanding and critical thought, beginning students of architecture enroll in the two-semester sequence surveying the history of civilization, History 101C and 102C, usually in the freshman year. This historical and cultural studies foundation is extended by two semesters of required course work in architectural history, Arch 3283 and 3284, in the junior year.

The introductory architecture and design sequence is a set of courses prerequisite to both undergraduate architecture degree programs. The introductory architecture sequence is normally completed within the first two years of enrollment. The prerequisite courses are:

	<i>Units</i>
Arch 111-112. Introduction to Design Processes I and II	6
Arch 111A-112A. Introduction to Architecture I and II	2
Arch 211-212. Introduction to Design Processes III and IV	6

Arch 211A-212A. Issues in Design I and II2

These courses must be passed in sequence with a grade of C- or better.

B. Typical Freshman and Sophomore Programs for Architecture Students

The following typical programs for the freshman and sophomore years are based on the requirements of the College of Arts & Sciences, and on the prerequisite introductory architecture sequences for the undergraduate degrees in architecture:

<i>Freshman Year</i>	<i>Units</i>
Arch 111-112.....	6
Arch 111A-112A	2
Math 131	3
History 101C-102C	6
English Composition	3
Distribution/Discovery Requirements.....	12
Total	32

<i>Sophomore Year</i>	<i>Units</i>
Arch 211-212	6
Arch 211A-212A	2
Physics 117A	4
Electives	6
Distribution/Discovery Requirements.....	12
Total	30

If a student plans to enter the architectural design sequence Arch 311-312 in the fall of the junior year, the student must complete 60 units of academic work by the end of the sophomore year.

C. Degree Program Requirements

1. Bachelor of Arts Degree with a Major in Architecture

The major requirements for the Bachelor of Arts degree, with a major in architecture, are as follows:

	<i>Units</i>
Arch 311. Architectural Design I	6
Arch 312. Architectural Design II.....	6
Arch 321A. Architectural Representation I.....	3
Arch 321B. Architectural Representation II	3
Arch 3283. Architectural History I.....	3
Arch 3284. Architectural History II	3
Arch 333. Case Studies in 20th-Century Architecture	3
Arch 346. Building Systems I	3

2. Bachelor of Science in Architecture Degree

The major requirements for the Bachelor of Science in Architecture degree are as follows:

	<i>Units</i>
Arch 311. Architectural Design I	6
Arch 312. Architectural Design II.....	6
Arch 411. Architectural Design III.....	6
Arch 412. Architectural Design IV	6
Arch 3283. Architectural History I.....	3
Arch 3284. Architectural History II	3
Arch 333. Case Studies in 20th-Century Architecture	3
Arch 346. Building Systems I	3
Arch 447A. Structures I.....	3
Arch 448A. Structures II	3

Additionally, Bachelor of Science in Architecture candidates are required to

complete at least one course from the following:

	<i>Units</i>
Arch 546C. Climate and Light	3
Arch 552B. Site Planning.....	3

and to complete at least one architectural elective from the following groups:

Urban Issues Electives group, or Architectural History/Theory Electives group.

D. Minor in Architecture Requirements

Minor degree candidates are required to complete 18 units including:

1. Six units of introductory design, from the following:

	<i>Units</i>
Arch 111-112. Introduction to Design Processes I and II	6
Arch 211-212. Introduction to Design Processes III and IV	6

2. Three units (minimum) of the architectural history survey:

	<i>Units</i>
Arch 3283. Architectural History I	3
Arch 3284. Architectural History II	3

3. Three to 9 units chosen from the following electives:

	<i>Units</i>
Arch 111A-112A. Introduction to Architecture I and II	2
Arch 211A-212A. Issues in Design I and II.....	2
Arch 302. Freehand Drawing	3
Arch 333. Case Studies in 20th-Century Architecture	3

Additional courses as approved by the associate dean or dean.

IV. Additional Requirements

Each undergraduate student shall complete 120 units with a grade of D or better (or credit) and at least 30 units in advanced courses (numbered 300, 400, or 500). The 30 units in advanced courses may include the minimum number of advanced units required by the major areas of concentration. Courses required for the major (see College of Architecture Requirements) must be passed with a grade of C- or better.

Each student shall spend at least three semesters in full-time residence (at least 12 units per semester) at Washington University. Unless excused by the dean of the College of Architecture, the student must earn the last 30 units at Washington University. The dean of the College of Architecture may waive the full-time residence requirement for students who are employed full-time and have completed at least two years of college.

V. Regulations

A. No more than eight courses, exclusive of general studies courses, may be taken pass/fail.

B. You may enroll for credit in only one supervised performance course in any semester. You may earn a maximum of 12 units toward the degree in supervised performance and/or in group and individual performance courses combined.

The 4+2 Program: Bachelor of Science in Architecture and Master of Architecture

The College of Architecture's Bachelor of Science degree curriculum leads directly into the Graduate School of Architecture & Urban Design's two-year Master of Architecture degree program, providing for the attainment of the accredited professional degree in 6 years.

Students who have satisfactorily completed, or who are about to complete, the Bachelor of Science requirements can apply to the Graduate School of Architecture & Urban Design's Master of Architecture degree program by submitting an application to the Graduate Admissions Office and by requesting a review of their undergraduate work by the Graduate Admissions Committee. Admission is not automatic, however, and requires approval from the Graduate Admissions Committee. A portfolio is not required for students in the senior year of the Bachelor of Science curriculum at the time of application.

Bachelor of Science in Architecture students thus accepted into the two-year Master of Architecture degree program are required to complete the following courses to fulfill the requirements of the M.Arch. 2 degree:

	<i>Units</i>
Arch 347. Building Systems II	3
Arch 511. Architectural Design V	6
Arch 512. Architectural Design VI.....	6
Arch 544A. Acoustics and Lighting	3
Arch 580. Design Thinking (to be taken in penultimate semester)	3
Arch 611. Architectural Design VII	6
Arch 616. Degree Project	6
Arch 646. Professional Practice	3

Additionally, students entering the two-year Master of Architecture degree program with the College's Bachelor of Science degree must complete course work not addressed during the Bachelor of Science curriculum, as follows:

1. Completion of both Arch 552B, Site Planning, and Arch 546C, Climate and Light;
2. Completion of at least one elective course in Architectural History and Theory; and
3. Completion of at least one elective course in Urban Issues.

Students in the M.Arch. 2 degree program have 18 units (6 courses) of additional elective credits to complete.

Graduate Degree Programs

The Graduate School of Architecture & Urban Design's degree programs include a range of curricula for students with a variety of educational backgrounds, professional degree needs, and career ambitions.

Most states require that an individual intending to become an architect hold an ac-

credited professional degree. The National Architectural Accrediting Board (NAAB) accredits two types of degrees: (1) the Bachelor of Architecture (not offered by this College of Architecture), which requires a minimum of five years of study, and (2) the Master of Architecture, which requires a minimum of three years of study following an unrelated bachelor's degree or two years of study following a related preprofessional bachelor's degree. These professional degrees are structured to educate those who aspire to registration/licensure as architects.

The Graduate School's Master of Architecture degree (M.Arch. 3 and M.Arch. 2 programs) is an NAAB-accredited professional degree. The School's NAAB-accreditation status was evaluated and confirmed in the spring of 2005.

Master of Architecture Degree

Students holding bachelor's degrees in fields other than architecture are invited to apply to the Graduate School's accredited professional M.Arch. 3 degree program. Elementary calculus and physics are required as prerequisites for enrollment. While the curriculum typically spans seven semesters, you may complete this professional studies program in a minimum of three years including two summers.

Students with the Bachelor of Arts degree with a major in architecture, including studios at both the 300 and 400 levels, or the equivalent, are placed within the M.Arch. 3 curriculum on the basis of their previous design studio experience and overall academic record.

The Graduate School of Architecture & Urban Design welcomes graduates of other schools with the undergraduate degrees in architecture (Bachelor of Science in Architecture) or the equivalent as candidates for the accredited professional Master of Architecture degree program (M.Arch. 2). This curriculum typically spans four semesters.

Postgraduate programs, for students already possessing accredited professional degrees (Bachelor of Architecture or the equivalent), include the three-term M.Arch. 1 degree curriculum, or the Master of Urban Design degree program (see below).

Master of Urban Design Degree

Students with a professional degree or the equivalent in architecture, urban planning, or landscape architecture may apply for admission to the program leading to the Master of Urban Design degree. This degree is awarded upon completion of a three-term graduate curriculum devoted to urban design in metropolitan conditions.

Combined Degree Programs

The Graduate School of Architecture & Urban Design offers the following combined degree programs at the graduate level:

- Bachelor of Science in Civil Engineering—
Master of Architecture (see page 318)
- Master of Architecture—
Master of Urban Design
- Master of Architecture—

- Master of Business Administration
- Master of Architecture—
Master of Social Work
- Master of Architecture—
Master of Construction Management
- Cooperative 3+4 Program (see below)

Information on these combined degree programs can be obtained from the respective school's Office of Graduate Admissions. In all cases, application must be made separately to each graduate or professional program.

Information and Applications

An application to the graduate programs should include a portfolio of student work in the visual arts (drawing, painting, sculpture, etc.) or architectural design work if you have completed architectural design studio courses, along with your transcript or record from the institution you attended, and letters of recommendation. The Test of English as a Foreign Language (TOEFL) is required of international applicants along with verification of availability of funds.

For more information about graduate degree programs and requirements, contact the Director of Graduate Admissions, Graduate School of Architecture & Urban Design, Sam Fox School of Design & Visual Arts, Washington University in St. Louis, Campus Box 1079, One Brookings Drive, St. Louis, MO 63130-4899, or send e-mail to: wuarch@arch.wustl.edu.

Special Programs and Resources

Cooperative (3+4) Program

You may participate in one of the College of Architecture's cooperative programs designed for students who wish to obtain their undergraduate education at another college while preparing for architectural studies at Washington University.

In this program, you spend the first three undergraduate years at one of the participating colleges or universities. During the senior year, you attend Washington University, where you take courses in architecture, for which the credit is transferred back to your school to meet the requirements for your undergraduate degree. You may then apply for admission to Washington University's graduate program in architecture. If accepted, you will spend three years completing the Master of Architecture.

The College of Architecture offers a cooperative 3+4 program with Adrian College, Adrian, Michigan; Agnes Scott College, Decatur, Georgia; The American College of Greece, Aghia Paraskevi Attikis, Greece; Augustana College, Sioux Falls, South Dakota; Baylor University, Waco, Texas; Central University of Iowa, Pella, Iowa; Coe College, Cedar Rapids, Iowa; Colgate University, Hamilton, New York; the College of Wooster, Wooster, Ohio; Cornell College, Mount Vernon, Iowa; Earlham College, Richmond, Indiana; Grinnell College, Grinnell, Iowa; Hobart and William Smith Colleges, Geneva, New York; Knox College, Galesburg, Illinois; Macalester College, St. Paul, Minnesota; Monmouth College, Mon-

mouth, Illinois; Nebraska Wesleyan University, Lincoln, Nebraska; Principia College, Elsau, Illinois; University of Missouri, Columbia and St. Louis, Missouri, campuses; and Webster University, St. Louis, Missouri.

Study Abroad

A summer Architecture Study Abroad Program (Arch 484A) is available for sophomores and juniors in the College of Architecture. This six-week, six-credit program takes students through significant European cities, in a directed curriculum of urban and building analysis and appreciation. In the spring semester of the sophomore year, architecture students may apply for the College's junior year, spring semester architecture program in Florence, Italy. In the fall of the senior year, architecture students can study a full architecture curriculum with the Denmark International Studies program in Copenhagen, Denmark. These course credits are approved for full transfer to degree studies in the College of Architecture. For more information, you should contact the Office of the Dean in the College of Architecture.

As an architecture student, you are eligible to participate in the University's study abroad programs.

Independent Study

Opportunities for independent study are available to all graduate and undergraduate students. Registration in an independent study course requires sponsorship by an instructor and permission of the dean. A maximum of 5 units (graduate students), 3 units (juniors and seniors), and 1 unit (freshmen and sophomores) can be taken per semester. Independent study courses cannot replace architectural design studios or other required courses. An independent study proposal sheet approved by a faculty sponsor must be submitted to the Office of the Dean at registration time.

Summer School

The College of Architecture offers a limited number of courses during the summer, primarily Arch 447A-448A, Structural Principles I and II.

Continuing Education

Continuing education occurs in two areas within the College of Architecture: (1) the part-time evening Architectural Technology Program, and (2) the seminar and conference division.

The Architectural Technology Program allows students working full-time to pursue a Certificate in Architectural Technology or a Bachelor of Technology part-time during evenings and on Saturdays. Although most students in the program already work in the architecture profession, some students with nontechnical backgrounds also participate in the program.

Certificate in Architectural Technology

This 60-unit certificate program, which may be completed on a part-time basis over a four-year period, is designed to meet the needs of the architectural technician. Most courses involve problem-solving projects

similar to those encountered daily by architects in the built environment.

Courses assigned to any one year may be taken in an earlier year provided the necessary prerequisites have been fulfilled. Other courses may be substituted for required courses based on your prior work experience. The architectural technology courses are not designed for students in the regular full-time degree programs because the focus of the courses is mostly technical.

The final 20 units of the certificate program must be completed at the University; exemption from this regulation must be approved by the dean.

Bachelor of Technology in Architecture

This degree program requires 120 units of course work, including completion of the Certificate in Architectural Technology and the courses of concentration and respective electives. This degree may be completed on a part-time basis.

The Bachelor of Technology degree program differs from the full-time day school bachelor's degree programs. It is based on a core of technological studies to train students in the areas of project implementation and production communication. The two programs are similar in that they offer an overall balanced education in preparation for application and admission into professional-level graduate study. Upon completion of this program, you may apply for admission to the Graduate School of Architecture & Urban Design.

You may obtain a complete description of the continuing education programs from the Architectural Technology Office, Givens Hall, Room 106, Campus Box 1079, One Brookings Drive, St. Louis, MO 63130-4899, or call 314/935-6227.

Lecture Series

Each semester, distinguished academics and professionals are invited to give lectures at the College of Architecture. Recent lecturers include:

Spring 2006

Michael Willis, San Francisco, CA
Charles Rose, Boston, MA
Lise-Anne Couture, New York, NY
William Cronon, Madison, WI
Antoine Picon, Cambridge, MA
Ben van Berkel, Amsterdam, the Netherlands

Iñaki Abalos, Madrid, Spain
Rainer Mahlamäki, Helsinki, Finland
Olafur Eliasson, Berlin, Germany
William Valentine, San Francisco, CA
Marcelo Ferraz, São Paulo, Brazil
Robert McCarter, Gainesville, FL
Julie Bargmann, Charlottesville, VA
Chris Fannin, Charlottesville, VA

Fall 2005

Brian Healy, Boston, MA
Nader Tehrani, Boston, MA
Matthias Schuler, Stuttgart, Germany
Robert Hull, Seattle, WA
Michael Maltzan, Los Angeles, CA
Craig Dykers, Oslo, Norway
Gregg Pasquarelli, New York, NY
Larry Malcic, London, England

Procedures and Regulations

Registration

Detailed instructions for registration are mailed to already enrolled and newly admitted students.

Units and Grades

A unit is the amount of credit given for one hour of lecture or up to three hours of studio work a week for one semester. All students in the College of Architecture may take one non-required course on a Pass/Fail basis each semester. All students in the Graduate School of Architecture & Urban Design may select one of the following two grading options as they register for each semester: (1) grade option, or (2) pass/fail option. Under the grade option, a student may take one nonrequired course under pass/fail. Under the pass/fail option, all courses must be taken pass/fail.

Symbols used for both options have the following meanings:

Grade

P	Passing
A	Superior
B	Good
C	Average
D	Passing marginally
F	Failing
I	Incomplete. This grade signifies that the student has not completed part of the work of a semester (exclusive of examinations), but has satisfactorily completed the rest of the work. A student must remove a grade of I as indicated below.
W	Withdrawal
L	Audit
R	Repeat

Pluses and minuses are used. Each grade earned for a course taken for credit receives a specified number of grade points, and these points are affected by plus and minus grades as well.

In addition to grading under either the regular grade option or the pass/fail option, instructors teaching architectural design courses complete an evaluation form for each student; a copy is made available to the student, and the original is filed in the student's folder in the Office of the Dean.

Removal of Grades of I and Changes in F Grades

Incomplete marks in all architectural design courses (100 to 600 level) must be removed by the first day of classes of the following semester. Failure to remove the incomplete will prevent the student from continuing in another architectural design course.

In all other courses, the grade of I must be removed no later than the last day of classes of the next full semester. On failure to make up an I within the next semester, the student shall automatically receive an F in the course unless explicitly excused by the dean. An F grade, so received, may not be changed. Students will not be allowed to continue in courses requiring prerequisites if the prerequisite has an Incomplete grade. A

student who carries more than 9 units of incomplete work may be declared ineligible to re-enroll.

F grades for a semester may be changed only through the last day of classes of the following semester and then only in extraordinary circumstances. The Office of the Dean will approve no changes of F grades after this interval.

Retaking Courses in which a Passing Grade Has Been Received

When a student retakes a course in which a passing grade has been received, both enrollments will show on the transcript. If the second grade is equivalent to or better than the first grade, the first grade may be changed to R, indicating the re-enrollment upon request of the student and with department approval. If the second grade is lower, both grades will stand. Credit toward the degree will be allowed for only one of the enrollments.

Retaking Courses in which an F Has Been Received

When a student retakes a course in which an F has been received, both enrollments for the course will appear on the transcript. If a passing grade is received in the second enrollment, the first enrollment may be changed to R, indicating the re-enrollment upon request of the student and with the approval of the dean.

Maximum and Minimum Loads

Freshman and sophomore undergraduates will normally enroll in either 15 or 16 units each semester, although enrollment in up to 18 units is possible. Juniors and seniors in the architecture degree programs are strongly recommended to enroll in no more than 16 units each semester in order to maintain focus on the design studio and major requirements. This guideline can only be waived by the dean or associate dean. The normal load for graduate students is a maximum of 16 units each semester.

An enrollment above 18 units will be charged at the established University rate per hour of the additional credits and must be approved by the dean or associate dean of the College of Architecture.

Refer to the front of this *Bulletin* under the section covering tuition and fees for both the annual tuition rate and the per credit hour breakdown applicable to the College of Architecture.

Partial load enrollment is possible when circumstances warrant it and requires the permission of the dean.

Course Withdrawals

You may enroll in or withdraw from courses only at expressly designated periods of the semester. The dates of these periods are published in Course Listings.

Absences

Regular attendance at all classes and studio meetings is expected of each student. If, in the opinion of the instructor, any student has accumulated absences to such an extent as to preclude the possibility of satisfying the course requirements, the student's registra-

tion in that course will be canceled, subject to the approval of the dean.

Satisfactory Progress Toward a Degree

Students are expected to proceed at a pace that enables them to finish their degree within the appropriate time limit. For undergraduates this is usually eight semesters, and for graduates it is established by the letter of admission. Students are expected to complete no fewer than the minimum number of hours set forth in the schedule below:

Undergraduate Program

Semester 1	2	3	4	5	6	7	8
Credits	10	20	32	45	60	75	97

Graduate Program

Semester 1	2	3	4	5	6	7	8	9
Credits	6	12	24	36	48	60	75	90

Exceptions to these minimum standards may be granted only with the written consent of an academic adviser or the associate dean or dean.

Academic Warning and Probation

A student who fails to make satisfactory progress for two semesters toward the degree as outlined above will be placed on probation. The probation status serves as a warning that unless the quality of work improves, the student may be subject to dismissal from the College because of academic deficiency. Students dismissed for academic deficiency will not be eligible for readmission until they have demonstrated, under the conditions set for each individual case, their ability to do satisfactory work. A student will be taken off the probation list at the completion of two consecutive semesters of satisfactory progress.

A student who receives two or more grades of F in a semester will be placed on academic warning for the following semester. The warning serves as a notice that unless the student passes all courses in the following semester he or she will be placed on academic probation.

Withdrawals

If you wish to withdraw for any reason from the College of Architecture before the end of the semester, you should consult in person with the associate dean. No such withdrawal will be official until the request in writing has been approved by the associate dean and the appropriate changes have been made in your record.

Leave of Absence

A leave of absence for one or two semesters is normally granted to a student when individual circumstances, medical or personal, warrant it. A leave of absence assumes that the student will not be taking any academic work at another institution, and it guarantees re-enrollment at its conclusion. A letter from the dean granting a leave of absence will normally require notification by February 15 or November 15 of the student's intention to re-enroll in the following semester.

Retention of Student Work

The College of Architecture and Graduate School of Architecture & Urban Design reserve the right to retain any student work submitted for course credit. Normally this work will be returned to the student at the end of the semester, except that which has been retained for publications, exhibitions, or accreditation reviews. It is highly recommended that students photographically reproduce or electronically store their work in order to keep a record of their work.

Academic Integrity

Students and members of the faculty of a university have an obligation to uphold the highest standards of scholarship. Plagiarism or other forms of cheating will not be tolerated. Where a student has violated the integrity of the academic community, an instructor may recommend that the student be brought before the Committee on Academic Integrity. A set of guidelines on academic integrity and a list of procedural steps for bringing a complaint before the committee are printed each semester in the College of Arts & Sciences' section in Course Listings.

Honors and Awards

Dean's List

In recognition of exceptional scholarship, the Office of the Dean compiles, at the end of each academic year, a list of those students whose work has been particularly worthy of commendation. Students who entered the College of Architecture prior to the Fall of 2005 will be cited in the Dean's List if they:

1. Elect to take a minimum of 12 hours of course work per semester on the grade option (one elective course may be taken pass/fail each semester), and
2. Complete and pass a minimum of 27 units for the year and earn either 18 units of A or 12 units of A and 9 units of B. (Grade changes after June 15 will not be considered.)

Students who entered the College of Architecture in and after the Fall of 2005 and will be eligible for the Dean's List if they:

1. Elect to take a minimum of 14 hours of course work per semester on the grade option, and;
2. Achieve a semester grade point average of 3.5 or better.

All undergraduate students electing the grade option are candidates for the Dean's List unless they notify the Office of the Dean in writing that they do not wish to be considered.

Senior Honors

Senior Honors may be awarded to graduating students whose academic performance has been outstanding. Candidates for Senior Honors will be recommended to the College of Arts & Sciences by the Dean.

To be eligible for Senior Honors, a student must have been cited on the Dean's List twice in the first three years or achieved a cumulative grade point average of 3.5 or above through his or her penultimate semes-

ter. You may be considered for the Bachelor of Arts degree and Bachelor of Science degree *cum laude*, *magna cum laude*, or *summa cum laude* as determined by the dean. Nomination for Senior Honors will ultimately depend on the student's attitude toward learning demonstrated by academic records and faculty recommendations.

Special Awards, Medals, and Prizes

Undergraduate

Betty Lou Custer Award. The St. Louis Chapter of the American Institute of Architects presents a book award in memory of Betty Lou Custer, longstanding executive director of the chapter, to an outstanding graduate receiving either undergraduate degree. In recognition of Custer's service to the profession of architecture, the prize is awarded to a student who has contributed willing service to the College of Architecture.

Faculty Award. The faculty of the College of Architecture offers a book award to an outstanding B.A. or B.S. undergraduate in the College.

Sophomore Book Prize. Presented to an outstanding sophomore who has completed the basic design sequence within the College. Given in honor of Leslie J. Laskey, professor emeritus, whose inspired teaching formed the basis of the basic design program and whose influence is carried on in the lives and work of the students who studied with him.

Graduate

Alpha Rho Chi Medal. Alpha Rho Chi, a national social fraternity in architecture, awards a medal to the graduating sixth-year student who has shown an ability for leadership, has performed willing service for the Graduate School of Architecture & Urban Design, and has given promise of real professional merit.

American Institute of Architects Medal. Each year the AIA medal is awarded to a member of the graduating class in recognition of scholastic achievement, character, and promise of professional ability. The student so honored receives the engraved medal. The runner-up also may be awarded a certificate, depending on the decision of the faculty. The awards are made in the name of the Henry Adams Fund by the AIA.

All School

James Walter Fitzgibbon Prize. Mrs. James Fitzgibbon and friends of the family established a fund to honor Professor Fitzgibbon's memory and to recall his long and distinguished service on the faculty of architecture. The annual income from this fund provides for the Fitzgibbon Prize, given to a 300- to 600-level student who has the winning solution to a one-day sketch problem.

William Tao Prize. Established by William K.Y. Tao, P.E., alumnus, emeritus trustee, and affiliate professor at Washington University, the William Tao Prize provides an annual cash award to students who have demonstrated excellence in the understand-

ing and application of building systems in architecture, including illumination, electrical and mechanical engineering, and energy-efficient design.

Frederick Widmann Prize in Architecture.

Through a bequest from the late Frederick Widmann, an annual prize of at least \$1,500 is offered to the best architectural student in the University. The selection is made by the faculty of the architecture college.

Scholarship Funds

Washington University scholarship funds open to all undergraduate students are listed under Financial Support in this *Bulletin*.

You should have your credentials, as well as all regular application materials, on file no later than February 1. The Profile form, published by the College Board, is required. For more information, you may write to the Office of Student Financial Services.

The following funds are specifically directed to students in architecture. No separate application is needed unless otherwise noted.

Arthur M. Abrams Scholarship. Awarded to financially deserving students in the College of Architecture who have demonstrated high scholastic ability.

St. Louis Chapter American Institute of Architects Scholarship Fund. For students from the St. Louis metropolitan area who have completed the first two years of their architectural studies. Inquiries should be addressed to the St. Louis Chapter AIA, 911 Washington Avenue, #225, St. Louis, Missouri 63101. Separate application is required.

The William Rumsey Barnes Scholarship. Established for undergraduate students in the College of Architecture. Awarded to students demonstrating financial need and academic achievement.

Marilla E. Comstock Scholarships. Established for men in architecture who could not otherwise obtain a university education. Bequest of Mrs. Comstock.

Thurston C. Ely Architectural Scholarship for High School Seniors Interested in the Profession of Architecture. Established in the name of the late Thurston C. Ely, a graduate of the School of Architecture, this scholarship is open to qualified applicants for admission to the freshman class of the College of Architecture. Candidates for participation in the benefits of this scholarship will be considered in the following order:

1. First preference to graduates of Roosevelt High School, St. Louis, Missouri.
2. Second preference to graduates of public and private (including religiously affiliated) high schools or equivalent schools within the metropolitan St. Louis area (to include all schools in the city of St. Louis, Missouri, and the Missouri counties of St. Louis, St. Charles, and Jefferson).
3. Third preference to graduates of public and private (including religiously affiliated) high schools or equivalent schools outside the metropolitan St. Louis area

but within the state of Missouri.
The James W. Fitzgibbon Scholarship in Architecture. Awarded to support four years of study leading to either undergraduate architecture degree. The Fitzgibbon Scholar is selected in recognition of outstanding academic performance and promise in the field of architecture. The scholarship is in the amount of full tuition plus a \$1,000 stipend, renewable for a total of four years of undergraduate study. Up to five partial-tuition scholarships are also available. For more information, contact the Office of Undergraduate Admissions. Separate application is required.

The Millstone Family Scholarships. Established for students in the College of Architecture and the Graduate School of Architecture & Urban Design, the scholarships are awarded annually to students exemplifying strong academic skills and financial need.

The Jule A. and Hazel Schweig Scholarship. Awarded annually to an undergraduate student with strong academic credentials and established financial need.

Phillip Richardson Shepley Memorial Scholarship. Awarded to financially deserving students in the College of Architecture and the Graduate School of Architecture & Urban Design who have demonstrated high scholastic ability.

Loan Fund

Gustel and Edith H. Kelwitt Scholarship Loan Fund. For students of architecture.

Faculty

Jerome J. Sincoff, FAIA
Dean, College of Architecture
B.Arch., Washington University

Peter MacKeith
Associate Dean, College of Architecture
Associate Professor
M.Arch., Yale University

Co-Directors, Undergraduate Program

Iain A. Fraser, Professor
M.Arch., Washington University
John Hoal, Associate Professor
Ph.D., Washington University

Co-Directors, Graduate Program

Paul Donnelly, FAIA
Rebecca and John Voyles Professor
of Architecture
M.S., Columbia University

Adrian Luchini
Raymond E. Maritz Professor of
Architecture
M.Arch., Harvard University

Director, Master of Urban Design Program

Eric Mumford, Associate Professor
Ph.D., Princeton University

Director, Architectural Technology Program

William Wischmeyer, Affiliate Associate Professor
M.Arch., Washington University

Endowed Professors**Juhani Pallasmaa**

Raymond E. Maritz Visiting Professor, 2003–2004
Dipl.Arch., Helsinki University of Technology

Bryan Healy

Ruth and Norman Moore Visiting Professor, Fall 2005
M.Arch., Yale University

Marcelo Ferraz

Ruth and Norman Moore Visiting Professor, Spring 2006
Dipl. Arch., Universidade de São Paulo

Professors**Carl Safe**

M.Environmental Design, Yale University

Thomas L. Thomson

M.Arch., University of California–Berkeley

Associate Professors**Gia Daskalakis**

Dipl. de Postgrado, Universidad Politecnica de Catalunya

Robert Hansman

B.F.A., University of Kansas

Stephen P. Leet

B.Arch., University of Kentucky

Assistant Professors**Sung Ho Kim**

M.Sci., Massachusetts Institute of Technology

Zeuler Lima

Ph.D., Universidade de São Paulo

Paula Lupkin

Ph.D., University of Pennsylvania

Jacqueline Tatom

D.Des., Harvard University

Jane Wolff

M.L.A., Harvard University

Heather Woolfer

M.Arch., Harvard University

Visiting Associate Professors**Jeffrey Berk** (Buenos Aires)

Dipl.Arch., Universidad de Buenos Aires

Gerardo Caballero (Buenos Aires)

M.Arch., Washington University

Gustavo Cardon (Buenos Aires)

Dipl. Arch., Universidad Nacional de Rosario, Argentina

Jouni Kaipia (Helsinki)

Dipl.Arch., Helsinki University of Technology

Pia Sarpaneva

Dipl.Arch., Helsinki University of Technology

Makoto Watanabe (Tokyo)

M.Arch., Harvard University

Yoko Kinoshita Watanabe (Tokyo)

M.Arch., Harvard University

Visiting Assistant Professors**Roy Mäntärii** (Helsinki)

Dipl.Arch., Helsinki University of Technology

Aino Niskanen (Helsinki)

Dipl.Arch., Helsinki University of Technology

Jodi Polzin

M.Arch., Columbia University

Fernando Williams (Buenos Aires)

Dipl.Arch., Universidad de Buenos Aires

Affiliate Professors**Peter Clarkson**

Dipl., Construction Management, Liverpool Polytechnic

Carl Rosenberg

M.Arch., Massachusetts Institute of Technology

Affiliate Associate Professors**Philip Holden**

M.Arch., Washington University

Richard Janis

M.Arch., Washington University

Gay Goldman Lorberbaum

M.Arch., Washington University

M. Jana Perea

D.Des., Harvard University

Affiliate Assistant Professors**Esley Hamilton**

M.S., University of Wisconsin

Dan Hellmuth

M.Arch., Georgia Institute of Technology

George Johannes

M.Arch., Washington University

Robert Pettus

B.S.A.S., Washington University

Michael Repovich

M.Arch., Washington University

R. Phillip Shinn

B.S.E., Princeton University

Lecturers**Randy Burkett**

B.A.E., Pennsylvania State University

Liane Hancock

M.Arch., Columbia University

Patricia Heyda

M.Arch., Harvard University

Tom Polucci

M.Arch., Washington University

James J. Scott

J.D., Saint Louis University

Carolyn Toft

M.A., Washington University

Professors Emeriti**Gerald Gutenschwager****Sheldon S. Helfman****Udo Kultermann****Leslie J. Laskey****Donald Royce****Dean Emeritus****Constantine E. Michaelides**, FAIA**Full-Time Positions**

Faculty members have 9- or 11-month full-time renewable appointments. These may be tenured or nontenured positions and are titled professor, associate professor, and assistant professor of architecture.

Visiting Positions

Faculty members have full-time appointments for a limited period of time, usually no less than a semester and no more than one full academic year. These are nontenured positions and are titled visiting professor, visiting associate professor, and visiting assistant professor of architecture, and visiting architect.

Part-Time Positions

Faculty members, who usually are practicing architects, have less than full-time appointments. These individuals may teach as many as two courses each semester or as few as one course, one semester a year. These are nontenured positions and are titled affiliate professor, affiliate associate professor, and affiliate assistant professor of architecture, and lecturer.

Undergraduate Courses

This listing provides a general outline of courses offered at the College of Architecture and the Graduate School of Architecture & Urban Design in a given year. A Course Directory, issued annually and supplemented on a semester basis, contains up-to-date information on courses, teaching assignments, and more.

Arch 100A. English Language Support for Architecture

Same as ELP 112.

Arch 111. Intro to Design Processes I

This is the first semester of a two-semester sequence that includes both two-dimensional and three-dimensional work each semester. Two-dimensional work includes freehand drawing, various methods of representation of form and space, graphic design, and layout. Three-dimensional work includes issues of problem definition, problem solving, materials, structure, fracture, spatial relationships, and systematic processes of design. Students will alternate between two- and three-dimensional work and develop connections between them. Concurrent registration in Arch 111A required for Architecture students. Non-architecture students must receive permission of the Associate Dean of the College of Architecture. Same as F20 211, Section 01. Credit 3 units.

Arch 111A. Introduction to Architecture I

Lectures examining historical, theoretical, and professional perspectives in architecture. Credit 1 unit.

Arch 112. Introduction to Design Processes II

This is the second semester of a two-semester sequence that includes both two-dimensional and three-dimensional work each semester. Two-dimensional work includes freehand drawing, various methods of representation of form and space, graphic design, and layout. Three-dimensional work includes issues of problem definition, problem solving, materials, structure, fracture, spatial relationships, and systematic processes of design. Concurrent registration in ARCH 112A required for architecture students. Non-architecture students must receive permission of the Associate Dean of the College of Architecture. Credit 3 units.

Arch 112A. Introduction to Architecture II

Lectures examining historical, theoretical, and professional perspectives in architecture. Credit 1 unit.

Arch 121. Community Building, Building Community (Hewlett Program)

Using St. Louis as the starting point, and through extensive walking tours and discussions, the course gradually reveals to students an interrelated set of histories that have given shape both to St. Louis specifically and to American metropolitan landscapes generally. The walking tours take something of a core sample of St. Louis, both geographically and historically. Along the core sample, the students encounter communities old and new, large and small, rich and poor, rising and falling, heterogeneous and homogeneous, successful and unsuccessful, flourishing and devastated. Through these tours and readings and discussions, crucial questions concerning the ethics of architecture within larger social and ethical frameworks begin to take shape. The students' firsthand observations and reading are further reinforced and challenged through visits with and/or reviews by a wide range of people from the various communities—people who collectively represent not just a wide range of opinions, but often diametrically opposed opinions, as well. Architects build walls, literally and figuratively, and this course explores what happens on the other side of the wall, literally and figuratively, and how the act of building in the middle of people's lives—and questions of where, and how, and for whom—affect and are affected by the people on both sides of the wall. Credit 3 units.

Arch 209. Design Process

Same as CE 209, EnSt 209.

Open to Engineering and Arts & Sciences students at all levels. Studio course engages students in the process of design with an emphasis on creative thinking. Course content relates directly to the interests of engineers and all liberal arts students who wish to problem-solve about shaping the texture and quality of the built world. No technical knowledge or special drawing skills are required. Credit 3 units.

Arch 211. Introduction to Design Processes III

Exploration of basic design and architectural principles emphasizing the fundamentals of architectural space, conception and realization, materials and technique. Refinement of two-dimensional and three-dimensional means of representation. Non-architecture students must receive permission of the Associate Dean of the College of Architecture. Credit 3 units.

Arch 211A. Issues in Design I

Conceptual, theoretical, and historical perspectives in design and architecture. Credit 1 unit.

Arch 212. Introduction to Design Processes IV

Studio that initiates architectural and building issues such as: building analysis, structure, organizational systems, and programming. Prerequisite: Arch 211 and concurrent registration in Arch 212A. Credit 3 units.

Arch 212A. Issues in Design II

Lectures presenting design concepts that form the focus of exercises presented in Arch 212. Prerequisite: Satisfactory completion of Arch 211A or permission of the Associate Dean of the College of Architecture. Credit 1 unit.

Arch 281. Independent Study

Prerequisite: Sponsorship by an instructor and permission of the Dean of the College of Architecture. Sophomores may register for 1 unit. Credit 1 unit.

Arch 282. Independent Study

Credit 1 unit.

Arch 302A. Advanced Freehand Drawing

Application of basic principles to more ambitious and individualized work. Work can include drawing, color, painting, printmaking, etc. The final target is a suite of independent works that explores a chosen medium or subject and that could constitute a small one-person show, but exploration and growth are given precedence over production. Weekly/bi-weekly critiques. Prerequisite: Arch 302 or equivalent previous studies. Credit 3 units.

Arch 305. Special Projects in Design

Individualized design projects developed within a workshop setting. Students select, research, develop, and realize projects with collaboration of workshop members, consultants, and advisors. A continuation of design issues initiated in the Basic Design Sequence: nature of materials, craft, facture, scale, function, etc. Work augmented by readings, field trips, and guests. Meeting schedule and time to be established by group. Workshop limited to 8 members. Permission of instructor required. Credit 3 units.

Arch 311. Architectural Design I

Prerequisite: Arch 212 with a grade of C- or better. There is a required weekend, out-of-town field trip. Credit 6 units.

Arch 312. Architectural Design II

Prerequisite: Satisfactory completion of Arch 311. Credit 6 units.

Arch 317. Architectural Design I (M.Arch. 3)

The first of a three-semester sequence that introduces students to architectural design, focusing on conceptual, theoretical, and tectonic principles. First-semester M.Arch. 3 students only. Credit 6 units.

Arch 318. Architectural Design II (M.Arch. 3)

The second of a three-semester sequence of design studios. Continues examination of issues raised in Arch 317. Second-semester M.Arch. 3 students only. Credit 6 units.

Arch 320A. Architectural Representation I (Undergraduate)

Credit 3 units.

Arch 320B. Architectural Representation II (Undergraduate)

Credit 3 units.

Arch 323A. Architectural Representation I (M.Arch. 3)

Credit 3 units.

Arch 323B. Architectural Representation II (M.Arch. 3)

The course examines the history/theory and practice of representation, specifically the systems of drawing used in architecture. The objective is to develop the requisite discipline, accuracy, and visual intelligence to conceptualize and generate a relationship between space and form. The course focuses on two concurrent tasks: first to outline and analyze the historical development of representational logics and their impact on architectural ideation, and second to explain the codification and usage of specific geometries, including ortho-

graphic and isometric projection, central and parallel perspective, and architectural axonometric. We see that, rather than a translation of reality, representation operates between perception and cognition as a transcription of reality and is a powerful instrument in the design and making of architecture. The relationship between the drawing forms and the tools used to produce them are brought into focus as manual, digital, photographic, and physical applications driven by drawing intentions. This course is organized as a lecture/lab with emphasis on the practice of digital media and physical modeling. Emphasis is on participation, and excessive absences will be noted. *Please note:* The second half of the semester focuses on computing, for which each student is required to have a laptop computer. Credit 3 units.

Arch 326A. Introduction to Computing in Architecture

This course is focused on the application of computer technologies in the analysis and design of our built environment. Computer technology is presented as a related tool for support of the Architectural studio environment. Curriculum provides for the correct use of vector imaging (CAD), raster imaging, and Internet technologies, as well as rapid prototyping techniques for architectural inquiry. Overlapping digital and physical projects synthesize the dynamic nature of computing in a studio environment. Examples of technologies explored include (but are not limited to) large-format raster printing, multi-resolution monitor presentation, distance collaboration, 2D- and 3D-digital model building, and laser cutter component output. These technologies are utilized to analyze successful architectural works in order to explore the benefits and strengths of computing in the architectural process. Credit 3 units.

Arch 326C. Advanced Concepts in Architectural Computing

The current developments in digital technology allow mathematical expressions to transform complex dynamic systems that have shifted the formal discourse of architecture. The new digitally based techniques are being invented to inform creative processes in architecture through the manipulations of complex geometrical and topological forms. This course focuses on developing new techniques that translate these mathematical developments into diagrammatic design strategies. The animation and modeling software MAYA are deployed by the students for the investigation. Students are taught MAYA with a conceptual development for defining and inventing dynamic-based architectural proposals with multiple perceptions in spatial formations. Credit 3 units.

Arch 326D. Prototyping the Responsive Dynamic Media Wall

The seminar focuses on designing and constructing a working prototype for a Responsive Dynamic Media Wall currently being developed by the College of Architecture and the computer science department. The seminar develops and solves certain design problems in tectonics, material, mechanization, electronics, computational, spatial, and social issues addressing the project. The seminar endorses more of a research lab atmosphere with a collaborative working environment between designers and scientists. Credit 3 units.

Arch 3283. Architectural History I: Pre-Modern Encounters in World Architecture

This course explores the history of architecture from its origins until the beginnings of the modern period from a global perspective, focusing on patterns of interaction and exchange between and within both elite and vernacular building cultures. Using selected examples from Eurasia, Sub-Saharan Africa, and the Americas, the course traces the major elements of change and development in the design of the earth's built environment, including

technologies and materials, typology, the organization of labor and capital systems to the profession and the public. Course requirements include a mid-term, final exam, and research paper. Credit 3 units.

Arch 3284. Architectural History II: Architecture since 1880

An introductory survey of the history and theory of architecture and urbanism in the context of the rapidly changing technological and social circumstances of the past 120 years. In addition to tracing the usual history of modern architecture, this course also emphasizes understanding of the formal, philosophical, social, technical, and economic background of other important architectural directions in a global context. Topics range from architects' responses to new conditions in the rapidly developing cities of the later 19th century, through early 20th-century theories of perception and social engagement, to recent efforts to find new bases for architectural interventions in the contemporary metropolis. Credit 3 units.

Arch 333. Case Studies in 20th-Century Architecture

Good buildings speak clearly in a well-established vocabulary of shapes, forms, and spaces. Good architects similarly should try to talk about their art, its history, and their own thinking and designing with comparable fluency. This course aims to help students write and talk about architecture clearly and economically in language that is at once intelligent and intelligible to the educated reader and listener. Student activities include: attending lectures exploring case study buildings and texts from modern avant-garde architects; experimenting with modes of writing architectural texts examining case studies; developing writing abilities through revision, outside critique, workshop seminars, and peer analysis; creating theoretical constructions through writing based on drawing analysis of case studies; and gaining exposure to contemporary practice through student case study presentation and writing. By studying the theoretical positions of an architect and looking closely at the specific project context and technical parameters, the research of student case studies may provide a parallel example to a design student's process in studio. In addition, the research contributes to an informed understanding regarding current discussions in architecture. Between the lectures and student works, the class gains exposure to current ideologies in architecture. The course consists of a weekly lecture and a separate workshop meeting. Credit 3 units.

Arch 336A. Sustainability

This student-initiated course seeks to define sustainability and its relation to our built environment through the lens of anthropology, environmental science, business, law, and architecture. The course networks the University's resources by bringing professors from varying disciplines to speak weekly on the issues of sustainability and design. We examine broad issues from history, philosophy, and literature to practical studies of current land use, climate, and technology. Credit 3 units.

Arch 339. Concepts and Principles of Architecture I

This weekly seminar course addresses issues of Western architectural thought through a focused series of readings and discussions. The necessity and role of architectural theory in general are examined. Issues of tectonics, historicism, typology, regionalism, modernism, post-modernism, and other critical frameworks for the consideration of architecture are thematic subjects of discussion. Selected readings include Vitruvius, Alberti, Laugier, Semper, Ruskin, Le Corbusier, Gropius, Kahn, Rossi, Venturi, Eisenman, Libeskind, and Koolhaas. Weekly reading assignments, atten-

dance, participation, one summary and discussion introduction based on a reading topic, final paper. Required for first-semester M.Arch. 3 students. Fulfills History/Theory elective for M.Arch. 2 students. Credit 3 units.

Arch 346. Building Systems I

The first of a two-course building systems sequence. The course progresses from a survey of the physical and structural properties of building materials through an analysis of building assemblies and systems. Structural systems are examined relative to their performance characteristics and issues related to manufacturing and construction. Structural systems in wood, steel, and concrete along with masonry systems are reviewed in this class. Additionally, the primary and secondary performance characteristics of enclosure systems are identified and analyzed in this course. This course also covers the design of egress systems and vertical transportation systems in buildings. Though the course focuses primarily on the underlying principles associated with these building systems, industry standards and building code requirements are an integral part of the review. Credit 3 units.

Arch 347. Building Systems II

Building Systems II is a lecture/workshop course. It is the capstone course in the technology sequence. The course comprises a series of lectures related to technical theory, an analysis of technical precedent, and an integration exercise. The lectures focus on structure and enclosure systems, active and passive climate control systems, natural and artificial lighting systems, mechanical and electrical services for buildings. The lectures take place over the course of the semester. During the first half of the course, students conduct the analysis of technical precedent in architecture exercise. Technical precedents are analyzed relative to their performance characteristics and their relationship to other technologies in the building. During the second half of the semester, students conduct an integration exercise. Technical systems are selected based on architectural issues, performance characteristics, and systems integration. Credit 3 units.

Arch 381. Independent Study

Prerequisite: Sponsorship by an instructor and permission of the Dean of the College of Architecture. Credit: To be determined in each case. Credit variable, maximum 5 units.

Arch 382. Independent Study

Credit variable, maximum 5 units.

Arch 391. Architecture of Eastern Asia

This architectural history lecture course gives students a broad overview of the traditional and modern architectures of East Asia (China, Japan, and Korea). The course starts by examining the intellectual and cultural foundations of East Asian cultures. Case studies of traditional buildings and sites from pre-history to the 19th century then follow. Monuments of civil, religious, domestic, funerary, and landscape architecture are discussed. Themes of environment (particularly geomancy, i.e. feng shui), mass production, hierarchy, and systematization are emphasized. Traditional types of East Asian urbanism also are a focus. The final section of the class looks at how issues of modernity (nationalism, professionalism, technology, Western influence, etc.) had an impact on the built environments of the Far East in the 20th century. Students should leave the course with a deeper understanding of East Asian spaces and places, and the contributions of these distinctive building cultures to world architecture. Course requirements, besides a midterm and final, include a brief (7-10 page) research paper addressing some site or issue of specific interest to the student. A short assignment utilizing the Asian collections of the Saint

Louis Art Museum also may be assigned. Class participants also are invited to attend a field trip to view the Chinese and Japanese gardens at the Missouri Botanical Garden, offered in conjunction with the concurrent seminar being taught on East Asian gardens and landscapes. Fulfills History/Theory elective requirement. Credit 3 units.

Arch 402A. Measured Representation

This course proposes to investigate and create a series of measured drawings. The drawings, as architectural objects, configure architectural knowledge, perception, and vision. We begin by studying precedent drawings in relation to each architect's theoretical framework, project description, and technique. The range of works relate different types of construction (perspectives, axonometrics, diagrams, ideagrams, assemblages, montages, descriptive geometry, and mapping) with integral and symbiotic theoretical agendas. Each student learns the techniques of representation in the case study and from this example constructs an interpretation of a specified site in this language. With a collection of theoretical frameworks and workshops on various techniques, the class qualifies a series of sites through drawing/interpreting the shadows present. Shadows may be thought of as reductions of the real object—in this sense, the drawings act as abstractions or reductions that promote vision. Instead of simply discussing qualities of space, narratives of metaphor, intangible phenomena, implications of constructed geometry, this architectural research project attempts to propose methods of seeing such that the representation may play a more active role in the shaping of design. This course centers on the creation of imaginative processes of representation. Credit 3 units.

Arch 405A. Furniture Design for the Architect

Students design and fabricate furniture. The box and chair are used as vehicles to study historic examples of furniture design, structure, fabrications, and finishing techniques. Other issues addressed are: material awareness and craftsmanship. Evaluation of the final products is based on design, structure, craftsmanship, material use, beauty, and finish. Credit 3 units.

Arch 405D. Furniture Design

The course focuses on the design of tables using wood as the primary material in response to "rational and irrational strategies" (systematic and emotional). Each student designs, develops, and builds prototypes of two tables using the same material. One table is the product of a systematic analysis of material qualities, production procedures, and other constructivist principles. One table is the product of more explicitly intuitive, emotional, and interpretive responses to the nature of the material and its production. Course limited to 10 students. Credit 3 units.

Arch 406J. Woodworking

The content of this workshop is woodworking technique and appropriate design for this material. Credit 1 unit.

Arch 406L. Perspective Drawing

A study in perspective drawing methods, using the traditional construction methods as a starting point, and then exploring alternative approaches. The fundamentals of one-point and two-point are covered along with rendering techniques for formal and informal representations. A variety of rendering techniques are presented depending on situation of design and time allowed. Credit 1 unit.

Arch 406M. Mold-Making and Casting

Credit 1 unit.

Arch 406N. GIS Workshop

Credit 1 unit.

Arch 406P. 3-D Digital Tools for Studio

Credit 1 unit.

Arch 406R. Model Making

Credit 1 unit.

Arch 406S. Real Estate Workshop

Credit 1 unit.

Arch 406T. Re-representing the Skylines: Mapping Vertical Structures

This workshop provides a forum for employing digital techniques to trace and project coordinates of new objects and programs. The flow of information, people, and consumer goods shifting across fixed boundaries has demonstrated the unpredictable disturbances in our cultural network. This notion challenges the ever-multiplying systems of exchange, communication, and action by unfolding the wide spectrum of new architectural and urban conditions. Questions of aesthetics in speed, movement, deformation, infrastructure, surfacing, and fragmentation are allocated as the vehicle for the research. This research intends to develop a process of “design methodology” with an emphasis on conceptualization and abstraction as a means of generating design strategies. The workshop investigates the methods of producing spatial interventions based on perception of the urban skyline as a field of dynamic, cross-referenced organizational systems. Credit 1 unit.

Arch 406V. Metal Fabrication

Credit 1 unit.

Arch 406W. Simple Book Structures

Students investigate the form of the visual book through construction of several different book structures, among them, the accordion, the flag book, the tunnel, simplified case binding, and a portfolio case. This class investigates the organization of the visual book through the sequencing of images and the structure of the book as a reflection of content. It is hoped that the class permits the student to pursue new approaches to presenting visual information in book form. Credit 1 unit.

Arch 406Y. The Diagram

The purpose of this workshop is to fully understand how we can exploit the concept and method of the diagram in order to better access ideas, reveal themes, discover underlying processes and relationships, and ultimately, to better represent our final design intentions. The goal of the workshop is: to understand the position of the diagram in the architectural design process by looking at examples of architect’s drawings/other diagrams; to understand what diagrams can mean, and specifically how to use them in design; to test methods of drawing and diagramming through a series of targeted exercises; and to be able to further exploit ideas and designs through their representation—skills for the larger context of the architecture studio, and for future analyses. Credit 1 unit.

Arch 406Z. Vertical and Horizontal Structures

Designing with advanced digital modeling and CAD/CAM output through laser cutting and CNC milling. Students develop complex structural systems through virtual design tools and translate them into physical objects that can be programmed for human interaction. Credit 1 unit.

Arch 410. Applied Studies in Design/Build

Credit 1 unit.

Arch 410C. Bamboo, Wood, and Paper: Design Exercises

A workshop focusing on innovative design, detailing, and construction in bamboo, wood, and paper through construction of large-scale and full-scale models and prototypes. Credit 1 unit.

Arch 410D. Printmaking

Credit 1 unit.

Arch 410E. Workshop: Abstraction by Sketch

The workshop focuses on developing and using the skills of sketching, both by drawing and modeling, to see form in architecture. Each workshop meeting focuses on one aspect of sketching in the framework of a project in the office of MacKay-Lyons Sweetapple Architects. Credit 1 unit.

Arch 410G. Scale: Measure, Proportion, Perception

Through a series of drawing exercises, students become familiar with issues of scale. Studies focus upon human measure, developments of proportioning systems, and ways in which the perception of scale can be utilized to create subjective readings of space. Credit 1 unit.

Arch 410H. Introduction to Digital Environments: MAYA

Credit 1 unit.

Arch 411. Architectural Design III

Prerequisite: Satisfactory completion of Arch 312. Credit 6 units.

Arch 412. Architectural Design IV

Prerequisite: Satisfactory completion of Arch 411. Credit 6 units.

Arch 419. Architectural Design III (M.Arch. 3)

The third of a three-semester sequence of design studios. Continues examination of issues raised in Arch 317 and 318. Credit 6 units.

Arch 421I. A Tale of Two Cities: Urban Form and Society in Chicago and St. Louis

Same as AMCS 4210.

Arch 421J. Building a Better World: Architecture and Social Reform in America

Architects, planners, and social reformers have addressed urban issues of poverty, crime, delinquency, labor unrest, and class and ethnic tensions through activist models of the public library and school, the YMCA, the playground, and the model home—or by a retreat from the city in the form of utopian settlements. This seminar examines the history of environmentalist thinking and social reform in the United States and to some extent, Europe, from the Enlightenment to the Second World War, including the work of Andrew Jackson Downing, Frederick Law Olmstead, Ernest Flagg, and Frank Lloyd Wright and critics such as Jane Jacobs and Prince Charles. The class becomes familiar with reform architecture and its context and assesses the effectiveness of this strategy as a solution to social problems. Open to graduate and upper-level undergraduate students. Fulfills History/Theory requirement. Credit 3 units.

Arch 421K. Modern vs. American: Rethinking the Architectural Relationship

Same as AMCS 412.

What is American about American architecture? Architects, historians, and theorists have asked this question throughout our nation’s history, but it gains renewed importance in this age of globalization. Can we, should we, continue to apply national labels to our architecture? This seminar examines the architectural culture of the United States in the 20th century, with special attention to the relationship between national identity and the internationalizing forces of modernity, particularly European modernism. Through analysis of theoretical writings, developments in education and practice, and key projects like the Chicago Tribune Tower Competition, the Illinois Institute of Technology, and U.S. embassies around the world, students gain insight into the dynamic between the local and the global in the design of the built environment. Course requirements include in-class

presentations, field trips, and a substantial research paper. Fulfills History/Theory elective requirement. Credit 3 units.

Arch 421M. Modernism in St. Louis

This seminar allows students to examine modernist architecture in St. Louis through a series of lectures followed by building tours of local examples. Lecture topics include: “Classicism Reevaluated,” “The FLW Influence,” “The International Style,” “Concrete Forms,” “Utopian Visions,” and “Personal Statements.” Among the works visited are those of Charles Eames, Frank Lloyd Wright, William Bernoudy, Harris Armstrong, HOK, Buckminster Fuller, Carl Safe, and Adrian Luchini. Each student is asked to document one of the buildings visited for an exhibition at the end of the semester. The course is limited to undergraduate seniors. The availability of a car is required. Credit 3 units.

Arch 421N. Building Detectives: A Practical Seminar on Researching Historic American Architecture in St. Louis

The purpose of this seminar is to both acquaint students with and give them practical experience in the methods of researching historic architecture, both in archives of primary documents and in the field. Initial course sessions are aimed at giving students necessary background in understanding both the formal (stylistic, technological, and material) and spatial content of historic buildings. “Reading” buildings for what they reveal about the social and material aspects of everyday life is emphasized. Then students learn how to use the documentary record to both uncover the history of individual buildings, as well as their urban and social contexts, by visiting local archival repositories. The remainder of the course sessions are spent in a group collaborative project, recording and documenting a particular building or set of buildings in a St. Louis neighborhood and uncovering the hidden histories encoded in structure, space, and the historical record. Around one-half to two-thirds of the class is spent in archives and in the field. Given the collaborative nature of the final project of this course, students are expected to be diligent in their attendance and to pull their own weight in helping to complete the final project. The site and the product of the course depends to some extent on enrollment—the more people in the class, clearly the more ambitious the project will be. At the very least, a visual (photographic and drawn) record of a historic building is produced, and a documentary record is established for it, and these are assembled in a form appropriate for public presentation. This documentation is intended to aid local St. Louis heritage/preservation/civic efforts. Credit 3 units.

Arch 423. History of Landscape Architecture

This seminar reviews the history of gardening in the Western tradition from the Renaissance to the present and in the Chinese and Japanese traditions. Park-making, neighborhood design, and the rise of landscape architecture as a profession receives attention, including several classes held at notable St. Louis examples. Course requirements include readings, a design or research project, and a final exam. Fulfills History/Theory elective. Credit 3 units.

Arch 4284. Architectural History II: Architecture Since 1880

An introductory survey of the history and theory of architecture and urbanism in the context of the rapidly changing technological and social circumstances of the past 120 years. In addition to tracing the usual history of modern architecture, this course also emphasizes understanding of the formal, philosophical, social, technical, and economic background of other important architectural directions in a global context. Topics range from architects’ responses to new conditions in the rap-

idly developing cities of the later 19th century, through early 20th-century theories of perception and social engagement, to recent efforts to find new bases for architectural interventions in the contemporary metropolis. This course is required for all M.Arch. 3 students. Credit 3 units.

Arch 4285. Architectural History I: Pre-Modern Encounters in World Architecture

This course explores the history of architecture from its origins until the beginnings of the modern period from a global perspective, focusing on patterns of interaction and exchange between and within both elite and vernacular building cultures. Using selected examples from Eurasia, Sub-Saharan Africa, and the Americas, the course traces the major elements of change and development in the design on the earth's built environment including technologies and materials, typology, the organization of labor and capital systems, and the codification and transmission of architectural knowledge and symbolism to the profession and the public. Course requirements include a mid-term, final exam, and research paper. Credit 3 units.

Arch 436. Mapping Soft Bodies/Constructing Complex Objects

Theory and Research on Digital Design and Manufacturing. "Body and soul are thus constructed in the same manner, at the intersection of a cluster of radii of curvature. Both are then simply effects of convergence that are constituted in space, on either side of the surface of the work that envelops them. It follows that the body is no less ideal than the mind." Bernard Cache, "Earth Moves." This course explores the complex systems of geometries that compose the human body. The students are to invent techniques of digital mapping the contours of the soft bodies and to define the potential for developing new forms of spatial effects uncovered through the digital representation. The mapping procedures are developed to trace and project the human scale and material interface imposed by the fluctuating movements of the bodies in dynamics. Through the making of these forms each student manufactures new objects through alternative prototyping techniques. Credit 3 units.

Arch 440. Explorations in Structural Principles

This course begins with a series of presentations (lectures) about primary systems in an effort to familiarize students with basic structural principles. This is a non-mathematical exploration of how structures "work" and why. We attempt to become conversant in the language of structures. Students identify a particular system and do case studies exploring its characteristics and how, where, and why the system has been used. These explorations ultimately lead to the development of large-scale (testable) models. Credit 3 units.

Arch 447A. Structures I

Statics and Strength of Materials through Beam and Column Theory. Loads are defined and states of stress are identified and analyzed. The context of structural behavior is identified and optimal structural behavior and material efficiency structural design are reviewed. Form-active, bulk-active, and vector-active structural options are explored relative to the transference of load along the length of structural members. The course applies structural theory to the analysis and design of structural members—beams, trusses, arches, and columns. Credit 3 units.

Arch 448A. Structures II

Continuation of Arch 447A with consideration of the effects of forces on structural members of various materials. Introduction to the design of structural members in steel, reinforced concrete, and wood. Prerequisite: Arch 447A Credit 3 units.

Arch 450B. Readings in Architecture

This weekly seminar course addresses issues of Western architectural thought through a focused

series of readings and discussions. The necessity and role of architectural theory in general is examined. Issues of tectonics, historicism, typology, regionalism, modernism, postmodernism, and other critical frameworks for the consideration of architecture are thematic subjects of discussion. Selected readings include Vitruvius, Alberti, Laugier, Semper, Ruskin, Le Corbusier, Gropius, Kahn, Rossi, Venturi, Eisenman, Libeskind, and Koolhaas. Weekly reading assignments, attendance, participation, one summary, and discussion introduction based on a reading topic, final paper. Fulfills History/Theory requirement. Credit 3 units.

Arch 454A. Contemporary Discourses on Public Space

Since the 1980s, public space has been a subject of intense theoretical debate and the key to urban revitalization strategies in cities such as Barcelona, Amsterdam, Berlin, London, Jerusalem, Curitiba, Toronto, New York, etc. Evident from the investigation into this theory and practice is the notion that the design of public space according to the typology of either the 19th century or modern city does not suffice and that the domain of contemporary public space demands a new discourse. This seminar investigates the theoretical framework and practice of various contemporary discourses on public space in order to reveal the implicit intellectual frameworks and practices. Discourses investigated include public space as the mimicry of history to public space as non-place; and from public space as the enclave of fear and marginality to public space as the theater of economic and social exchange. The seminar also situates the design discourse in the broader political, social, and philosophical discourses of the public sphere. Credit 3 units.

Arch 455A. Urban Books: Imag(in)ing St. Louis

Same as F20 ART 455A.

Since the beginning of the 20th century, art, architecture, and urbanism together have investigated the production of images that shape the symbolic dimension of our experience of large cities. This seminar critically embraces this tradition and brings together different methodologies for the visual analysis and representation of contemporary urban phenomena, using St. Louis as a focal point. The goal is to design and produce individual books as a result of research, visual documentation, readings, and discussions in a seminar and workshop structure. Each student selects and develops a theme related to the urbanization of St. Louis that is organized into books that present how this metropolitan area has been conceived through images. The course is divided into three parts combining readings, research, and design activities, each of which culminates in the presentation of an individual project, two study books, and a final book. The outcome of the course is a collection of student-produced books that will be presented in an exhibition titled "Imag(in)ing St. Louis" to take place consecutively at Olin Library and the Art and Architecture Library during the spring and fall semesters. Fulfills Urban Issues elective requirement. Credit 3 units.

Arch 464A. Architecture and Photography

Seminar that deals with issues raised by use of photography by architects, historians, and critics. Seminar confronts the assumption that our knowledge of notable buildings and architectural space is based primarily on the photographic image. Photographs are tacitly accepted as objective facts, and the pervasiveness of photography in magazines, books, and exhibits as substitute for direct experiences is rarely questioned. Goal of seminar: to foster a healthy skepticism of photographs, to investigate the role of photography as a means of record, and to convey complex spatial conditions by the ordering conventions of the frame. While not technical, the course introduces students to

technical aspects of photography that are particularly relevant to architectural photography: parallax, lighting, lens distortion, depth of field, format and grain, cropping, photomontage, and point of view. Fulfills History/Theory requirement. Credit 3 units.

Arch 464E. Spatial Representations in Contemporary Culture

The main objective of this seminar is to analyze the crisis of representation in contemporary culture and its relationship to architecture and the urban landscape, looking for a critique of architecture beyond formal aspects. The framework for the seminar is the transition of modernity into the contested terrain of postmodernity, and the limitations and possibilities faced by architects in the thinking and in the production of space. The activities are mainly organized along the reading and discussion of texts drawn from a multidisciplinary theoretical approach and by the analysis of examples of representation from films, artworks, architecture, and the city. Credit 3 units.

Arch 464F. Contemporary Theories in Architecture and Urban Practices

Since the 1960s, the practice of design in architecture and urbanism has been increasingly associated with a theoretical framework. Theory has both provided support to the investigation of the phenomena related to the built environment, and it has faced problems in the translation of abstract constructs into the practice of design. This seminar presents examples of relevant contemporary interpretive and critical theory, and confronts them with current practices in architecture and urbanism. The purpose of this confrontation is to develop skills to articulate individual critiques of design as a mediation between discourse and practice. Required work: The seminar activities take place in the form of reading and discussion of texts, and analyses of current examples of architecture and urban practices. Each student must investigate an individual case study to be presented in the form of a seminar as well as a final paper. Prerequisite: Arch 3283/4385 or 3284/4284. Fulfills History/Theory elective. Credit 3 units.

Arch 467. The Visible and the Invisible

This seminar on philosophy, criticism, and architecture provides an intellectual framework for making architecture by investigating the development of thought and ideas in other disciplines and the effect they have had in the arts. Specific assigned readings are presented and discussed by the class weekly. Emphasis is placed in the discussion and the formulation of personal interpretations developed after careful and thoughtful reading. This class offers an arena in which theory and practice, often seen as irreconcilable, can be understood as inseparable aspects of the same realm, informing both the author and the work. Fulfills History/Theory requirement. Credit 3 units.

Arch 470C. Built Space

Seminar course studying the constants and variables in building physical space at scales from small to large. Credit 3 units.

Arch 470D. The Description of Place

The means by which we come to an understanding of a place profoundly effects any subsequent action taken in that place—specifically the action of building. The possibility for place to gather and hold, not only things, but also ourselves, our memories, and our imaginations—the event of place—is defined as place becomes concretely defined and choreographed as a static background for action, rather than as a fluid and dynamic action itself. In order to reassert the active reflecting and gathering power of place and, subsequently, of architecture, the process of knowing and describing where we build needs to be reconsidered. This seminar focuses on the potential for visual description to effect alternative readings of place that

are otherwise obscured and speculate regarding the implications of such readings on the making of architecture. The course is divided equally between theory and making. In addition to discussions surrounding assigned readings, students select a specific place of study in St. Louis from which they develop different methodologies for observation and description over the course of the semester. Students have a choice of submitting either a final paper or project that speculates as to what new understandings have emerged and what possible actions could result from their study. Credit 3 units.

Arch 471A. Continuity and Transformation

Throughout history and across cultures, certain ideas, concepts, and organizational strategies have persisted in architecture, despite advances in social ideals and technological capabilities. The seminar explores the phenomenon of this continuity with the goal of uncovering the manner in which these ideas and strategies are transformed. Whether classified by use, characteristic form, or compositional device, the continuity of these notions is clearly traceable as a body of knowledge waiting to be revealed, understood, assessed and, when valid, built upon. The transformation of ideas and strategies is one of the most fundamental activities of the designer, but relies on careful study. We discover evidence of this phenomenon in vernacular architecture, patterns of settlement and habitation, and in the work of many of our most influential practitioners, such as Le Corbusier, Kahn, Moneo, and Zumthor, as well as in the realm of painting and sculpture including Cubism, Suprematism, and Expressionism. Credit 3 units.

Arch 481. Independent Study

Prerequisite: Sponsorship by an instructor and permission of the Dean of the College of Architecture. Credit variable, maximum 6 units.

Arch 482. Independent Study

Prerequisite: Sponsorship by an instructor and permission of the Dean of the College of Architecture. Credit variable, maximum 6 units.

Arch 484B. Notations on Florentine Architecture

This seminar proposes a historical survey of significant buildings and urban spaces in Florence through the graphic documentation and spatial analysis of selected sites and buildings from antiquity to the Renaissance and to modernism. The general framework of our analysis is to understand the relationship between the historic development of the city and its most symbolic architecture. This approach is based on the work of Italian scholars, such as Giulio Carlo Argan, who define the history of architecture as the history of the city. The course is methodically divided into two blocks of exercises. In the first part of the semester, we focus on readings, site visits, sketches, analytical drawings, and photos as well as the mapping of the urban development of Florence. In the second part of the semester, students focus on the tectonic study of specific buildings through the construction of representational and experimental models. Each student's individual work is contributed to a collective 2-D and 3-D final project to be presented as an exhibition in the Florence Studio during the spring and to be shown at the College of Architecture in the fall. Credit 3 units.

Arch 511. Architectural Design V

Prerequisite: Satisfactory completion of Arch 412. Credit 6 units.

Arch 512. Architectural Design VI

Prerequisite: Satisfactory completion of Arch 511. Credit 6 units.

Arch 520. Shifting from Lines to Surfaces/Virtual to Empirical

Digital Media Design: Introduction to Exploring Digital and CAD/CAM Technology. This is a course in computing theory and techniques on 2-dimensional digital software and advanced 3-dimensional modeling software. Weekly demonstrations on software operations and individual projects are developed. This course bridges the gap between 2-D computational tools that define lines and the 3-D tools that develop complex surfaces. These surfaces explore the possibilities of creating and articulating the nonlinear geometries manipulated on the digital environment. The final project consists of 2-D drawings, digital models, and physical models produced by advanced CAD/CAM technology. By employing alternative techniques and emerging technologies of manufacturing, new forms of objects and perceptions redefine multiple design processes. Credit 3 units.

Arch 525H. The Structure and Morphology of the City

This seminar investigates both the origin and evolution of the settlement pattern, structure, and form of Western cities; that is, the morphology and morphogenesis of the urban landscape. It explicates the detailed interplay of land, subdivision, buildings, and their combined patterns of use as well as the natural, physical, economic, and social forces that have changed the physical form of cities. A number of metropolitan St. Louis' cities are analyzed to reveal the evolution of city form, from the 19th century to the contemporary situation, and the indeterminate complexity and richness of morphological layering and traces in the urban fabric. The objective of the course is to understand the urban condition as a basis for critical practice in the design studio. Fulfills Urban Issues elective for M.Arch. degree. Undergraduate enrollment is allowed by arrangement with the instructor. Limit 12 students. Credit 3 units.

Arch 525K. Land Arch Urb: landscapearchitectureurbanism

New Disciplinary Dynamics: Blurs and Exchanges. Over the past decade, the various professions engaged in the construction of the built environment have been investigating (both in theory and practice) a specific and deliberate blurring, hybridization, and expansion of the traditional semantic and historical categories of landscape, architecture, and urbanism in an attempt to confront changing situations, environments, and cultures. Across geographical and cultural boundaries, the proliferation of projects (speculative and built) and essays appearing in recent years makes this phenomenon more than a passing trend or the product of individual reflection. Architecture, for example, as a conventional discipline with its own tasks, internal logic, and modus operandi has become so heterogeneous that it can no longer adequately authenticate its products from within the limits of its historical category. The same holds true of the allied fields of landscape and urbanism. Strict disciplinary boundaries are no longer capable of attending to the complexity of contemporary demands produced by mobility, density, de-urbanization, hybrid programs, changing uses, and ecological concerns. The contemporary world forcibly imposes the need for greater flexibility and indeterminacy and for new techniques of practice that are anticipatory, receptive to change, and capable of opening an aperture to the future. This course explores these disciplinary slippages and hybrid contacts between until-now distinct categories through essays and built or speculative works. Fulfills History/Theory elective. Fulfills Urban Issues elective. Credit 3 units.

Arch 527G. Louis Kahn and Alvar Aalto: Critical Studies

This intensive seminar examines the two signal architects of the late 20th century, through focused examinations of their biographies, written statements, and significant buildings: the Salk Institute and the British Art Center, among others, by Kahn and the Saynatsalo Town Hall and the Villa Mairea, among others, by Aalto. The course structure intertwines the progress of each architect's career and production with the other's, and place them both as well in their historical and theoretical contexts. Thematic issues of site, tectonics, purposes, and formal principles are addressed, and the subsequent critical interpretations of the built works will be reviewed. Selected works are the subject of analysis through surveys of archival drawings and constructed models. An overview of the legacy of Kahn and Aalto as represented in contemporary architectural culture concludes the seminar. Field trips to selected buildings of Kahn in the United States are planned; an optional field trip to Finland for the experience of Aalto's works is also envisioned. Fulfills History/Theory requirement. Credit 3 units.

Arch 538A. Technology Transfer

The course explores design, manufacturing, and production strategies employed for the development of technology in industries typically outside of the architectural domain. The performance characteristics of these technologies are considered as they relate to desired impact, technical theory and process. The course investigates the role of computation in design and production through an analysis of industry techniques related to computer modeling, performance analysis, CAD/CAM, rapid prototyping, and robotics. The class explores recent developments in the automotive, aerospace, and shipbuilding industries among others for this research. In addition to analysis, students are asked to develop and critique postulations related to the appropriate engagement of these technologies, design methodologies, and production techniques in the "making" of architecture. Students are asked to participate in discussions regarding their findings, write a report, and make a formal presentation of their work. Credit 3 units.

Arch 544A. Acoustics and Lighting

Acoustics are covered with lectures, discussions, and case studies exploring the nature of sound as a design parameter on a non-mathematical basis along with a general survey of source material. Lighting is analyzed as an architectural design tool. Semantics and methodology for the communication and realization of light design are developed. Credit 3 units.

Arch 546C. Climate and Light

This course focuses on the principles of climate control and active and passive climate control systems for buildings. Lectures and projects are organized to follow the design process, with emphasis on the architectural implications of technological systems. Where possible, students' design studio projects are used as the vehicle for class assignments. Climate and region are approached as a context for design. Principles of thermal comfort, regional design strategies, and bioclimatic design theory are covered. Systems for heating, cooling, and lighting are addressed holistically. Class exercises focus on schematic design strategies. Credit 3 units.

Arch 552B. Site Planning

Course work ranges in scale from the national landscape to the specific site, and includes a broad investigation of the built landscape, from physical land-form and technical issues to case studies of typological and prototypical examples of site design. Credit 3 units.

Arch 562D. Community Development I

Not-for-profit organizations are a major force in the development of urban areas. These groups range from neighborhood-based Community Development Corporations (CDC) to the St. Louis Alliance of Community Organizations (SLACO) and other governmental and private funding agencies and foundations. Housing, small business opportunities, job centers, transitional housing, neighborhood development, homeless shelters, and other types of projects are generally the concern of these corporations. It is the intent of this course to examine the role of not-for-profit corporations and the other players in the development of projects where not-for-profits played a significant role either as organizer, owner, or developer. Representatives of various organizations, governmental agencies, and foundations describing their institutional, legal, and ethical role in the projects make presentations throughout the semester. The case studies of specific projects are presented by teams at the end of the semester and a report is filed as part of an archive on urban and community development. The question that we ask is: How does community development occur using not-for-profit corporations? Open to juniors, seniors, and graduate students; however, Master of Urban Design students are given preference. Fulfills Urban Issues elective requirement. Credit 3 units.

Arch 563C. Design, Modernity and American Cities

Credit 3 units.

Arch 564A. Urban Development Seminar

Project-based research and discussions focus on the legal policy, social and architectural issues affecting the redevelopment of St. Louis and suburban areas such as Clayton and Westminster Place, and prototypical redevelopment of public housing projects of Carr Square, Darst-Webbe, and Vaughn into tenant ownership and market-rate housing neighborhoods. Topics include public policy issues affecting development, the availability and types of housing, transportation linkages, business, zoning issues, social and historical precursors. Through interaction with community leaders, teams of students from each discipline prepare a design proposal for an actual problem in the St. Louis area. This seminar is an interdisciplinary effort taught by faculty members of Washington University College of Architecture and the Saint Louis University School of Law, Social Work and Department of Public Policy Studies. Prerequisite: 400 level and above. Limit 8 students. Fulfills Urban Issues elective for M.Arch. degree. Credit 3 units.

Arch 564F. Infrastructure, Monument, Utopia

The work of the Tennessee Valley Authority (TVA) was one of the most significant and comprehensive design projects in the history of the United States. The agency's purview included landscape, architecture, urban design, and engineering projects, and the scale of its work ranged from regional planning to doorknobs. The eroded, impoverished Tennessee Valley of the early 1930s was remade for a series of interrelated, forward-looking uses and as a series of ideal types. The TVA's work became a kind of Utopian propaganda, choreographed and broadcast to inform the public about what planning and design could achieve. The first part of the course examines the historical and ideological context of the TVA (the Great Depression and the New Deal) and the physical components of its design (dams, power plants, roads, new towns, and recreational landscapes). The second part of the course investigates a series of projects that, like the TVA, proposed monumental visions for regions and landscapes. Credit 3 units.

Arch 564G. The Fragmented City:**Reconsidering Marginalized Urban Zones**

When considering the city, it is necessary to examine the fragmented identities and boundary conditions that lay dormant throughout the urban environment. This seminar discusses issues regarding urban decline, revitalization, and the factors that have led to marginalized areas in the American city, with an emphasis on St. Louis. We ask questions and look at how social factors, public and private policy, and the physical environment have contributed in both positive and negative ways to the condition of these areas. Finally, we attempt to draw conclusions as to how we as architects, planners, and citizens can respond to the issues brought forward. The seminar is balanced between discussions surrounding required theoretical texts and actual study in the field. Students select an area in the St. Louis region that they study throughout the semester, each week through a slightly different lens in conjunction with the reading. Through these discussions and encounters, it is hoped that a clearer understanding of the actual problems that face these areas will emerge. Fulfills Urban Issues elective requirement. Credit 3 units.

Arch 564H. Hybrid Landscapes: Ecology, Infrastructure, and Cultural Expression

Same as *EnSt 464*.

Almost all of the places we know are hybrid landscapes—they've been shaped by a combination of natural process and cultural intervention. These places take many forms, but in some way or another almost all of them express the tension between fluctuating ecological systems and human attempts to create stasis and predictability. This seminar examines the ways in which landscapes have been manipulated at a large scale to permit inhabitation. We look at case studies at a range of scales and over a cross-section of disciplines, including architecture, landscape architecture, urban design, and engineering. We concentrate on examples that deal with infrastructure and urban form. One category for study is the topographical history of cities where urban development transformed physical geography. Another category includes rural landscapes, both agricultural and rustic, that have been re-made for cultural ends. A third category includes landscapes that are defined by infrastructure, like rivers, canals, dams, and roads. We study these hybrid landscapes over time in order to understand their evolution. We consider them not only as built artifacts, but also as the products of social practice. We also talk about their representation and their role in the development of cultural ideas. The course work involves reading, research, and discussion. Each member of the seminar produces a paper or project that relates a particular hybrid landscape to the themes that we discuss together. Fulfills Urban Issues elective requirement. Credit 3 units.

Arch 565B. Architecture and Film

The seminar course examines the interrelationships between architecture and film; how architecture plays a significant role in film and how thinking "cinematically" may influence architecture. Lecture focuses on film works by Tarkovsky, Hitchcock, Kubrick, and Antonioni among others. Film analysis and presentation required. Fulfills History/Theory elective. Credit 3 units.

Arch 567. Primary Architectural Images

Authentic architectural experiences arise from encounters with certain primary architectural situations rather than with visual elements of architectural composition or geometry. Primary architectural images—floor, roof, wall, door, window, hearth, stair, bed—consist of verb-like confrontations that create mental foci that structure our experiences of house and home. The seminar explores the essence of these images as expressed in buildings, paintings, cinema, and literature. Archi-

tectural imagery is investigated through the framework of phenomenology and depth psychology. Prerequisites: Arch 4282, 4283. Credit 3 units.

Arch 567B. Convergences: Studies in Art and Architecture

Same as *F20 Art 467B*.

Credit 3 units.

Arch 568. The House

The goal of the house seminar is to encourage students to formulate an individual way of understanding the perceptual qualities of a selection of 20th-century houses. The work is carried out as a contextual study analyzing each house as an assembly of constituent facts that respond to the particularities of a given site and circumstance. Each student is assigned one house. The course meets once a week to present and discuss the findings in the ongoing studies. The work is concluded by a presentation of the houses in a set of pages forming a booklet on each house. Enrollment is limited to a maximum of eight students. Credit 3 units.

Arch 569. Exhibit Design

This seminar/workshop develops, designs, and produces an exhibit on Modern Architecture in St. Louis (1947-73). Students are responsible for the research of primary materials, editing and documenting, designing and mounting this exhibit in Givens Hall. The seminar also includes lectures and readings related to the history of contemporary exhibit design. Credit 3 units.

Arch 580. Design Thinking: Research and Design Methods

Covers the fundamentals of project planning, proposal writing, and alternative research and design methods. This course is a prerequisite for Design Project (Arch 616). Grade of B- or better required in preceding two studios. Credit 3 units.

Arch 581. Independent Study

Prerequisite: Sponsorship by an instructor and permission of the Dean of the College of Architecture. Credit: To be determined in each case. Credit variable, maximum 5 units.

Arch 582. Independent Study

Prerequisite: sponsorship by an instructor and permission of the Dean of the College of Architecture. Credit to be determined in each case. Credit variable, maximum 9 units.

Arch 611. Architectural Design VII

Prerequisite: satisfactory completion of Arch 512. Credit 6 units.

Arch 612. Architectural Design VIII

Prerequisite: satisfactory completion of Arch 611. Credit 6 units.

Arch 616. Degree Project

Independently initiated design and research projects based on Design Thinking (Arch 580). Proposal to fulfill final requirements for degree award. Prerequisite: Design Thinking (Arch 580). Credit 6 units.

Arch 623B. History of Urban Design

Examines the history of urban design, with an emphasis on the period 1890 to the present. Major topics include the urbanism of the Spanish Laws of the Indies; the development of the row house and the urban square; the park, parkway, and suburban planning of Frederick Law Olmsted and others; the urban planning ideas of Camillo Sitte, Ebenezer Howard, Otto Wagner, Antonio Sant'Elia, Eric Mendelsohn, Tony Garnier, Le Corbusier, the Soviet urbanists and disurbanists, CIAM (Congrès Internationaux d'Architecture Moderne), Team 10, Aldo Rossi, Venturi and Scott-Brown, the Situationists, New Urbanism; and various other approaches to be determined. Credit 3 units.

Arch 623D. Urban Design Since 1935: Toward

a Global Survey

Although cities have been designed for many thousands of years, urban design as a discipline has only emerged in the past 70 years or so. While its emphases have varied, it has often included efforts to synthesize architecture with landscape architecture and urban planning and to find formal vocabularies considered appropriate to specifically urban conditions. Using the course syllabus and in consultation with the professor, students in this seminar choose a city, region, or country and then present and write research reports on the development of urban design there. These individual studies become part of an ongoing process to create a global survey of urban design practice and education. Fulfills History/Theory elective requirement. Fulfills Urban Issues elective requirement. Credit 3 units.

Arch 626C. Urban Movement Nodes: Analysis and Documentation

This course examines and documents several important mixed-use urban movement nodes in the Northeastern U.S. and in Chicago. These include Grand Central Station and Rockefeller Center in New York, the Penn Center in Philadelphia, Harvard Square Station in Cambridge, and the Illinois Center/Grant Park Complex in Chicago. In every case we examine their often-complicated interfaces between rail lines, pedestrian movement, and office, retail, and sometimes residential uses. Interfaces with auto access and parking are also examined. After an introduction to the history of these complexes and their urban surroundings, the faculty and students will then travel to visit the sites. This trip also includes some studio visits to other architecture schools where similar issues are being addressed. On their return, students grouped in teams use digital modeling techniques to make detailed three-dimensional presentations for the remainder of the semester, possibly using video as well. These presentations serve as the basis for discussions about the future of such complexes and their role in urban design. Prerequisite: Arch 326C or the permission of Professor Sung Ho Kim. Credit 3 units.

Arch 630. Constructing for Ando

The course takes students through the design and construction process of building the Pulitzer Foundation for the Arts from an owner's representative/construction manager's perspective. Students learn why and how decisions were made to achieve a truly outstanding building: not only an important piece of contemporary architecture, but also a work of art of exceptional quality. Design and construction of the building successfully met the expectations of both the owner and design architect. Topics to be addressed include: owner requirements, design challenges, site challenges, design and construction team selection, relationship to surrounding buildings, cost issues, contracts, construction administration, perfection/no tolerance construction, construction techniques, quality concerns, and the interrelationship between art and architecture. Students are given some of the actual situations that confronted the design and construction team and are asked to provide solutions to these problems/challenges. The Pulitzer Foundation for the Arts building is used as a laboratory, and many of the teaching sessions are held in the building. This course is intended for second-year M.Arch. 3 and M.Arch. 2 students. Credit 3 units.

Arch 630A. Building for Perfection

This course takes students through the challenges of constructing and designing extremely high quality minimalist buildings. The study focuses on Tadao Ando projects in the USA. The course is intended for M.Arch. 2 and advanced M.Arch. 3 students. Credit 3 units.

Arch 646. Professional Practice I

Develops awareness and understanding of architectural practice including the relation of the profession to society as well as the organization, management, and documentation of the process of providing professional services. Covers the areas of 1) project process and economics, 2) business practice and management, and 3) laws and regulations. Prerequisite: 500-level studio placement or above. Credit 3 units.

Arch 647A. Advanced Professional Practice

Advanced study of professional practice topics focusing particularly on firm management and project management. Firm-related topics include starting a practice, financial management, marketing, staffing, and risk management. Project-related topics include fee negotiation, project structures and participants, scheduling, use of AIA contracts and management documents, and construction document systems. Prerequisite: A46 646 Professional Practice I. Credit 3 units.

Arch 652H. Metropolitan Development: What's in a Plan?

This course explores pluralist, pragmatic, and progressive planning strategies for American urbanism. It provides students with an introduction to the design and planning of American cities in the context of this country's democratic tradition, its multicultural society, and the particular morphology of its urban areas. Contemporary American cities have urbanized in unprecedented and distinctive ways that suggest the creation of a unique urban culture, despite the seeming globalization of urban trends, or the apparent universalization of urban forms. Identifying the role design can play in this culture requires a lucid appraisal of the context in which metropolitan development takes place. Four study modules introduce basic issues in planning law, real estate finance, urban economics, and environmental planning through lectures and research projects, as well the presentation of metropolitan St. Louis development case studies by professional and political leaders. Credit 3 units.

Arch 654D. Metropolitan Landscapes

Same as EnSt 455.

The course examines the landscapes that comprise the contemporary metropolis, from the rural outskirts to the inner core. We examine the city as a product of natural and cultural influences, and we work toward an understanding of the city as an ecological entity. Case studies range in scale from the garden to the region. Required for MUD students. Fulfills Urban Issues elective. Credit 3 units.

Arch 654E. The Philosophy of Place: Architecture and Urbanism

This course investigates architecture using the phenomenological method and approach in which architecture and a city is understood to have purpose and meaning relevant to the concept of dwelling in the contemporary condition. The discussion engages the philosophical concepts of space and place, the relationship of body to place, and how architecture and cities utilize various concepts of space that give presence to place. Readings include Heidegger, Bachelard, Foucault, Deleuze, and Guattari, as well as various architectural theorists. Credit 3 units.

Arch 656. Metropolitan Urbanism

The seminar course investigates the morphology and morphogenesis of the contemporary America metropolitan urban landscape. The investigation attempts to define and understand the changing pattern, form, and use of the metropolitan transect from the central city to the rural fringe. The objective of the course is to understand the indeterminate complexity and richness of morphological layering and traces in the urban landscape as a basis for critical practice. Credit 3 units.

Arch 664. Historic Preservation/Urban Design

This class explores the history and current practice of historic preservation in the United States and relates them to local issues of contextual architecture, sustainable development, cultural tourism, and urban design. Emphasis is placed on the practical knowledge needed to participate professionally in historic preservation: how to evaluate the associative and architectural significance of a property or district; how to provide legal protection and redevelopment incentives for historic resources; how to appropriately restore, rehabilitate, adapt, and add to historic buildings; and how to incorporate historic preservation into the sometimes contentious framework of community planning. The course focus on readings, student discussion, and case studies that draw extensively on real preservation situations in the region including trips to the innovative Cupples Warehouse and Bohemian Hill projects, the endangered Old North St. Louis neighborhood, and a charrette in the Central West End. Credit 3 units.

Arch 681. Independent Study

Prerequisite: Sponsorship by an instructor and permission of the Dean of the College of Architecture. Credit to be determined in each case, maximum 5 units.

Arch 682. Independent Study

Prerequisite: Sponsorship by an instructor and permission of the Dean of the College of Architecture. Credit variable, maximum 9 units.

Arch 711. Elements of Urban Design

The first of a three-semester sequence of design studios for students in the Master of Urban Design program. Credit 6 units.

Arch 713. Metropolitan Design Elements

The second in a three-semester sequence of design studios for students in the Master of Urban Design program. Credit 6 units.

Arch 714. Metropolitan Urban Design

The third in a three-semester sequence of design studios for students in the Master of Urban Design program. This is a summer studio held in an urban location away from St. Louis. Credit 6 units.

College of Art

Jeff Pike, M.F.A.
Dean

Michael Byron, M.F.A.
Associate Dean of Faculty

Georgia Binnington, B.A.
Associate Dean of Students

Cris Baldwin, B.S.
Assistant Dean/Registrar

Katerina Papageorgio, M.B.A.
Assistant Dean/Director of Overseas Programs

Eric Troffkin, M.F.A.
Director of Graduate Studies

A Professional Art College Within a University

The College of Art offers you the opportunity to study art or design while taking both required and elective courses through other schools and divisions of the University. The College of Art, which has its own faculty and facilities, has been a degree-conferring division of Washington University since 1879.

As an undergraduate student at the College of Art, you have a wide variety of options from which to choose to meet your individual needs and to satisfy your interests. The Bachelor of Fine Arts (B.F.A.) curriculum has been designed around the philosophy that the study of art has no natural boundaries; all human experience—intellectual, technological, and social—can at some point become part of the purposes of an artist or designer. College of Art courses provide a structural base upon which you are able to build.

When you major in art at Washington University, you may choose among such areas of concentration as digital imaging and photography, fashion design, painting, printmaking/drawing, sculpture, or visual communications.

Our diverse student body is composed of young people who have records of high achievement in both art and academic subjects. Most of our students are planning for professional careers; some head for more traditional careers; others invent new opportunities and directions. Because the College provides such a comprehensive learning environment, it is an excellent place for you to mature as an artist or designer.

Facilities

The College of Art studios are in Bixby Hall, Earl E. and Myrtle E. Walker Hall, and Lewis Center. Bixby Hall, located on the University's Danforth Campus, was built for the College of Art in 1926 through a generous gift of William K. Bixby. Walker Hall was completed in the summer of 2006 as part of the new Sam Fox School of Design & Visual Arts. Lewis Center, which is located one mile from the Danforth Campus, is connected to campus by shuttle bus service. Lewis Center offers 28,000 square feet of studio space.

Resources at the College of Art include

the Carolyne Roehm Electronic Media Center, which has up-to-date computers and software for graphics and design, as well as video equipment, and the Nancy Spirtas Kranzberg Studio for the Illustrated Book.

Undergraduate Programs

Bachelor of Fine Arts

The Bachelor of Fine Arts curriculum consists of a concentration of studio art courses in two-year components, the introductory Core program and majors. In addition, courses in art history, literature, social science, and natural science or math are required and provide a well-rounded educational experience.

The first year includes a planned sequence of drawing and design courses taken in conjunction with academic requirements and electives. The second year continues with intermediate studio experiences, based not in media but on concepts and methods of visual organization. It is recommended that you also complete an art elective in your intended major. Once this Core curriculum is completed, you begin your major.

During your third and fourth years, you spend the majority of your time in your selected major, while continuing to complete both academic requirements and studio electives. Major areas of study are digital imaging and photography, fashion design, painting, printmaking/drawing, sculpture, and visual communications.

Core Program

The Core program of courses is central, not only as preparation for later study but also as a substantial educational experience in itself. The first-year Core program (12 units) consists of a specified group of required courses: 2-dimensional design, three-dimensional design, and two semesters of drawing. The courses emphasize building awareness, competence, and confidence through the studio experience. Expressive growth, new skills, and analytical development are all by-products of this experience.

The second-year Core program (12 units) builds on the experience of the first. Courses are based on professionally significant concepts, not on media. They are designed to help you organize visual experience in a new way, offering growth through a combination of freedom and discipline.

For this course of study, you are able to select from a group of Core courses, taking two courses each semester. This "menu" approach gives you the opportunity to begin making choices that reflect your developing interests. You select your courses in consultation with a faculty adviser.

The Major

During the third year, you may enter a major area of concentration and begin to apply the general art skills developed in the Core program.

During the third and fourth years, the major accounts for approximately one-half of the credit units earned each semester; the remainder are taken in the art and academic

areas most appropriate to your professional goals and interests.

Students entering the digital imaging and photography, fashion design, and visual communications majors are required to purchase a specified computer and software. The computer and software are purchased through the College of Art to yield the greatest possible savings to the student through educational discounts and bulk purchasing. The computer package for each major varies.

Computers for digital imaging and photography and visual communications majors will be purchased during the summer and will be billed on the fall tuition statement. Computers for fashion design will be purchased in the fall and billed on the spring tuition statement. Charges are assessed according to the course registration on June 15 (fall) and November 25 (spring). If you have not registered for a major by these deadlines, you are responsible for any computer and software price increases, and you run the risk of not having a computer available at the start of classes. In the event that you decide you do not wish to remain in one of these majors, payment for the computer remains your responsibility.

The Split Major

If you have a grade point average of 3.0 ("B") or better, you may pursue two majors within the College of Art, such as one in painting and one in printmaking/drawing. To do so, you must have permission of the associate dean of students (Bixby Hall, Room 1), and you must consult with your major faculty adviser. Although the split major is a rigorous program, it does not require additional credit units for graduation.

Art Electives

Art electives, available in all the major areas, introduce you to the materials, techniques, and aesthetic issues of particular disciplines. First- through fourth-year students are enrolled in the same elective courses, each working at different levels.

If you are enrolled in the Core program, you should sample a number of electives before choosing your major; you should take at least one elective course from the area of your intended major. If you are an advanced student, art electives offer you the opportunity to explore areas outside your major and to gain experiences that complement and expand your expertise.

A minimum of 15 units of art electives, of which 9 must be in areas other than your major, is required for the B.F.A. degree.

Combined (Dual) Degree

Students may pursue a second bachelor's degree from another division within the University. To do this, the student must satisfactorily complete all of the requirements for both degrees.

The Second Major

As an art student, you may earn a second major in the College of Arts & Sciences, the Olin School of Business, or the School of Engineering & Applied Science (computer

science) while completing the requirements for the B.F.A. degree. If you choose to take advantage of this option, you will graduate with a B.F.A. degree with two majors—one in art and one in another school.

You must successfully complete all of the degree requirements for the B.F.A. and all of the requirements for the second major. Unlike a combined degree program, you do not need to complete the distribution requirements necessary for a degree in the College of Arts & Sciences, the Olin School of Business, or the School of Engineering & Applied Science (computer science).

The second major option can be completed within four years if careful planning begins during the first year. If you are interested in this option, you should consult with the associate dean of students in the College of Art.

Art Education

If you wish to teach art at the elementary and secondary levels, you may obtain Missouri state certification by taking additional credit units of required education courses offered by the University's Department of Education in the College of Arts & Sciences. These courses may be taken as academic electives within the B.F.A. program.

In addition to course work in education, prospective art teachers must complete specific courses in general education (communications, humanities, mathematics, natural sciences, and social sciences). For information on general education requirements, you should consult with the associate dean of students (Bixby Hall, Room 1) or the Department of Education (McMillan Hall, Room 215). Missouri state certification normally takes an additional semester of study.

Application to enroll in the teacher education program is made through the Department of Education and should be done no later than the beginning of the sophomore year. Part of the application process involves successfully passing College Base, an achievement test focused on general education content. (This test is periodically given on the Washington University campus.) Acceptable scores on the SAT or the ACT also must be submitted. Interested students may also apply for admission to the Master of Education degree program offered by the education department.

Bachelor of Fine Arts Degree Requirements

To receive the Bachelor of Fine Arts degree, you must meet the requirements of the College of Art and take academic courses with other undergraduates. Work in art can be combined with studies in architecture, business, humanities, natural and social sciences, and the other arts. You may take these courses for educational and intellectual enrichment or in direct correlation with your primary interests.

The specified number of credit units in courses in the areas listed below are required for the B.F.A.*

Art History (15 units): Two one-semester introductory courses (Art-Arch 112E, 211) and three additional courses (or related

courses with permission of the associate dean of students).

Writing (3 units): Writing I (C+ or better) is required in the first year.

Literature (6 units): Courses in English literature, comparative literature, classics, or literature courses in translation in the language departments.

Natural Sciences or Mathematics (6 units): Courses in biology, chemistry, earth and planetary sciences, physics, and mathematics.

Social Sciences or Philosophy (6 units): Courses in anthropology, economics, history, political science, psychology, philosophy, and women and gender studies.

Academic Electives (9 units): Three additional electives chosen from any of the academic areas listed above including art history and foreign language studies.

Bachelor of Fine Arts

<i>Academic Requirements</i>	<i>Units</i>
Writing I	3
Literature	6
Natural sciences or mathematics	6
Social sciences or philosophy	6
Academic electives	9
	<u>30</u>

Art History Requirements

Art-Arch 112E and 211	6
Art history electives	9
	<u>15</u>

Studio Art Requirements

Core program—first year	12
Core program—second year	12
(Critical Frameworks required)	
Major—third year	16
Major—fourth year	20
Art electives	15
	<u>75</u>

Additional Elective Requirements

Art and/or academic electives	8
Total Credit Units Required	<u>128</u>

The Minor in Art Requirements

If you are in an undergraduate degree program at Washington University, you may pursue a minor in art from the College of Art. You must consult with the associate dean of students or the assistant dean/registrar (Bixby Hall, Room 1). The requirements for all art minors are:

Art (15 units)

- Two selected from the following courses:
 - Drawing* (F10 ART 101 and 102)†
 - 2-Dimensional Design* (F10 ART 105 or 106)
 - 3-Dimensional Design* (F10 ART 107 or 108)
- Three selected from the following courses:
 - Painting* (F20 ART 111 or 112)
 - Sculpture* (F20 ART 113A or 114A)
 - Printmaking* (F20 ART 115 or 116)
 - Photography I* (F20 ART 1181)
 - Ceramics* (F20 ART 119 or 120)

2-Dimensional Fashion Design (F20 ART 123D or 124D)

3-Dimensional Fashion Design (F20 ART 123E or 124E)

Visual Communications (F20 ART 135C or 136C)

Digital Imaging and Photography (15 units)

Photography I (F20 ART 1181)

Photography II (F20 ART 2182)

History of Photography (F20 ART 227A or 228A)

Two selected from the following courses:

Digital Imaging (F20 ART 1184)

Kinetic Image (F20 ART 1185)

Photography III (F20 ART 3183)

Non-silver Photography (F20 ART 217D or 218D)

Advanced Photography Seminar (F20 ART 2171-2181)

Photography in Italy (F20 3177)

Fashion Design (15 units)

2-Dimensional Design (F10 ART 105 or 106)

3-Dimensional Design (F10 ART 107 or 108)

2-Dimensional Fashion Design (F20 ART 123D or 124D)

3-Dimensional Fashion Design (F20 ART 123E or 124E)

Fashion: Textile Design (F20 ART 123G or 124G)

Visual Communications (15 units)

Visual Communications (F20 Art 135C or 136C)

Four selected from the following courses:

2-Dimensional Design (F10 Art 105 or 106)

Visual Communications II (F20 Art 135C or 136C)

Sound Design (F20 Art 2388)

History of Visual Communications (F20 Art 339)

Typography and Letterform: The Design of Language (F10 Art 283)

Special Topics in Visual Communications: Visual Communications and Business (F20 Art 297)

Basic Illustration (F20 Art 133 or 134)

Interactivity and Web Design (F20 Art 135F or 136F)

Painting (15 units)

Drawing (F10 ART 101)

Color Systems (F10 ART 285 or 286) or (*Drawing* F10 ART 102)

Painting (F20 ART 111 or 112)

Painting (F20 ART 211 or 212)

Painting II (F20 311B or 411B)

Intensive Intermediate Painting (F20 3115 or 3116)

Printmaking (15 units)

Drawing (F10 ART 101)

Printmaking (F20 ART 115 or 116)

Printmaking (F20 ART 215 or 216)

Special Topics in Printmaking (F20 ART 215D or 216D)

Independent Study with Major Faculty (F10 ART 350 or 450)

* Specific courses that meet these requirements are listed in the College of Arts & Sciences section, pages 38 through 271.

† By taking two semesters of drawing (F10 101 and F10 102), it is possible to complete this requirement without the courses in design.

Sculpture (15 units)

3-Dimensional Design (F10 ART 107 or 108)

Dimension Studies (F10 ART 267 or 268) and/or

Durational Systems (F10 ART 273A or 274A)

Sculpture (F20 ART 113A or 114A)

Special Topics in Sculpture (F20 ART 213E or 214E)

Independent Study with Major Faculty (F10 ART 350 or 450)

Minors may elect to take Special Topics classes or additional first-year Core courses as part of the elective requirement.

Students earning a minor in art may transfer only one non-Washington University course to fulfill a minor requirement with pre-approval from the associate dean of students. Architecture majors may transfer only one (either drawing or design) Washington University architecture course to fulfill an art minor requirement.

Students earning a minor must take all art courses for credit. Only F10 or F20 courses may count for the minor.

Academic Regulations

Grades

In the College of Art, one semester unit of credit is assigned for every two hours of work completed in class and one hour of work completed outside of class per week for one semester. A grade point is a measure of quality assigned to units according to the following system:

Grade	Degree Credit	Grade Points	
		Per Unit	Per Unit
A+	superior	yes	4.0
A	superior	yes	4.0
A-	superior	yes	3.7
B+	good	yes	3.3
B	good	yes	3.0
B-	good	yes	2.7
C+	average	yes	2.3
C	average	yes	2.0
C-	average	yes	1.7
D+	unsatisfactory	yes	1.3
D	unsatisfactory	yes	1.0
D-	unsatisfactory	yes	.7
F	failing	no	.0
I	course work incomplete	no	.0
X	examination not taken	no	.0
N	no grade reported	no	.0
P	pass (P/F option)	yes	.0
F	fail (P/F option)	no	.0
L	successful audit	no	.0
Z	unsuccessful audit	no	.0
W	withdrawal	—	.0
R	repeat	—	—

Grades of I, X, and N will become grades of F if the deficiency is not made up within the next two semesters of residence. For a course repeated, students earn credit and grade points based on the second grade received.

Incomplete Courses

If, following the last day for withdrawal from courses, you experience medical or

personal problems that make satisfactory completion of course work unlikely, you may request a grade of I (incomplete) from one or more instructors and should take the following steps:

1. Discuss the request with the instructor before the final critique or portfolio review.
2. With the instructor's consent, complete an Incomplete Grade Petition signed by both the instructor and the student.
3. Return the signed petition to the associate dean of students for final approval.

Grade Point Average

Your undergraduate grade point average is determined by dividing the number of grade points earned by the number of semester units for which grades of A, B, C, D, or F have been recorded. Grades of P and F received for courses taken on the pass/fail option are not figured into the grade point average. The letter grade D+, D, or D- received by a senior in the major will not be counted toward degree requirements. A maximum of 8 units of grade D+, D, or D- received by a junior in the major may be counted toward degree requirements.

Pass/Fail Grading

You may take one non-art course per semester on a pass/fail basis (exclusive of courses that must be taken pass/fail). Any additional courses taken pass/fail in a given semester will not be counted toward the degree. All art courses (those courses with an F10 or F20 department number) must be taken for credit. Writing I (L13 100) must also be taken for credit.

Sophomore Review

If you have deficiencies in Core courses at the end of the sophomore year, you are required to submit a portfolio of work to a faculty committee that decides eligibility for study in the major, as determined by:

1. The quality of work in relation to standards of advanced training.
2. Your demonstrated ability to be responsible for individual progress.

If you are not approved for advancement to the major, you may be permitted to continue in Core courses and submit work again to the committee at a later time.

Major Declaration and Transfer

You declare an art major simply by registering for one using the University's online registration system (WebSTAC). Once you have selected and registered for a major in the College of Art, you must obtain written permission to change to another major within the College. Students requesting a transfer of major must be in good academic standing. Major Transfer Request forms are available in Bixby Hall, Room 1, and must be filed before the drop deadline of the semester in which they wish to transfer. Credit transfers between majors are at the discretion of the accepting major faculty.

Academic Probation and Suspension

A student whose semester grade point average is below 2.0 (equal to the grade of C) or

has earned fewer than 12 credit hours toward the degree, will be placed on academic probation. If, after the following semester, the semester grade point average is still below 2.0, or if the student has earned fewer than 12 credit hours toward the degree, the student may be ineligible for normal advancement or may be suspended. While the College desires to give all students the opportunity to prove themselves, it is not in the best interest of either the students or the College to permit students to continue indefinitely in educational programs in which they are not producing satisfactory results.

Leave of Absence

You may request a leave of absence from the College for one semester at a time, up to one year. If this is granted, you may re-enroll at the end of that time without going through further admission or readmission procedures. A "Request for Leave of Absence" form, available in Bixby Hall, Room 1, must be completed before a leave of absence will be granted. In the case of a medical leave of absence, a letter of clearance is required from the director of Student Health Services before a student will be permitted to re-enroll.

Transfer Credit

Students wishing to transfer credit for course work completed at another institution should bring a full catalog description of the course(s) to the associate dean of students for pre-approval. Upon receipt of an official transcript indicating a grade of "C" or better, courses will be considered for transfer. Grades for transfer courses will not appear on the student's Washington University record and will not figure into the student's grade point average. College courses taken to earn credit for high school graduation requirements will not be considered for transfer.

Internships

Students may elect to do an internship as part of their B.F.A. degree. An internship is a structured and supervised professional experience related to a major area of study within the College. Credits vary from one to three per internship—no more than six credits may be considered as part of the art elective credits required for the degree. In order to receive credit, students must have on file an approved "Learning Contract" before beginning and an "Internship Evaluation" upon completion of the internship. Forms, guidelines, and requirements are available in Bixby Hall, Room 1.

Study Abroad

Students in the College of Art may take advantage of various overseas study programs available through both the College and the University. Arrangements should be made by the end of the semester prior to departure. The College of Art offers both summer and semester programs in Florence, Italy. Summer courses are open to all students. First-year students may apply to spend the second semester of their sophomore year there.

To participate in other programs during the regular academic year, you must have a grade point average of 3.0 or better and be

granted a leave of absence from the College. All overseas study programs must be approved by the associate dean of students. The College accepts earned grades and credits only from approved programs. You are urged to enroll in a program that offers an equivalent of your studio experience.

If as a third- or fourth-year student, you choose to participate in a program that does not offer an equivalent major experience, a written proposal describing the program and how the necessary credits will be accepted must be approved in advance by the faculty in the major and the associate dean of students. A portfolio review by the faculty in the major to confirm compliance with the proposal is required after you return. Full credit for the major may not be awarded if the terms of the proposal are not met.

The assistant dean/director of overseas programs (Bixby Hall, Room 1) has information on recommended overseas study programs.

Retention of Student Work

The College reserves the right to hold your work(s) for exhibition purposes and holds reproduction rights of any work(s) executed in fulfillment of course requirements.

Academic Honors

Dean's List: In recognition of exceptional scholarship, first-year, sophomore, junior, and senior art students who have completed at least 12 credit hours (excludes courses taken P/F or Audit) with a semester grade point average of 3.5 or higher during a semester will be cited on the Dean's List.

Senior Honors: As an undergraduate art student, you may be named an Eliot Scholar if your academic performance has been outstanding, with a cumulative grade point average of 3.5 or higher through the penultimate semester.

You may be considered for the Bachelor of Fine Arts degree cum laude, magna cum laude, or summa cum laude as determined by the dean.

Academic Scholarships

The College of Art offers one full-tuition and up to five partial-tuition scholarships each year solely on the basis of merit. Applicants for this award may also qualify for scholarship aid based on need and will be considered for this as well. The full-tuition Conway or Proetz Scholarship is awarded to an entering first-year student whose artistic and academic potential is judged outstanding by a faculty selection committee. The scholarship is supported by two endowed funds. The Fred Conway Scholarship was established in memory of a distinguished professor of painting in the College of Art. The Arthur and Esther Proetz Scholarship was established to honor the commitment and dedication to the arts of these two individuals.

Competition is national in scope, with finalists invited each year to visit the College of Art at the College's expense. At this time, one student is chosen to receive the full-tuition scholarship, and the other finalists are awarded partial scholarships. These are renewable for each year of undergraduate

study, assuming continued academic and artistic excellence.

To be eligible, an applicant must be a high school senior who meets the following criteria:

1. Ranks high in the senior class.
2. Has SAT or ACT scores in the upper range.

To enter the competition, the applicant must follow the usual application procedures by completing a Washington University freshman application and sending a slide portfolio of art work. All materials must be sent to the following address:

Office of Undergraduate Admissions
Washington University in St. Louis
Campus Box 1089
One Brookings Drive
St. Louis, Missouri 63130-4899

Scholarships, Prizes, and Awards

The Scholars in Art Program provides named scholarship funds that have been donated to the University by individuals or companies specifically for this purpose. Selection is based on financial need and academic achievement. There is no application process. The total amount of the student's financial assistance package does not change.

Endowed Scholarships

The Thomas R. Blow Scholarship. Sponsored by the Thomas R. Blow Estate.

The Barbara Paton Bridgewater Scholarship. Sponsored by the Bridgewater Family.

The Clara Bromeyer Memorial Scholarship. Sponsored by the Bertha Schuman Estate.

The Richard Brunell Scholarship. Established in tribute to Professor Richard Brunell.

The Fred Conway Art Scholarship. Sponsored by Mr. and Mrs. Lester Crancer.

The de Compiegne-Wallace Foundation Scholarship. Sponsored by the de Compiegne-Wallace Foundation.

The Mildred Suliburk Dennis Memorial Scholarship. Sponsored by bequest from Mildred Dennis.

The Helen Faibish Memorial Scholarship. Sponsored by Dr. and Mrs. George Faibish.

The Natalie and Henry Freund Family Art Scholarship. Sponsored by the Freund Family.

The Laura and William Jens Scholarships. Sponsored by the Ella Jens Boeschstein Estate.

The Kerry S. Kuehner Scholarship.

The E. Desmond Lee Scholarship for Community Collaboration. Sponsored by E. Desmond Lee.

The Louise Roblee McCarthy Scholarship. Sponsored by the Joseph H. and Flora A. Roblee Foundation.

The McMillan Scholarship. Sponsored by the Eliza McMillan Estate.

The Milliken Scholarship. Sponsored by the Emily Milliken Estate.

The Proetz Scholarship. Sponsored by the Esther S. Proetz Estate.

The Ruth Kelso Renfrow Art Club Scholarship. Represented by Mrs. Myron Peterson.

The Julia and Charlotte Secor Endowed Scholarship. Sponsored by the Bessie Secor Estate.

The H.B. and M.B. Simon Scholarship. Sponsored by the Mildred Simon Estate.

The Siroky Scholarship. Sponsored by the Lumir R. Siroky Estate.

The Jacqueline Ferrer Stern Scholarship. Sponsored by Jackie Gutman.

The Yolanda Taylor Scholarship. Sponsored by a bequest from Yolanda Taylor.

The Eleanor Depree and Titus van Haitsma Scholarship. Sponsored by Eleanor Depree and Dr. Titus van Haitsma.

The Jeffrey Frank Wacks Scholarship. Sponsored by Edward, Linda, Melissa, and Greg Wacks.

The Henrietta Wahlert Scholarship. Sponsored by the Henrietta Wahlert Estate.

The Earl E. and Myrtle E. Walker Art Scholarship Fund. Sponsored by Earl E. and Myrtle E. Walker.

The Herb and Diane Weitman Scholarship. Sponsored by Herb and Diane Weitman.

The Edmund H. Wuerpel Memorial Scholarship. Sponsored by the Dr. Edward L. and Mrs. Lois Wuerpel Bowles Estate.

The Eugene and Tita Zeffren Foundation Scholarship. Sponsored by Mr. and Mrs. Eugene Zeffren.

Annual Scholarships

The Allen Scholarship. Sponsored by Marge and Allen Fleener.

The Judith and Adam Aronson Scholarship. Sponsored by Judy and Adam Aronson.

The Dorothy Waldeck Bachar Scholarship. Sponsored by Charlotte Waldeck Moro and Joseph Moro.

The Richard and Charline Baizer Scholarship. Sponsored by Charline Baizer.

The Roberta and David Binder Scholarship. Sponsored by Roberta and David Binder.

The Elizabeth Bland Memorial Scholarship. Sponsored by Charles Bland and the Elizabeth Bland Estate.

The Yvette and John Dubinsky Scholarships. Sponsored by Yvette Drury Dubinsky and John Dubinsky.

The John D. Ezell Scholarship. Sponsored by John D. Ezell.

The Marilyn and Sam Fox Scholarship. Sponsored by Marilyn and Sam Fox.

The Ann Fertig Freedman Scholarship. Sponsored by Ann Fertig Freedman.

The Natalie E. Freund Scholarship. Sponsored by Natalie E. Freund.

The Natalie E. Freund Scholarship. Sponsored by the Freund Family.

The Nancee Glatstein Scholarship for Graduate Students. Sponsored by Nancee Glatstein.

The Alice Goodman Scholarship. Sponsored by Mrs. Stanley Goodman.

The Hamblett C. Grigg Memorial Scholarship. Sponsored by Mrs. Margaret Blanke Grigg.

The Marcia Jean Hart Scholarship. Sponsored by Marcia Jean Hart.

The Jane Reuter Hitzeman Scholarship. Sponsored by Jane and Herbert Hitzeman.

The Gene Hoefel Scholarship. Sponsored by Dexter Fedor in honor of Gene Hoefel.

The Mr. and Mrs. James E. Hullverson Scholarship. Sponsored by Mr. and Mrs. James E. Hullverson.

The Kellwood Scholarship. Sponsored by the Kellwood Company.

The Liberman Scholarship. Sponsored by Lee and Ann Liberman.

The Anne Koelle McCann Scholarship. Sponsored by Anne and Joseph McCann.

The Charles E. Monfort, Jr. Scholarship. Sponsored by Barbara McDonnell in memory of her father.

The Kristi Nimmo and Paul Pulver Scholarship. Sponsored by Kristi Nimmo and Paul Pulver.

Dr. and Mrs. Robert A. Rae W. Nussbaum Scholarship. Sponsored by Carol Kanter in honor of her parents.

The Kristin Anderson Redington Scholarship. Sponsored by Dr Charles B. Anderson in honor of his daughter.

The Florence Roschke Memorial Scholarship. Sponsored by Margie Reisner in honor of her sister.

The Marguerite Roschke Reisner Scholarship. Sponsored by Duke and Margie Reisner.

The Gnau and Schapp Family Scholarship. Sponsored by Betsy and Ronald Schapp.

The Sheldon and Lucy Smith Scholarship. Sponsored by Sheldon and Lucy Silverberg Smith.

The Paula Varsalona Ltd. Scholarship. Sponsored by Paula Varsalona.

The Joseph A. Marino and Paula Varsalona Scholarship. Sponsored by Mr. and Mrs. Joseph A. Marino.

The Nancy Field Wilson Scholarship. Sponsored by Nancy Field Wilson.

Several awards are made each year to art students who are selected by the faculty. These awards include the following:

Prizes

The Eda L. and Clarence C. Cushing Memorial Prize in Painting

The Anne Fuller Dillon Prize in Graphic Communications

The Hazel H. Huntsinger Memorial Prize in Painting

The Jayne Ball Rousseau Memorial Prize in Graphic Communications

The Helen Faibish Prize in Sculpture

The Siroky Prize in Ceramics

The Herb Weitman Prize in Photography

The Caroline Risque Janis Prize in Sculpture

The Peter Marcus Prize in Printmaking

Awards

The Grace M. Bell Art Award

The Thomas R. Blow Award

The Belle Cramer Award in Printmaking

The William Fett Drawing Award

The Mary Cowan Harford Award in Watercolor

The Graduate School of Art Award and Bill Kohn Travel Scholarship

The John T. Milliken Foreign Travel Award

The Kellwood Foundation Award in Fashion Design

The Morris M. Horwitz Award in Photography

The Marsha Hertzman Blasingame Award in Printmaking

The Charles Harmon Memorial Award in Graphic Design

The Edmund H. Wuerpel Award in Printmaking

The Tanasko Milovich Award in Painting

The Julia Mary and Charlotte Elizabeth Secor Award

The Irving L. Sorger Award

Faculty

Endowed Professors

Carmon Colangelo

E. Desmond Lee Professor for Community Collaboration in the Arts

M.F.A., Louisiana State University

Joan Hall

Kenneth E. Hudson Professor of Art

M.F.A., University of Nebraska

Ronald A. Leax

Halsey C. Ives Professor of Art

M.F.A., Cranbrook Academy of Art

W. Patrick Schuchard

E. Desmond Lee Professor for Community Collaboration

M.F.A., University of South Florida–Tampa

Professors

Michael Byron

M.F.A., Nova Scotia College of Art and Design

D. B. Dowd

M.F.A., University of Nebraska

Ron Fondaw

M.F.A., University of Illinois–Urbana

Jeff Pike

M.F.A., Syracuse University

Stan J. Strembecki

M.F.A., California Institute of the Arts

Associate Professors

Ken Botnick

B.B.S., University of Wisconsin

Lisa Schneider Bulawsky

M.F.A., University of Kansas

Jane Delynn

Visiting Associate Professor

M.F.A., Iowa Writers Workshop, University of Iowa

Dawn M. Guernsey

M.F.A., Southern Illinois University–Carbondale

Richard Krueger

M.F.A., University of Notre Dame

Franklin Oros

B.S., Western Michigan University

Jeigh Singleton

M.S., Kansas State University

Sarah B. Spurr

B.F.A., University of Michigan

Robin VerHage-Abrams

M.F.A., University of Michigan

Denise D. Ward-Brown

M.F.A., Howard University

Assistant Professors

James Adams

M.F.A., Pennsylvania Academy of Fine Arts

Heather Corcoran

M.F.A., Yale University School of Art

Katharine Kuharic

B.F.A., Carnegie Mellon University

Arny Nadler

M.F.A., Cranbrook Academy of Art

Cheryl Wassenaar

M.F.A., University of Cincinnati

Senior Lecturers

Patrick C. Renschen

M.F.A., University of Nebraska–Lincoln

Jennifer Colten Schmidt

M.F.A., Massachusetts College of Art

Linda Solovic

B.F.A., Washington University

Lecturers

Laura Beard Aeling

M.F.A., University of Washington

Mary Borgman

M.F.A., Fontbonne University

Lou Ann Card

Certificate Washington University

Traci Moore Clay

B.S., University of Kansas

Jill Downen

M.F.A., Washington University

Scott Gericke

M.F.A., University of Illinois Urbana-Champaign

Andrea Green

M.F.A., Washington University

Jana Harper

M.F.A., Arizona State University

Stacey Harris

B.F.A., Washington University

John Hendrix

M.F.A., School of Visual Art

Tom Huck

M.F.A., Washington University

Ben Kaplan

B.F.A., New York University

Noah Kirby

M.F.A., Washington University

Belinda Lee

M.F.A., Southern Illinois University–Edwardsville

Jon Navy

M.F.A., School of the Art Institute of Chicago

Michele Owens

M.F.A., Washington University

Julia Randall

M.F.A., Rutgers University

Tom Reed

M.F.A., University of Iowa

Russell Rosener

M.F.A., State University of New York–Brockport

John Sarra

M.F.A., Washington University

Robert Silvey

M.A., University of Missouri–St. Louis

Jesse Thomas

M.F.A., Washington University

Suzette Thouvenot

B.S., Southwest Missouri State University

Eric Troffkin

M.F.A., Cranbrook Academy of Art

Enrique von Rohr

B.F.A., Washington University

Regan Wheat

M.F.A., Cranbrook Academy of Art

Mary Jane Woehler

B.S., Southern Illinois University–Carbonale

Professors Emeriti**Edward Boccia****William Fett****Gene R. Hoefel****Peter Marcus****James McGarrell****Hylarie M. McMahon****Arthur Osver****William Quinn****Barry Schactman****Heikki Seppä****Robert C. Smith****Stanley Tasker****Quondam Visiting Artists, 2006–2008****Helene Aylon****Ian Berry****Susan Cahan****Robbie Conal****Brett Cook Dizney****Patrick Dougherty****Nancy Friese****Phyllis Galembo****Jim Hodges****Dana Hoey****David Humphrey****Hedi Kyle****Michael Mabry****Vic Muniz****Angus Powers****Paula Scher****T. L. Solien****Alexi Worth****Undergraduate Courses**

F10: Art Core and major studio courses

F20: Art elective studio courses

Credit units apply to each semester of the course. Material fees may be required.

First-Year Core**F10 Art 101-102. Drawing**

An introductory course teaches the student to recognize and manipulate fundamental elements of composition, line, form, space, and modeling. Emphasis is placed on working accurately from observation, with an introduction to other methodologies. Students work in a variety of media. Demonstrations and illustrated lectures supplement studio sessions and outside projects. Credit 3 units.

F10 Art 105-106. 2-D Design

An introduction to basic design principles and their application on a 2-dimensional surface. Investigation of the functions and properties of the formal elements and their organization through the use of relational schemes. Includes an introduction to color and basic color theory. Problems stress systematic approach to visual communication. Credit 3 units.

F10 Art 107-108. 3-D Design

An introduction to basic design principles and their application to 3-dimensional form and real space and time. The design vocabulary is broadened through exercises that deal with mass, volume, weight, gravity, and movement. Students learn to use a variety of materials, tools, and processes. Credit 3 units.

Second-Year Core**F10 Art 201C-202C. Drawing from Invention**

This course examines drawing as a thinking process. Using a variety of media, students move from departure concept to completed artwork investigating pictorial traditions, technical and conceptual frameworks along the way. This is an intensive workshop. Outside reading required as well as frequent visits to the museum. Credit 3 units.

F10 Art 201E-202E. Characters and Pictures: A Drawing Class

What does a hero look like? In life, of course, heroes are identified by action—not appearance. But the world of pictures is governed by different rules. The class identifies different character types and examine their roles in narration. Using a variety of media, students move from departure concept to completed artwork, investing pictorial traditions and other frameworks—both technical and conceptual—along the way. Importantly, they gain understanding of the pictured character—whether male or female, super hero, knave, mother, or vamp. Credit 3 units.

F10 Art 201F-202F. Picturing Men

A course that emphasizes the pictorial representation of men, as well as encouraging students to explore the historical through the contemporary visual representation of males in the context of their own pictorial exploration. Credit 3 units.

F10 Art 201G-202G. Pictures and Themes: A Drawing Course

Great themes such as Creation, Temptation, The Odyssey, Oedipus, Faust, and Frankenstein are examined and committed to picture. By semester's end, students have completed a group of mixed media drawings that demonstrate control over mark, text, and subtext. Credit 3 units.

F10 Art 203B-204B. Anatomy/Figure Structure

A rigorous drawing course focusing on human anatomy (muscular and skeletal systems), various proportional systems, as well as bio/psycho/so-

cial/political conditions that have influenced figural representations. Credit 3 units.

F10 Art 209-210. Activist Art

This course examines and puts into practice art as activism. The course introduces the history of activist art primarily focusing on the last 15 years but also linking propaganda in art from the Renaissance throughout Modernism and into Post-modernism.

F10 Art 211A-212A. Introduction to Design Processes

Studio exercises in freehand drawing and 2-D design. Drawings emphasize the rendering of simple forms, interior, and exterior space. Graphic design exercises explore various principles of composition, abstraction, and organization. Credit 3 units.

F10 Art 213-214. Outdoor Design Installation

In this class, students go through the experience of planning and executing an outdoor design installation to be located on campus. Groups of three to four students work together to find an appropriate site, conceive of an idea, propose the plan to the University, and construct the piece. The focus is the creative articulation of an existing space. Issues such as working methodologies, idea generation, preparatory site exploration and documentation, model making, and formal presentation of skills are addressed. Credit 3 units.

F10 Art 215-216. Collaborative Projects

This class begins by introducing students to the works by collaborative groups. Students work collaboratively on 2-dimensional images, site-specific installation, and actions or happenings. Students also work collaboratively on research, proposal, and development of a body of work. Credit 3 units.

F10 Art 217-218. Century Landscape

The goal of this class is to concern ourselves with the serious multidisciplinary approach to observe, document, research, and offer solutions to urban blight and neglected environments through appropriate verbal and visual structures. Credit 3 units.

F10 Art 221-222. Culture/Commerce Systems

Marketing and prototyping of the functional/utilitarian object and possibly product design. Projects can be either real (executed for the public) or mock (for classroom purposes only). Open to 2- and 3-dimensional design or digital solutions.

F10 Art 223-224. From Daumier to Crumb

This course focuses on social satire via comics, printmaking, political cartooning, and zines. Students create an individual spread in the anthology "GUTZ," which consists of work produced during the course. The publication is then distributed University-wide by the students. The work of artists such as Crumb, Daumier, Grosz, Coe, and Breugel are explored. Credit 3 units.

F10 Art 225-226. Artist and Self

A course that investigates the self-portrait from both the studio/visual aspect as well as the psychodynamic. Through assignments, readings, and in-class discussions, students examine the motivations and implications of the portrait from internal as well as external descriptions. Credit 3 units.

F10 Art 263A-264A. The Human Figure in Two Dimensions

A course that investigates traditional drawing techniques using the human figure as a point of departure. Strong emphasis on mark-making and the discipline of seeing. Subsidiary consideration of human representation as a major thrust of artistic ambition in history and across cultures. Credit 3 units.

F10 Art 263B-264B. The Human Figure in Three Dimensions

This class is a 3-D investigation in the use of the figure to make art. Classical materials and meth-

ods of observation and understanding the figure and its context are emphasized. Example: clay, plaster, rubber, and various other low-tech materials and processes are used to create sculptural works. Credit 3 units.

F10 Art 265-266. Conceptual Methods in Drawing

Communication of conceptual content through the invention of systems of signification related to language structure. Equates drawing with the primary formation of concepts. Anthropological models, serial structures, symbolic languages, and spatial systems. Credit 3 units.

F10 Art 267A-268A. Pattern, Repetition, and Accumulation

The exploration of excessiveness with materials, images, and/or gestures. Students investigate the relationships between such issues as part/whole, order/chaos, seen/secret, permanence/ephemerality, formalism/meaning. Studio and site-specific work is open to 2-, 3-, and 4-dimensional solutions. Credit 3 units.

F10 273A-274A. Durational Systems

Investigation of duration as a mode of artistic production. Explores time-based objects and events. Open to digital, 3- and 4-dimensional solutions. Credit 3 units.

F10 Art 275-276. Critical Frameworks in the Visual Arts

A lecture course addressing basic issues in modern and postmodern criticism, presented in historical context. Lectures alternating with discussion. Credit 3 units.

Art 2788. Visiting Faculty Workshops

College of Art's Semester Abroad Program in Florence, Italy. The students participate in three month-long workshops with visiting faculty from the College of Art. This course provides the students with the opportunity to examine different artistic disciplines. The course is modified to accommodate the student's experience abroad. Credit 3 units.

F10 Art 279-280. Recognition, Construction, and the Found

In this course students juxtapose, combine, and edit found objects, imagery, and text to create 2- and 3-dimensional artwork. Historical precedents, such as assemblage, collage, and installation are examined. Credit 3 units.

F10 Art 281-282. Body and Context

A course that investigates the figure and its potential in contemporary art practice. The figure is investigated as both present and implied. A variety of media is explored. Emphasis on 3-dimensional work. Credit 3 units.

F10 Art 283-284. Typography and Letterform: The Design of Language

This class examines and utilizes the letterform as visual image, as symbol, and in its conventional role as language. Students investigate the ubiquitous presence of the typographic form in our visual landscape and learn to use it as a compositional tool. They question the boundary between "reading" language and "reading" image by looking at historical examples and through their own studio practice. Variety of media and processes will be explored. Credit 3 units.

F10 Art 285-286. Color Systems

A sustained experience in color that includes the study of optical, theoretical, and cultural issues. Credit 3 units.

F10 Art 287-288. Material Systems

Investigates object making via materials and various processes to explore visual and physical metaphor. Credit 3 units.

Art 291-292. Core New Topic

Studies in special subjects. Topics vary from semester to semester. Consult course listings. May be repeated for credit. Credit 3 units.

Third-Year Majors

F10 Art 311-312. Painting

Advanced study in painting with individualized criticism, lectures, and seminars leading toward the development of personal idioms. Credit 8 units.

F10 Art 313A-314A. Sculpture

Exploration of advanced concepts and techniques. Involvement with larger scale, environmental relationships, and architectural considerations. Processes and materials include construction in a large variety of materials, firing, plaster mold making, direct plaster work, wood and stone carving, foundry, plastics laminations, soft sculpture, welding, soldering, brazing, and metalwork. Credit 8 units.

F10 Art 315A-316A. Printmaking/Drawing

A comprehensive investigation of both traditional and experimental drawing and printmaking techniques. Students are encouraged to explore large-scale mixed media processes with an emphasis on the development of individual images and marking styles. Students have facilities available in papermaking and printmaking with capabilities for computer and photographic techniques. Credit 8 units.

F10 Art 317A-318A. Digital Imaging and Photography

Refining methods, materials, and techniques of photography, as well as developing working knowledge of chemistry, film, and paper. Assignments challenge students' insights into their own portfolios of photographs as well as those of other photographers. Credit 8 units.

F10 Art 323-324. Fashion Design

Creative approach to fashion design, with flat pattern and draping skills used in the development of original sample garments. Construction techniques and industrial methods presented and applied to specific structured design problems. Students work with visiting designer-critics. Garments are reviewed by a professional jury in the spring semester and selected for the annual student fashion show. Credit 8 units.

F10 Art 331-332. Visual Communication: Advertising Design

Offered as an emphasis within the visual communications major, the course employs intensive projects in advertising, typography, and copying to extend the student's capacity for conceptual and visual thinking. Through collaborative projects students are introduced to professional standards and practices. Campaigns employing broadcast and print media are developed. Credit 8 units.

F10 Art 333-334. Visual Communication: Graphic Design

Offered as emphasis within the visual communications major, the course employs intensive projects in graphic design, typography, and production to extend the student's capacity for conceptual and visual thinking. Along with orientation toward professional standards and practices, students are encouraged to identify and develop their special talents and interests. Fundamentals in computer assisted design are covered. Credit 8 units.

F10 Art 335-336. Visual Communication: Illustration

Offered as an emphasis within the visual communications major, the course employs intensive projects in illustration, typography, and illustration media to extend a student's capacity for conceptual and visual language and its application to text/image problems. Credit 8 units.

F10 Art 350. Independent Study

Designed for non-art students fulfilling art minor requirements. Students study with major faculty. Credit variable, maximum 3 units.

Fourth-Year Majors

F10 Art 411-412. Painting

Continuation of F10 Art 311-312. Advanced study in painting with individualized criticism, lectures, and seminars leading toward the development of personal idioms. Credit 10 units.

F10 Art 413A-414A. Sculpture

Continuation of F10 Art 313A-314A. Exploration of advanced concepts and techniques. Involvement with larger scale, environmental relationships, and architectural considerations. Processes and materials include construction in a large variety of materials, firing, plaster mold making, direct plaster work, wood and stone carving, foundry, plastics laminations, soft sculpture, welding, soldering, brazing, and metalwork. Credit 10 units.

F10 Art 415A-416A. Printmaking/Drawing

Continuation of F10 Art 315A-316A. A comprehensive investigation of both traditional and experimental drawing and printmaking techniques. Students are encouraged to explore large-scale mixed media processes with an emphasis on the development of individual images and marking styles. Students have facilities available in papermaking and printmaking with capabilities for computer and photographic techniques. Credit 10 units.

F10 Art 417A-418A. Digital Imaging and Photography

Continuation of F10 Art 317A-318A. Courses deal with the establishment of the student's personal vision and the presentation of that vision. Weekly critiques and in-class discussions are primary format, in conjunction with visiting artists and professionals. The class assists students in preparing their portfolios and provides the necessary support material to enter the post-academic environment. Credit 10 units.

F10 Art 423-424. Fashion Design

Continuation of F10 Art 323-324. Original design concepts are developed in sketch, pattern, and muslin stages, prior to constructing each garment. Senior Design Studio is professionally equipped, affording the student an opportunity to work in a design room setting. Fashion drawing develops techniques and skills necessary for preparing a senior portfolio. Designer-critics work with students on specific design problems in the development of a senior collection. Garments are reviewed by a jury in the spring semester and selected for the annual student fashion show, a professional showcase for student work. Credit 10 units.

F10 Art 431-432. Visual Communication: Advertising Design

Continuation of F10 Art 331-332. Advanced projects in advertising design and the development of a professional portfolio. Options within the major include History of Visual Communications, a senior studio working with actual clients, and internships. Credit 10 units.

F10 Art 433-434. Visual Communication: Graphic Design

Continuation of F10 Art 333-334. Advanced projects in graphic design, a senior thesis project, and the development of a professional portfolio. Options within the major include History of Visual Communications, senior design studio working with actual clients, and internships. Credit 10 units.

F10 Art 435-436. Visual Communications: Illustration

Continuation of F10 Art 335-336. Advanced projects in illustration, and the development of a professional portfolio. Options within the major include History of Visual Communications, a senior design studio working with actual clients, and internships. Credit 10 units.

F10 Art 450. Independent Study

Designed for non-art students fulfilling art minor requirements. Students study with major faculty. Credit variable, maximum 3 units.

Studio Electives**F20 Art 111-112 through 411-412. Painting**

Introduction to painting processes and materials. While there is emphasis on oil painting, students are also introduced to watercolor and acrylic paints and a wide variety of painting surfaces. Subject matter is varied, beginning with still-life material and ending with direct painting from the model. Technical skills and content are dealt with at the individual student's level. Credit 3 units.

F20 Art 1113-1114 through 4113-4114. Special Topics in Painting

Studies in special subjects. Topics vary from semester to semester. Consult course listings. Credit 3 units.

F20 Art 113A-114A through 413A-414A.**Sculpture**

Explores contemporary sculptural concepts and processes in various media, including latex, plaster, plastics, metal, and wood fabrication, with emphasis on development of technical skills at whatever level of advancement is suited to the experience of the student. Credit 3 units.

F20 Art 113E-114E through 413E-414E. Special Topics in Sculpture

Studies in special subjects. Topics vary from semester to semester. Consult course listings. Credit 3 units.

F20 Art 113F-114F through 413F-414F.**Sculpture: Foundry**

The focus of this course is to introduce students to the basic principles of bronze and aluminum casting according to the lost wax method. Students learn mold making, direct organic burnout, ceramic shell investment, metal chasing, and patination in order to create finished sculpture. In addition to metal casting, students use other materials such as plaster, resin, steel, wood, rubber, plastic, and foam to create a mixed media project that explores a specific idea or theme. Additional work outside the regularly scheduled class time is required. Credit 3 units.

F20 Art 113G-114G through 413G-414G.**Sculpture: Wood**

The focus of this course is to introduce students to the basic principles of wood sculpture with an emphasis on furniture making. Credit 3 units.

F20 Art 113H-114H through 413H-414H.**Sculpture: Blacksmithing**

This course is an introduction to blacksmithing materials, tools, and techniques. Students explore the fundamental techniques of hand-forged metal. Metal can be manipulated as a plastic material and offers enormous possibilities for three-dimensional form. In this class we explore these possibilities and expand our sculptural vocabulary. Credit 3 units.

F20 Art 115-116 through 415-416. Printmaking

Survey of printmaking covering basic processes in intaglio, lithography, relief, and monotype. Emphasis on mixed media and experimentation with a foundation in traditional, historical, and philosophical aspects of printmaking. Students are en-

couraged to work at a level suited to their individual technical skills and conceptual interests. Credit 3 units.

F20 Art 115D-116D through 415D-416D. Special Topics in Printmaking

Studies in special subjects. Topics vary from semester to semester. Consult course listings. Credit 3 units.

F20 Art 115E-116E through 415E-416E. Printmaking: Themed and Boxed

Students experiment with image making in the mechanically unified bodies of work in the form of a print portfolio. The history of the art form as well as the techniques used in its development are covered in slide presentations as well as in demonstrations. The student creates a print portfolio based on a particular theme during the semester. Credit 3 units.

F20 Art 1181. Photography I

Designed to acquaint students with the fundamentals of camera handling, darkroom and photographic processes, and using photography as a means of personal, creative self expression. Course is structured around the use of color transparency and the craft of printing with color negative materials. Credit 3 units.

F20 Art 1183. Digital Photography I

This introductory level course explores digital technology for capturing, enhancing, and producing still lens-based images. The course addresses basic digital camera operations, the visual language of camera-generated images, computer workflow, and the connoisseurship of digital image output. The course assumes no prior knowledge or experience with digital imaging technologies or materials. Credit 3 units.

F20 Art 1184. Digital Imaging

This course addresses the use of technology and pixel-based software for generating, manipulating, and compositing still digital images. The course examines the visual language and poetics of additive lens-based images while providing students with knowledge of software tools, input devices, production techniques, color management strategies, and output devices. Credit 3 units.

F20 Art 1185. Kinetic Image

This introductory level course addresses the use of digital technology and software for capturing, editing, and producing moving images. The course examines the visual language and poetics of moving images while providing students with a foundation of knowledge of camera operations, production storyboarding, software tools, and presentation strategies. The course assumes no prior knowledge or experience with kinetic imaging technologies or software. Credit 3 units.

F20 Art 119-120 through 419-420. Ceramics

Survey through lectures and demonstrations of the use and application of ceramic raw materials. Students learn basic forming techniques of slab, coil, and wheel; the mixing and application of glazes; and kiln stacking and firing, at whatever level of advancement is suited to their experience. Credit 3 units.

F20 Art 123D-124D through 423D-424D.**Fashion Design 2D**

Designed to familiarize students with techniques and materials used in drawing flats, floats, croquis, specs, and illustrations for fashion design. Design problems associated with designing groups, collections, and lines of apparel for popular and selected consumption are included. Credit 3 units.

F20 Art 123E-124E through 423E-424E.**Fashion Design 3D**

Designed to familiarize students with the equip-

ment and technology peculiar to a career in fashion design. Emphasis on increased awareness of the capabilities of the materials and equipment. Development of skills peculiar to apparel design, and appreciation of the processes involved in the design and manufacturing of apparel. Credit 3 units.

F20 Art 123F-124F through 423F-424F. Special Topics in Fashion Design

Studies in special subjects. Topics vary from semester to semester. Consult course listings. Credit 3 units.

F20 Art 123G-124G through 423G-424G.**Fashion: Textile Design**

Introductory study of textiles, beginning with study of the basic fibers used in textile production, through weaving, knitting, dyeing, printing, and finishing. Class format includes lectures, field trips, garment study, and a variety of creative projects that replicate current textile production techniques such as weaving, silkscreen, dyeing, and printing. Credit 3 units.

F20 Art 135C-136C through 435C-436C. Visual Communications

An introduction to the field of visual communication: graphic design, advertising design, and illustration. Through studio exercises and lectures students are exposed to the broad range of conceptual, aesthetic, and strategic issues inherent to the field. Additionally, the similarities, differences, and points of overlap within the three areas of visual communications are discussed. Strongly recommended for students considering the visual communications major. An excellent introduction to the subject as a tool for business and marketing. Credit 3 units.

F20 Art 135F-136F through 135F-436F.**Interactivity and Web Design**

This course combines investigations of image construction and editing, typography, and basic issues in interactivity to explore the world of interface design and beginning Web development. Credit 3 units.

F20 Art 135H-136H through 435H-436H.**Visual Communications II: Advanced Visual Communications**

This course continues visual communications in a more professional context. Students advance their understanding of concept development and visual execution. They also examine contemporary professional work in the field and are introduced to the business of the profession, including work with clients. Course work integrates fundamental design skills with business presentations and team-based projects. The final course assignment come from an external firm. Students work in groups and make a professional presentation to the client. Credit 3 units.

F20 Art 1481-1482 through 4481-4482. The**Illustrated Book: Design and Production**

An investigation of text, image, design, and production within the broad realm of illustrated books. A series of exploratory exercises in the beginning of the semester yield to a single sustained project to be proposed and developed by the student. Project emphases may include visual narrative, textual interpretation, creative writing, typography, structure and sequencing, and material investigation. Production methods may include relief and letterpress, engraving and intaglio, off-set lithography, and digital, "virtual" media. Certain projects may require a second semester of study to complete. Credit 3 units.

F20 Art 150 through 450. Independent Study

Credit variable, maximum 3 units.

F20 Art 1501 through 4501. Internship

Credit variable, maximum 3 units.

F20 Art 171 through 471. Introduction to Letterpress Printing

This class serves as an introduction to printing with the Vandercook handpress. Through a series of assignments, students learn a systematic approach to planning, arranging, and printing type on a page. The students receive a basic introduction to typography, history of letterforms, and history of the book. The mechanics of relief printing with the cylinder proof of press, ink composition, and resolution of the typographic image are also explored. As an exploration of the publishing process, students produce a chapbook of a short literary work. The class primarily focuses on typographic composition, but one assignment employs a combination of word and image. Credit 3 units.

F20 Art 1713-1714 through 4713-4714. Introduction to Book Binding

This class serves as an introduction to the book as artifact of material culture. A variety of traditional and nontraditional book structures are explored. Students learn from historical approaches to constructing the codex form including the single signature pamphlet, the multisignature case binding, the coptic, and the medieval long stitch. Students learn Japanese binding and its many variations. Several contemporary variations are introduced, including the tunnel, the flag book, the accordion, and the carousel. Students explore the visual book using found imagery and photocopy transfers and produce a variety of decorated papers to be used in their bindings. Credit 3 units.

F20 Art 2115-2116 through 4115-4116. Intensive Intermediate Painting

In this course we explore the genres of painting from the inside-out. We focus on process and technical skill as well as the political and social underpinnings of several painting genres. As the course progresses, you will be much improved at oil painting, both in its traditional 20th-century use as well as having some technical and conceptual experience with its contemporary manifestation. Our main focus is on perceptual studies, although we also work with notions of abstraction in painting. There are weekly homework assignments, as well as a few reading assignments. This is a very structured course, designed to develop your strengths and abilities as a painter and to further your conceptual understanding of the medium. Credit 3 units.

F20 Art 211B-212B through 411B-412B. Painting II

Intermediate painting focuses on the processes and concepts of oil painting. It is a structured course with an emphasis on perceptual studies, as well as an overview of historical and contemporary painting issues. Students are expected to possess good drawing skills and a beginner's familiarity with oil painting techniques. Critical readings and homework assignments are an important part of the course. Credit 3 units.

F20 Art 217C. Available Light Photography

Students gain the confidence and skills to shoot photographs any time, anywhere, and in any weather. Topics covered include night photography, astrophotography, painting with light, inclement weather, and techniques for pushing film two to four F-stops. Both black-and-white and color transparency film are used. Credit 3 units.

F20 Art 217D-218D through 417D-418D. Non-Silver Photography

An exploration into the use of non-silver and alternative photographic processes. The use of such processes as blue and brown printing and gum printing explored, as well as photomechanical processes such as photocopying and color photocopying. Credit 3 units.

F20 Art 217I-218I. Advanced Photography Seminar

Designed for non-art students fulfilling requirements in the Digital Imaging and Photography minor. Topics covered include studio lighting and large format photography. Credit 3 units.

F20 Art 2182. Photography II

Introduction to the fundamentals of black-and-white photography. Emphasis on control of film, paper, and black-and-white photographic process in the classical fine arts tradition. Course adds to the experience of Photography I. Topics may include portrait, landscape, street photography, the figure, and contemporary issues in photography. Credit 3 units.

F20 Art 227A-228A through 427A-428A. History of Photography

Survey of the history of photography and a look at the medium from the camera obscura to contemporary developments. Social and technological developments examined in terms of their influence on the medium. Credit 3 units.

F20 Art 2381-2384. Special Topics in Visual Communications

Studies in special subjects. Topics vary from semester to semester. Consult course listings. Credit 3 units.

F20 Art 2385-2386. The Art of Advertising

This elective introduces students to the field by defining the role of advertising in American culture and economy. It begins by exploring the evolving and devolving aspects of American advertising and the forces that both compel and repel consumer audiences. The class explains the processes and criteria that, when properly utilized, elevate advertising and validate it as an art form. The course consists of lectures and visiting instructors, brief essay quizzes, and a series of exercises designed to acquaint each student with administrative and creative processes and various disciplines within the advertising field. Major emphasis is placed upon the creative disciplines. Credit 3 units.

F20 Art 2623-2624. Art/Culture/Culture/Art

College of Art's Semester Abroad Program in Florence, Italy. A course that examines Italian culture, history, architecture, aesthetic and artistic heritage, as well as contemporary art in Italy. We use primarily, but not exclusively, Florence, Italy, as the context of the class. The course consists of many field trips, guest lectures, workshops, and readings. The students are expected to keep a journal as well as write an essay at the conclusion of the course. Credit 3 units.

F20 Art 2643-2644. Italian Level II

College of Art's Semester Abroad Program in Florence, Italy. This course is a continuation of the conversational Italian course required for Study Abroad students. Taught entirely in Italian, this class concentrates on conversational Italian. There is an emphasis on class participation accompanied by readings and writing. The student develops facility speaking the language on an everyday basis. Credit 5 units.

F20 Art 2661-2662. Semester Abroad Program Seminar

This course prepares students participating in the College of Art's Semester Abroad Program in Florence, Italy. The seminar meets eight times over the course of the semester. Attendance is required. Credit 1 unit.

F20 Art 301-302 through 401-402. Drawing

An advanced drawing course for third- and fourth-year students. Individualized instruction allows students to explore various media and stylistic approaches in both figurative and nonfigurative modes. Credit 3 units.

F20 Art 3017. Drawing Upon Florence

College of Art's Summer Abroad Program in Florence, Italy. This drawing course uses Florence as a source to study the human figure and architecture. An emphasis is placed on drawing from direct observation of sculpted and painted figures, architectural sites, and details. The use of the figure in relationship to architecture during the Early and High Renaissance provides a springboard for student discovery and response. Beginning and advanced drawing students benefit from individual instruction. The drawing curriculum culminates with students' synthesis of drawings and sketches into invented compositions inspired by the context of Florence. Sites studied include The Cathedral of Santa Maria Del Fiore, San Marco, Palazzo Vecchio, the Uffizi Gallery, and the Synagogue. Side trips possible. Credit 3 units.

F20 Art 3117. Painting In and Around Florence

College of Art's Summer Abroad Program in Florence, Italy. Students spend an intensive month painting in and around Florence. This course provides daily opportunities for investigation of the city with a range of experience oil painting, from one-day "sketches" to more finished work. Students work from direct observation, painting on a French easel and spend the first day buying any necessary materials. Students record their daily visual experiences of the city in oil sketches at Piazzas Signoria, Annuciata, Santo Spirito, San Marco, and Santa Croce. The class investigates some of the city's famous sites including the Duomo, the Battistero, and sets up along the Arno to paint the Ponte Vecchio. For a more panoramic approach, work will be done in the relative calm of the Boboli Gardens and Belvedere Fortress and San Miniato al Monte and Piazzale Michelangelo. Students will also visit teagarden di Semplici and the gardens at Villa Medicea di Castello. Trips to nearby towns of Fiesole and San Gimignano will offer a change of pace and an opportunity to paint the Tuscan landscape. Credit 3 units.

F20 Art 3119. Painting and Drawing in Italy

College of Art's Summer Abroad Program in Florence, Italy. Experience working on-location in Florence and the surrounding region. Day trips to places such as Lucca, Settignano, Siena, Pisa, and San Gimignano will allow students to develop a series of paintings and drawings based on subjects unique to Italy while discovering their own individual approach. Students explore light-filled, natural landscapes/topographies as well as dense, urban environments overflowing with Renaissance art and architecture. Emphasis is on transportable media such as watercolor. Credit 3 units.

F20 Art 3177. Photography in Italy

College of Art's Summer Abroad Program in Florence, Italy. Explore urban and rural Italian landscape through the photographic medium. Day trips in and around Florence and Tuscany provide ample opportunity for discovery. Students are encouraged to invest time outside the studio and use the darkroom for film processing and proofing. Emphasis is on the quality of images based on proofs and work prints created in a digital darkroom rather than a "portfolio" of fine prints. Credit 3 units.

F20 Art 3183. Photography III

This class is designed for the student who is seeking to explore advanced issues in photography using a broad range of photographic practices and media. In addition to further mastering of technique and craft, students, through readings and class discussion, place their work within a context of contemporary issues in photographic image making, theory, and criticism. Credit 3 units.

F20 Art 339 through 439. History of Visual Communications

Historical development of graphic design based on a survey of significant artists and designers, and the ideas, styles, movements, forces, and individuals who influenced their work. This course is a component of the Visual Communications Major Program. Credit 3 units.

F20 Art 341E through 441E. Computer Graphics IV: Digital Video

This course covers digital video compositing: DVD authoring and a variety of support materials. The students learn how to create and edit digital video, the elements of storytelling and planning, storyboarding, shooting, editing, applying effects and transition, motion tracking, blue screen compositing, experimentation, and special effects. Through the use of Final Cut Pro Commotion Pro, After Effect DVD Studio Pro, SoundEdit, and supporting 2D products, students complete a 5-15 minute digital video for broadcast on a PBS or Public Access cable station. Credit 3 units.

F20 Art 341F through 441F. Computer Graphics V

Introduction to 3D modeling and animation using MAYA, the industry standard that has been used to create film features and games such as: *The Lord of the Rings*; *Ice Age*; *The Perfect Storm*; *Final Fantasy*; *Spiderman*; *Gran Turismo 3*; *Madden NFL*, and hundreds more. Students explore MAYA's customizable user interface design, storyboard, build and animate their own NURBS and Polygon models of environments, buildings, and characters. Students refine and bring life to their world with texturing, lighting, animation, dynamics, and rendering. Credit 3 units.

F20 Art 3701. Illustrated Entertainment: Pictorial Graphic Culture from Early Printing to Television

This course addresses the production, distribution, aesthetics, and cultural significance of illustrated entertainment in Europe and especially the United States. The course serves as a typological survey; that is, it addresses important practitioners in significant categories of a very broad field. Subject coverage includes early printing, caricature and the art of the gazette, the development of comics, 20th-century American magazine illustration, early animation, the animated TV series, and, if time permits, online animation. Topics of consideration include: the interplay of art, entertainment, and communication; the role of the individual creator versus the corporate concern; the impact of the editor and art director; the self-image of the creator; the social context of the work; and the role of technological change. Credit 3 units.

F20 Art 378C through 478C. Characters and Pictures: A Drawing Class

What does a hero look like? In life, of course, heroes are identified by action—not appearance. But the world of pictures is governed by different rules. This class identifies different character types and examine their roles in narration. Using a variety of media, students move from departure concept to completed artwork, investigating pictorial traditions and other frameworks—both technical and conceptual—along the way. Students improve their ability to conjure. They develop an approach to technique, subject-matter, and the demands of the picture-plane. Importantly, they gain understanding of the pictured character—whether male or female, super hero, knave, mother, or vamp. Credit 3 units.

F20 Art 3823-3824. The Italian Renaissance in the City of Florence

College of Art's Semester Abroad Program in Florence, Italy. This course encompasses the Renaissance from Giotto through the High Renaissance. Students are able to examine firsthand the works they are studying. Included are field trips to Rome and Venice. Credit 3 units.

F20 Art 387-388 through 487-488. Life After Art School Seminar

This is a seminar for advanced students, which focuses on the challenges of, and opportunities for, establishing a career as an artist. Course content includes reflective thinking, career expectations, job prospects, résumé and artist statements, portfolio development, exhibition opportunities, business practices, studio operations, health hazards, legal issues and resources, grants, fellowships, exhibition venues, artists' residencies, and continuing educational opportunities. This course is designed to provide strategies as one makes the transition from student to emerging artist. Credit 1 unit.

F20 Art 4505. Visual Communications Research Studio Professional Internship

Students work with VCRS faculty to execute professional projects which advance the research initiatives of the studio. Credit variable, maximum 3 units.

F20 Art 455A. Urban Books: Imag(in)ing St. Louis

Since the beginning of the 20th century, art, architecture, and urbanism together have investigated the production of images that shape the symbolic dimension of our experience of large cities. This seminar critically embraces this tradition and brings together different methodologies for the visual analysis and representation of contemporary urban phenomena, using St. Louis as a focal point. The goal is to design and produce individual books as a result of research, visual documentation, readings, and discussions in a seminar and workshop structure. Each student selects and develops a theme related to the urbanization of St. Louis that is organized into books that present how this metropolitan area has been conceived through images. The course is divided into three parts combining readings, research, and design activities, each of which culminates in the presentation of an individual project: a total of two study books and a final book. The outcome of the course is a collection of student-produced books that are presented in an exhibition titled "Imag(in)ing St. Louis" to take place consecutively at Olin Library and the Art and Architecture Library. Credit 3 units.

***School of Engineering
& Applied Science***

School of Engineering & Applied Science

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Vice Dean

Michael D. Moll
Vice Dean

Tom Browdy
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Mission Statement

The mission of the School of Engineering & Applied Science at Washington University is to serve society as a center for learning in engineering, science, and technology. It is our duty to disseminate and create knowledge through teaching, research, publications, and the transfer of important ideas and research into the development of new products and technologies. We strive to provide an environment that nurtures critical thinking and the education of innovators and leaders for the future.

Degree Programs and Curricula

The School of Engineering & Applied Science (SEAS) offers four-year programs of instruction leading to several professional Bachelor of Science degrees. If you are not preparing for a professional engineering career but are interested in an academic program broadly based on the engineering sciences, the School offers the Bachelor of Science (B.S.) degree with several options.

Undergraduate students may pursue multiple majors and/or degrees, both within the School and with other undergraduate and graduate divisions of Washington University.

Professional Degrees

Bachelor of Science degrees are available in the fields of aerospace engineering, biomedical engineering, chemical engineering, civil engineering, computer engineering, computer science, electrical engineering, mechanical engineering, and systems science and engineering. In cooperation with the Department of Physics in the College of Arts & Sciences, the School also offers a B.S. in physics.

Other Bachelor of Science Degrees

These degree options provide more flexibility for students who do not intend to become licensed engineers and want to select their course work according to their personal educational objectives. For example, some students use this flexibility to gain technical background and training available from selected engineering and applied science courses while pursuing or preparing for professional training in medicine, business, or law. However, although the flexibility exists to do so, it is not necessary to combine this degree program with another major or degree. Students also can use this added flexibility to achieve a well-rounded undergraduate education by selecting courses from across the University while pursuing a major in the School of Engineering or to deepen their understanding in their chosen major. Licenses to practice do not exist in computer

science. Therefore, the Department of Computer Science and Engineering has designed the Bachelor of Science with a major in computer science so that students selecting this more flexible option will have the solid foundation they need to practice in that field.

Combined Major and/or Degree Opportunities

Multiple Majors in Engineering

If you are enrolled in the School of Engineering & Applied Science and you wish to pursue more than one major from the School, you must satisfactorily complete all of the requirements for each major, after which you will be awarded two degrees, a bachelor's degree for each major. See degree requirements on page 320.

Multiple Majors: Combining Engineering with Others

The five undergraduate divisions at Washington University (Architecture, Art, Arts & Sciences, Business, and Engineering) allow students to pursue majors and degrees in more than one division. The following options are available:

Second majors. A student pursuing a bachelor's degree in engineering may also pursue second majors offered by all undergraduate divisions. Upon completion, the student's transcript would show an engineering degree and all earned second majors.

Second degrees. A student in any undergraduate division of the University may be allowed by another division to pursue a second bachelor's degree. For this, the student must satisfactorily complete all of the degree requirements for both degrees. These requirements typically include a "residency" requirement. For engineering majors, this residency requirement is stated on page 320. The College of Arts & Sciences requires any student earning an A.B. degree and a bachelor's degree from another division to earn a minimum of 150 units. Other divisions do not have this requirement.

Minors

Many departments and schools in the University offer minors. An engineering student who applies for a minor and who completes all of the requirements will have the award of the minor noted on the official transcript. A student must be approved for admission to a minor program by the department offering the minor.

Special Combined Programs

Process Control Systems

The Department of Chemical Engineering and the Department of Electrical and Systems Engineering jointly sponsor a double-degree program in process control systems, for which you must complete at least 138 units.

The emphasis in this course of study is on the science and technology of process automation with a solid traditional foundation in the two major disciplines. Graduates of the program can contribute, through automation, to improved product quality, reduced

manufacturing costs, greater capital productivity, and improved safety and environmental quality. See page 385.

B.S.-D.Sc. in Engineering Program

A combined Bachelor of Science/Doctor of Science (B.S.-D.Sc.) program is available with some departments in the School. The program is designed to enable highly motivated students of exceptional talent to embark on an accelerated course of studies and research leading to a Doctor of Science. The degree requirements for the program are those associated with the B.S. and the D.Sc. degree programs. However, graduate courses at the 500 level or above may be counted toward both degrees, subject to department restrictions.

B.S.-M.S. in Engineering Program

This program provides undergraduate engineering students with the opportunity to plan a coordinated five-year program of studies in the School leading to both the bachelor's and master's degrees. The program requires at least 150 units and normally takes five years to complete. However, if you are interested in carrying heavier loads in some semesters or using one or two summers for academic work, you may complete the program in less than five years. Up to six units completed at the School for the master's degree may be used to count toward the engineering undergraduate degree, however, at least 150 units must still be completed.

The program is open to students who earn at least a B average during their sophomore and junior years. If you wish to enter the program, you should apply in the department office during the second semester of the junior year. Approval by the department chair and the dean is required.

Students accepted into the B.S.-M.S. program are permitted to register as undergraduate students for the entire period of study.

For students receiving undergraduate financial support, the School will extend the financial aid eligibility for a maximum of two additional semesters. Students who obtain the B.S. degree before they complete the requirements for the M.S. degree will not be classified as B.S.-M.S. students, and will not be eligible for undergraduate financial aid.

A student pursuing a master's degree, whether registered in the B.S.-M.S. program or as a regular graduate student, may, with the approval of the graduate degree-granting department, overlap up to six units for both a SEAS undergraduate degree and a SEAS master's degree, provided the student graduates with both degrees within a three-year period and completes at least 150 units.

It may be advantageous for some B.S.-M.S. students to have graduate standing during the fifth year of study so that they may receive graduate student awards. Graduate students are not subject to the restrictions imposed by undergraduate financial aid policies and are eligible to receive graduate fellowships and other awards that are funded through departmental budgets. Their tuition charges are at the Sever Graduate School graduate rate.

Combined Bachelor's/Master's Program

The combined Bachelor's/Master's program is designed to enable students in other Washington University schools (other than engineering) to pursue a coordinated five-year study leading to a bachelor's degree outside engineering and a master's degree in the School of Engineering & Applied Science. The admission process and the graduation requirements for this program are identical to those of the B.S.-M.S. in Engineering program.

B.S.-M. Architecture Program

Each year a limited number of first-year students are admitted to this challenging program. The seven-year curriculum, coordinated by the architecture and engineering schools, leads to the Bachelor of Science in Civil Engineering and the Master of Architecture degrees, providing professional training in both fields. Graduates may apply for registration as professional engineers and as registered architects. Applicants are judged on both academic achievement and a personal interview.

In general, the first three years of the program are devoted primarily to studies required for the civil engineering degree, but also include introductory architectural work in design and history. Civil engineering course work then continues through the remaining years of the program until all degree requirements are completed. You must apply for graduate study in the Graduate School of Architecture & Urban Design for the final three years of the program.

B.S.-M.B.A. Program

The School of Engineering & Applied Science and the Olin School of Business offer a five-year program leading to the professional Bachelor of Science engineering degree and the Master of Business Administration degree. The purpose of the program is to provide you with the opportunity to develop an educational background particularly in demand by industry.

You should apply to this joint program by February 1 of your junior year. You must complete the application for admission to the Olin School of Business, available through the business school. You should have a cumulative grade point average of B+ or better, and you must take the Graduate Management Admission Test (GMAT) administered by the Educational Testing Service. Registration materials for the test may be obtained through the business school. Applicants are judged on undergraduate performance, GMAT scores, summer and/or Co-op work experience (see page 319), recommendations, and personal interviews.

The B.S.-M.B.A. student's fourth-year curriculum comprises largely business courses. The fifth-year curriculum is divided almost evenly between business and engineering courses. Because merging of the two curricula results in very tight scheduling, it is possible that course overloads may be necessary to complete both programs in 10 semesters. You are strongly urged to meet with

your advisers to plan the remaining years of the program.

Dual-Degree Program

The School cooperates with a number of colleges and universities in the Dual-Degree Program. Qualified students earn both a non-engineering baccalaureate from the first school and a Washington University bachelor's degree in engineering by attending the affiliated institution for three or four years, then completing the program with two years of concentrated engineering study at Washington University. At present, approximately 20 percent of dual-degree students arrive having already earned a bachelor's degree from the affiliated institution. A listing of the affiliated institutions is available from the Dual-Degree Program Office, 800/487-0744. *Note:* Washington University can serve as the first school.

If you are enrolled at an affiliated institution, you may apply for admission to dual-degree study under this program, provided you are recommended by an official representative of your college or university and will receive or have received the non-engineering baccalaureate. The usual standard for admission is a cumulative grade point average of B or better, both overall and in science and mathematics courses. Exceptions to this standard are considered on a case-by-case basis.

To be able to complete a bachelor of science in engineering in a two-year period, you should have completed the following requirements prior to enrolling in the School:

Total Course Work: At least 60 semester hours of transferable college credit. Courses with grades below C- do not transfer.

Mathematics: Calculus through differential equations.

Physics: One-year calculus-based sequence.

Biology (required for Biomedical Engineering only): A pre-approved three-semester sequence in modern biology.

Chemistry: One-year sequence, with laboratory. (For chemical engineering, a one-year sequence in organic chemistry is also required.)

Computer Science: One course or proficiency. (The requirement may be deferred for chemical engineering.)

English Composition: Evidence of proficiency as demonstrated by previous course work, acceptable examination scores, or college certification.

Humanities and Social Sciences: The School's requirement (see page 321) should be satisfied before arrival at Washington University.

Information about the program and application materials may be obtained from the liaison officers of affiliated colleges and universities. Names of these officers are available from the office of the dean of the affiliated institution or from the Dual-Degree Program Office at Washington University.

Students enrolled in the Dual-Degree Program at affiliated colleges or universities are encouraged to visit the Washington University campus and participate in the activities of the School of Engineering & Applied

Science. Washington University can provide advising services and publications.

Students receiving financial support at an affiliated institution are encouraged to apply to Washington University for continued support. Applications are evaluated according to need and academic performance. While most support provided to students in the Washington University portion of the Dual-Degree Program is based on need, a limited number of outstanding students receive merit awards made without regard to family financial status.

A joint B.S. in Engineering Management degree is offered and jointly awarded by the School and the Olin School of Business. The purpose of this degree is to develop leaders and innovators in science, engineering, and business. In addition to being available to students attending our Dual-Degree-affiliated schools, current Washington University students can obtain this as a second degree. It is only awarded as a second degree. Students pursuing this degree must satisfy the degree requirements stipulated for this specific degree by both the School of Engineering & Applied Science and the Olin School of Business.

Intensive Courses for Dual-Degree Candidates

During late December, students attending affiliated colleges and universities may explore their interest in and aptitude for engineering by enrolling in special introductory engineering courses offered on the Washington University campus. The courses use a concentrated format. Each course is taught by a Washington University faculty member and carries 3 units of credit.

The Dual-Degree Program and Multiple Degrees

As a student entering the School, you may plan a multiple degree program leading to B.S.-M.S. technical degrees or B.S.-M.B.A. degrees. The B.S.-M.S. and B.S.-M.B.A. were described previously. Participation in one of these options extends the time required to complete the Dual-Degree Program by an additional year.

Co-operative Education

The Engineering Co-op Program offers students a unique opportunity to gain in-depth engineering experience prior to graduation. Co-op students learn about a field of engineering by working alongside practicing engineers on extensive projects, which are typically held by entry-level engineers. This type of experience gives students a chance to preview a career path and employment options, gain career clarification, improve communication and team project skills, and enhance marketability with future employers. The Co-op experience is typically completed over the course of a semester and a summer term.

The Engineering Co-op Program is coordinated through The Career Center. For more information on Co-ops, please visit The Career Center's Web site at www.careers.wustl.edu, call (314) 935-5930, or stop by The Career Center in 204 Lopata Hall.

Premedical Education

The School of Engineering & Applied Science makes available, as options within its undergraduate degree programs, curricula that prepare you for entry into medical or dental school while you pursue the undergraduate degree.

These curricula were formulated in recognition of the increasing importance in medicine of the methods and subject matter of the basic engineering sciences. The student who successfully completes one of the curricula will be well prepared for the study of medicine and will have, in addition, a solid background in engineering. Moreover, the student who decides not to go on to medical school will have an exceptionally wide selection of options, including not only those commonly open to the graduate in engineering, but also those of graduate study in biomedical engineering. In accordance with the recommendations of the School's Premedical Committee, all curricula include, in addition to the normal degree requirements, the following courses:

Biology: Biol 2960, 2970, 3050, or Biol. 3059

Chemistry 111A, 112A, 151, 152.

Organic Chemistry: Chem 251, 252, 257.

Many medical schools have other assorted prerequisites, which you can find in the *Medical Schools Admissions Book*. You may purchase this by going to the Association of American Medical Colleges (AAMC) Web site at www.aamc.org on the "publications" page, where you can order online.

If you are interested in attending medical or dental school, you must consult and register with the Premedical Committee before the end of your sophomore year. There is extensive detailed information concerning the Medical College Admission Test, the choice of advanced biology or chemistry courses, and the choice of medical school that should be discussed prior to the beginning of the junior year. Students requesting letters of recommendation from the Premedical Committee must do so in writing by the end of the fall semester of the senior year. The Premedical Committee reserves the right not to write letters for students deemed not qualified.

Part-Time Study for the B.S. Degree

Part-time study leading to the Bachelor of Science degrees offered by the School of Engineering & Applied Science is available if you are able to take daytime courses. The number of engineering courses offered in the late afternoon or early evening is limited. You are eligible to apply for admission as a part-time degree candidate in the School of Engineering & Applied Science when you have completed the following course work:

1. English composition (see requirements on page 320-321).
2. Mathematics through differential equations.
3. Two semesters of calculus-based physics.
4. One or two semester(s) of general chemistry, which meets the prerequisite for organic chemistry, and one semester of general chemistry laboratory. (*Note:* Applicants for chemical engineering also

must have completed two semesters of organic chemistry and one semester of organic chemistry laboratory.)

5. Eighteen units (semester hours) of humanities and social sciences courses (see requirements on page 321).

If you are interested in part-time study in the Bachelor of Science program, you should contact Undergraduate Engineering Admissions, 204 Lopata Hall, 314/935-6130.

Undergraduate engineering students, who are normally full-time students, will be considered to have full-time student status if they are enrolled in 6 or more units during their final semester of study at Washington University. This special full-time status will be granted for only one semester and only during the last semester of their senior year. For students who enter as freshmen, this will normally be the eighth semester of study at Washington University. For students who enter as Dual-Degree (3-2) students, this will normally be the fourth semester of study at Washington University. Students will be expected to complete all undergraduate degree requirements during this final semester of study. *Note:* This policy does not apply to international students, because they must follow enrollment status guidelines established by the INS.

Engineering Summer School

The School of Engineering & Applied Science offers a wide variety of engineering courses each summer. Class times are varied to accommodate both traditional daytime students and those with full- or part-time employment. The Engineering Summer School calendar comprises one full eight-week evening session as well as several accelerated sessions of shorter duration.

If you are interested in enrolling in an engineering summer course, you can obtain further information, advice, and registration materials in 303 Lopata Hall, 314/935-5484.

University College and Professional Degree Programs Courses

If you are an engineering student, you may enroll in courses in Washington University's University College and/or the School's Professional Degree Programs as part of the School's regular registration. For students in engineering, tuition charges for these courses are the same as the charges shown in the programs' bulletins.

Engineering treats these courses as if they were taken at another institution. Thus, although a student's official record will show each course with its title, units, and grade, the units and grade are not automatically counted. Each course is evaluated for its applicability toward a bachelor's degree. If the course is transferable, a separate entry is inserted into the student's record, with the transfer units and the day-school equivalent course. Students must earn a minimum grade of C- for the units to transfer. Grades do not transfer.

Degree Requirements

Professional Degrees

To earn any of the professional degrees ("B.S. in . . ."), you must satisfy all of the

following general distribution requirements:

1. Complete the Common Studies program (outlined below).
2. Satisfy the specific degree requirements of one of the professional degree programs, as outlined in other sections of this *Bulletin*.
3. Satisfy the requirements listed under "All Undergraduate Degrees" (below).

The Bachelor of Science

To earn the Bachelor of Science degree (applied science or "major in . . ."), you must satisfy all of the following general distribution requirements:

1. Complete at least 120 applicable units.
2. Complete at least 48 units of the 120 in mathematics, natural sciences, and engineering.
3. Satisfy the English composition and the humanities and social sciences requirements of the School of Engineering & Applied Science.
4. Complete at least 42 of the total 120 units at the 300 level or higher.
5. Complete the specific requirements of the major.
6. Satisfy the requirements outlined under "All Undergraduate Degrees."

All Undergraduate Degrees

To earn any undergraduate degree in the School, you must accomplish all the following:

1. Earn at least a C (2.0) cumulative grade point average in all applicable courses taken at Washington University.
2. Earn at least the minimum total number of units specified for the particular degree. All degrees require students to complete at least 120 applicable units.
3. Receive no grades below C- in more than one-fourth of the total number of units in the total course of study, nor in more than one-fourth of the units of the subjects in the particular area in which the degree is sought.
4. Satisfy the School's residency requirement by completing a minimum of 30 units of 300-level or higher courses from the School, while matriculated at Washington University in a degree program. Students in the B.S. in Physics program may count 200-level or higher physics courses toward this requirement for the

B.S. in Physics degree, and students in the Biomedical Engineering program may count 200-level or higher biology courses toward this requirement for one of the Biomedical Engineering degrees. An engineering course transferring from an exchange program sanctioned by the School of Engineering & Applied Science (SEAS) may be counted as a SEAS equivalent course for the purpose of satisfying this requirement.

For students pursuing multiple engineering B.S. degrees, for each B.S. degree from the School, these 30 resident units must include at least 15 units of courses that:

- A. Are not included in any Common Studies requirement, and
 - B. Are specifically listed as "required" or "elective" for the specific degree program, and
 - C. Are not used to satisfy this residency requirement for any other B.S. degree from the School.
5. Complete the English composition requirement (see below).

English Composition Requirement

Every student must demonstrate proficiency in reading and writing the English language. Students who earn a 5 on the Advanced Placement English Examination of the College Board are considered proficient. Students who achieve a score of 700 or greater on the SAT II writing examination, coded WR, are likewise considered proficient. A score of 7 on the International Baccalaureate examination similarly demonstrates proficiency. Proficiency is most commonly demonstrated by satisfactory performance on the Freshman English Composition proficiency test administered by the School of Engineering & Applied Science.

Students who do not demonstrate satisfactory proficiency on the test are required to enroll the following semester in the course or sequence of courses specified by the test's administrator. The School's English composition requirement is then satisfied only by a grade of C+ or better in the University's English Composition 100. English composition courses taken at other institutions to satisfy the School's requirement must be pre-approved by the School's English composition coordinator. If the course is

Common Studies Program

All students who wish to earn a professional degree (e.g., B.S. in Chemical Engineering) must complete the Common Studies program. Courses required by the Common Studies program:

	<i>Units</i>
English composition (by examination or at least a C+ in E Comp 100)	0
Calculus (Math 131, 132, 217, 233)	14
Physics (Physics 117A or 197, and Physics 118A or 198)	8
Chemistry (Chem 111A-112A, 151) ¹	8
Technical Writing (EP 310)	3
Humanities/social sciences electives	18
	51

¹Some programs allow Chem 111A-151 in place of Chem 111A-112A, 151.

so approved, the student must pass with a grade of B or better. English Composition 100 does not count toward the Humanities and Social Sciences requirement of the School of Engineering & Applied Science. Waivers of the English composition requirement via the SAT II, IB, or other proficiency exam do not carry degree credit.

The English composition requirement must be completed as soon as possible. Undergraduate students who have not yet satisfied this requirement must enroll in English Composition 100 (or an approved alternative course) at the first possible opportunity, commonly their first spring semester. Enrollment in English composition courses for subsequent semesters may be required until the proficiency requirement is satisfied.

Before enrolling in English Composition 100, some students may be required to complete English Composition 1001 or 200; these courses will not be counted toward the student's degree requirements.

Humanities and Social Sciences Requirement

To earn any bachelor's degree from the School, you must complete the School's humanities and social sciences requirement:

1. *Minimum units:* at least 18 units of humanities and social sciences courses must be completed with passing grades. Humanities and social science courses, other than transfer courses, may be taken for pass/fail credit.
2. *Breadth:* at least 6 units of the 18 must be in the humanities and at least 6 units must be in the social sciences.
3. *Upper-level:* at least 3 units of the 18 units completed must be from one or more courses numbered 300 or higher.

The School categorizes Washington University courses as being "humanities" or "social sciences" using the College of Arts & Sciences course classification system. Courses that are labeled "TH" (Textual and Historical Studies) and "LA" (Languages and the Arts) satisfy the School's humanities requirement. Courses that are labeled "SS" (Social Sciences) satisfy the School's social sciences requirement.

Washington University courses labeled "NS" (Natural Sciences and Mathematics), and courses not classified as SS, TH, or LA, do not count toward the School's humanities and social sciences requirement.

College of Art courses, coded as "F10" and "F20" courses, will count toward the School's humanities requirement. College of Architecture courses and School of Business courses that are approved by the Engineering Registrar's Office will count toward the School's humanities or social sciences requirement.

Other Washington University courses (e.g., University College), and courses taken elsewhere, are treated as transfer courses. Transfer courses must be approved by the Engineering Registrar's Office as acceptable transfer credit and as applicable humanities and social sciences courses. All transfer courses must be taken for credit (not pass/fail), and students must earn a C- or better in transfer courses for the credit

to transfer to the School. Grades do not transfer.

Applicable Undergraduate Engineering Degree Requirements

Undergraduate engineering students are required to satisfy those engineering degree requirements that are published in the *Undergraduate Programs* catalog when they first enroll at the University as a degree-seeking undergraduate student. Dual-Degree (3-2) students are required to satisfy the degree requirements that were in effect three years prior to their initial enrollment at Washington University.

Undergraduate engineering students must complete all undergraduate degree requirements and graduate within 10 consecutive years of enrolling as degree-seeking undergraduate students at the University. Guidelines for part-time undergraduate Professional Degree Program students are stated below.

A student who does not graduate within 10 consecutive years will be required to satisfy the degree requirements that are in the most recently published *Undergraduate Programs* catalog and to retake courses identified by the chair of the department in which the student is seeking the degree.

- When a student wishes to return to complete course work and earn a degree after the 10-year time period has passed, the "most recent" *Undergraduate Programs* catalog is defined as the catalog in effect when the student re-enrolls in the School of Engineering & Applied Science as an undergraduate student seeking a degree.

- When a student has left the University and wishes to complete course work at another university to transfer back and graduate from the School, and more than 10 years have elapsed since the student was first enrolled as an undergraduate engineering degree-seeking student, the "most recent" *Undergraduate Programs* catalog is defined as the catalog in effect when the student files an intent to graduate for an engineering undergraduate degree. The course work the student intends to complete and transfer back to the School must be approved by the School before the student enrolls in the course work.

Part-time Professional Degree Program (PDP) degree-seeking students (e.g., Information Management majors) must complete all undergraduate degree requirements and officially graduate within 15 consecutive years of enrolling as degree-seeking undergraduate students at the University, and follow the guidelines listed above, substituting 15 years in place of 10 years to complete degree requirements and graduate.

Academic Regulations

Units, Grades, and Grade Points

A credit unit is the equivalent of one recitation or lecture hour a week for one semester, or one laboratory of two and one-half hours a week for one semester.

A student's work is rated in terms of the

following system of grades and grade points:

Grade	Degree Credit	Grade Points	
		Degree	Per Unit
A	superior	yes	4.00
B	very good	yes	3.00
C	satisfactory	yes	2.00
D	unsatisfactory, but passable	yes	1.00
F	failure	no	0
L	successful audit	no	—
Z	unsuccessful audit	no	—
I	incomplete	no	—
X	no final examination	no	—
N	no grade	no	—
W	withdraw	no	—
P#	pass	yes	—
F#	fail	no	—
R	repeat	no	—

The addition of plus and minus marks to the grades of A, B, C, D, and F does not affect the value of the grade points earned by each letter grade.

The grade I (incomplete) indicates that the work of a student has been generally acceptable but that extenuating circumstances led to certain requirements not having been met. The grade of X is recorded when a student is absent from a midyear or final examination because of illness or other unavoidable reason, provided the work has been otherwise satisfactory.

Grades of X and I must be removed no later than the close of the next full semester a student is in residence. On failure to make up an X or I, the student cannot receive credit for the course, and the grade will be changed to F unless the student has been explicitly excused by the associate dean and registrar.

Withdrawal without prejudice from a course, the grade W, is allowed up to near the end of the semester (see the current *Course Listings* for the specific deadline). Some deadlines might be overridden if sufficient verifiable reasons (such as serious health issues) can be provided. If such conditions exist, make an appointment to see the Engineering associate dean and register as soon as possible.

If a student repeats a course, only the second grade is included in the calculation of the grade point average. Both enrollments and grades are shown on the student's official transcript. The symbol "R" next to the first enrollment's grade indicates that the course was later retaken. Credit toward the degree is allowed for the latest enrollment only.

Definition of Class Levels

For classification purposes, your undergraduate class level is defined according to the year in which you intend to graduate. You enter this information during the registration process.

Academic Probation and Dismissal

A student whose work is of unsatisfactory quality is placed on academic probation. If a student on probation doesn't improve his or her academic record after a reasonable time, probation is followed by dismissal. The reg-

ulations governing probation and dismissal are as follows:

1. At the close of each semester, each student's semester grade point average is computed as the total grade points earned during the semester divided by the total credit units attempted. At the same time, the cumulative grade point average is computed as the quotient of the cumulative total of grade points over the cumulative total of credit units attempted. The computations are made on the basis of the grade point scale indicated in the section on grades. Courses taken on a pass/fail basis are not included in these calculations.
2. At the close of each semester, the associate dean and registrar will review each student's semester and cumulative grade point averages. If either is below 2.0, the probation rules stated under "Grade Standards" apply (see below), and the student is notified of any academic probation or dismissal action.
3. At the end of a semester, any student who in the judgment of the associate dean and registrar is not making adequate academic progress is required to meet with the student's academic adviser before enrollment is allowed for the following semester.
4. A student who is dismissed may, if he or she desires to continue, present a written statement setting forth reasons why the student believes the situation should be reconsidered. This statement should be addressed to the Undergraduate Academic Standards Committee and forwarded via the associate dean and registrar.

Grade Standards

To graduate, a student must meet all of these criteria:

1. At least a C (2.0) cumulative average.
2. At least three-fourths of the total number of units in the total course of study must carry grades of C or above.
3. At least three-fourths of the units of courses in the major with grades of C or above.

Probation and Dismissal Rules

1. Probation follows any semester during which either the semester or cumulative grade point average is less than 2.0, or a student has three I (incomplete) grades at the end of a semester, or a student was enrolled in credit courses and earns no degree credit at the end of a semester.
2. If a student has been on academic probation twice previously, dismissal may follow the next time the student is eligible for probation.
3. Dismissal may result if a student becomes eligible for probation in two sequential semesters.
4. Dismissal may result if any course is failed twice.

Pass/Fail Option

All undergraduate engineering students are eligible to register each semester for up to 6 units on the pass/fail option, up to a maximum of 18 units attempted. Only elective courses may be taken on this option, includ-

ing courses in other divisions of the University: humanities, social sciences, and some technical electives specifically allowed by individual engineering programs, as well as some engineering courses, both undergraduate and graduate which are not specifically required for your major program. Some programs do not allow courses, required or elective, in the program to be taken with the pass/fail option. Graduate courses taken on the pass/fail basis cannot be transferred later for credit toward a graduate degree. A given course may be selected on the pass/fail option only once.

Changes from the regular grade basis to pass/fail or vice versa may not be made after the last dates specified in the current *Course Listings*. The normal regulations for withdrawal or change to auditor status also apply to pass/fail courses.

A final grade of P# (pass) will replace the normal letter grade and will earn degree credit. A final grade of F# (fail) will be entered on the official record as F# and will not earn degree credit. Neither P# nor F# will affect the grade point average.

Auditing

You may register for a specific course as an auditor. This status entitles you to all the privileges of a regularly enrolled member of the class. Audit courses do not count toward any degree. Class attendance is required to earn the grade L; unsatisfactory attendance will result in a grade of Z. The fee for auditing a course is \$50 per unit for undergraduates. Certain computer science courses do not allow students with auditor status.

Military Training

Army and Air Force ROTC programs are available at Washington University.

A student in the School of Engineering & Applied Science who takes an ROTC course will have the course name, number, credit units, and grade entered on the official transcript. If the course is numbered 100-299, the course's units and grade will not apply toward the student's degree requirements; if the course is numbered 300-499 and the grade is D- or better, the course's units will apply toward the student's degree requirements (as a free elective) but the grade will not affect the student's cumulative or semester grade point average.

Course descriptions for Air Force and Army and ROTC are on pages 326-327.

Physical Education

Students in the School of Engineering & Applied Science are not required to enroll in physical education courses. These courses may be taken for recreation but not for academic credit.

Student Services

Engineering Technical Writing Center

The Engineering Technical Writing Center, located in Lopata 212, offers all engineering students free help with their engineering communication needs. The faculty who staff the center work with students to define communication audiences and purposes, develop and organize ideas, create effective graphics

and page design, and sharpen self-editing skills. Help is offered for résumés and employment correspondence, proposals, formal reports, lab reports, graduate program application statements, and both traditional and computer-based presentations. The center also houses videotape facilities for analyzing presentation rehearsals and a floppy disk-based digital camera for producing still images.

Students are seen primarily by appointment, but walk-ins are accommodated when possible. For an appointment, students can call 314/935-5484.

The Career Center

The Career Center helps engineering students prepare for a lifetime of career management by offering innovative approaches to help prepare them for a successful Co-op, internship, and job search. The Career Center offers a variety of services and resources for engineering undergraduate and graduate students.

Whether you are looking for a summer internship, a Co-op, or a full-time job, we are here to help. The Career Center offers a breadth of resources, including Career Options, an online job, Co-op and internship database, the Engineering Mentoring Program, Job and Internship Search Teams, special events, skill-building workshops, career fairs and on-campus interviews and résumé referrals for job opportunities.

The Career Center offers one-on-one career guidance to students at any stage of their career planning process. Students are encouraged to meet with a Career Advisor early in their academic career and at least once each year to establish a relationship. To schedule an advising appointment, please call (314) 935-5930.

The Career Center has two locations: 204 Lopata Hall and 157 Umrath Hall. The Lopata Hall office is conveniently located in the School of Engineering & Applied Science. You can contact us via phone at (314) 935-5930, e-mail at careers@wustl.edu, or Web at www.careers.wustl.edu

Awards and Scholarships

Dean's List

The Dean's List is composed of those first-year, sophomore, junior, and senior engineering students who, for the preceding semester, have achieved a 3.6 or higher grade point average based on a minimum of 12 units of courses taken for grades (not pass/fail). Their names appear on the framed Dean's List in Sever Hall, and an appropriate entry is added to their official transcripts.

Final Honors

If a student has a grade point average of 3.6 or above in his/her graduating class, he/she will be honored with a baccalaureate degree carrying one of the following three honors designations: cum laude, magna cum laude, or summa cum laude. Cum laude is determined by the highest of three grade point averages based on applicable units consisting of the last 45 units, the last 60 units, and all units taken at Washington University. These

grade point averages are normally calculated in March, which is when the Undergraduate Board meets each year to determine which students are to receive honors.

The School's Undergraduate Board has the responsibility for determining which students will receive the designations magna cum laude and summa cum laude. The criterion for making the decision is academic achievement, and your cumulative grade point average is the primary indicator of academic achievement. However, the Board may interview knowledgeable faculty members to determine whether there are additional academic achievements not reflected in your grade point average, and if so, they take these achievements into consideration in making the awards. An example of such an additional academic achievement would be the publication of a research paper. The remaining students who are on the list will receive their degrees cum laude. All honors determinations are normally made by the end of March.

Washington University Engineers' Scholarship Program

The Engineers' Scholarship Program enables a sponsor—an individual, a group of individuals, or a company—to provide a named scholarship. The selection of students is made by the dean and is based on academic achievement and potential for professional attainment. There is no application process. The awards are need-based. The total amount of the financial aid package does not change, but the source of the scholarship funds is shifted to funds that have been specifically contributed to the University for that purpose.

Scholarships for the 2004–05 and 2005–06 Academic Years

Endowed Scholarships

**William Henry Abbott Memorial
Scholarship**

Dr. William J. Abbott, Jr., Scholarship.

Sponsored by William H. Abbott.

Bernard & Pearl M. Agruss Scholarship

**Francis F. Ahmann Memorial
Scholarships**

Rose & Earl Alberson Memorial

Scholarship. Sponsored by Jo A. Oertli.

Adolph H. Altvater Scholarship

Vladimir Anastasoff Scholarship

**Merle Henry Banta Scholarship Fund
in Honor of Vivian Mae Brown Banta.**

Sponsored by Merle & June Banta.

Allen Barco Memorial Scholarship

W. A. Bemis Scholarship Fund

Sylva Bendy & W. R. Bendy Scholarship

Raymond F. Bentele Scholarship

Mary Jane Bodine Scholarship

Norvell C. Brasch Memorial

Scholarship. Sponsored by Jerome F. & Rosalie Brasch.

Stephen F. & Camilla T. Brauer

Scholarship

Conway B. Briscoe Sr., Scholarship

Daniel Broida Memorial Scholarships.

Sponsored by Roma Broida Witcoff.

Robert L. & Melba L. Brown Scholarship

**John & Katie M. Bruner Memorial
Scholarship**

Charles A. & Marlene S. Buescher

Endowed Scholarship

Dean Byrnes Scholarship

Chandeysson Electric Company

Scholarship. Sponsored by Paul & Ruth Chandeysson.

Dr. Larry T. Chiang Scholarship

Bernice Serenco Chod Memorial

Scholarship. Sponsored by Harvey

Serenco.

Class of 1983 Scholarship

Class of 1984 Scholarship

Class of 1985 Scholarship

Class of 1986 Scholarship

Ralph Coatsworth Scholarship

G. Murray & Wilda Coffey Scholarship

King T. & Adele M. Coffey Memorial

Scholarship. Sponsored by Mrs. Wilda Coffey.

Ralph L. Cook Scholarship

Deisenroth, Theobald, May Scholarship.

Sponsored by Malcolm Deisenroth, Jr.

Carl & Jeanne Deutsch Scholarship

Dr. & Mrs. Myron Dmytryszyn Scholarship

Frank E. Dolson Memorial Fund

Scholarship.

Gaston F. Dubois Scholarship. Sponsored

by L. Frederic Dubois.

Ruth & Gilbert Early Scholarship

Harrison Eiteljorg Scholarship. Sponsored

by Rubin & Gloria Feldman.

Arthur R. Elsperman Scholarship.

Sponsored by Robert P. Elsperman.

ENVIRSAN Scholarship

Walter R. Evans Memorial Scholarship.

Sponsored by Arline Evans.

Raymond W. Fahien Scholarships

Gloria Feldman Family Scholarship in

Loving Memory of Rubin Feldman

Gloria & Rubin Feldman Scholarship

Bernard Fischlowitz Memorial Scholarship.

Sponsored by Ruth Fischlowitz Marget.

Rose & Joseph Foster Scholarships.

Sponsored by Norman & Madeline Foster.

Helen-Marie & Milton E. Freund Jr.

Scholarship

Mr. & Mrs. Nicolas Georgitsis Scholarship

Ralph L. Gray Memorial Scholarship

Robert Gregory Scholarships. Sponsored by

Dr. & Mrs. Santanu Das.

Jean & Sidney Grossman Fellowship

Harry Hammerman Scholarship

Eugene P. Hawkins Memorial Scholarships

Heizer-Konnyu Memorial Scholarship.

Sponsored by Joseph & Helen Heizer.

August & Ruth Homeyer Scholarships

Stanley F. Jackes Endowed Scholarship.

Sponsored by Mrs. John C. Naylor.

Laura & William Jens Memorial

Scholarships

Joseph Yandell Johnson Sr. Scholarship

Jordan Family Scholarship. Sponsored by

Richard F. Jordan.

Elvira Jubel Scholarship

Henry A. Jubel Memorial Scholarships.

Sponsored by Elvira Jubel & Donald Jubel.

Kappa Sigma Alumni Scholarship

Gustel R. Kiewitt Memorial Scholarship.

Sponsored by A. Clay & Edith Mollman.

William L. & Ruth P. Knaus Scholarship

Henry Kourik Memorial Scholarship.

Sponsored by John W. Kourik.

John W. & Rosa May Kourik Scholarship

John & Ida Landwehr Memorial

Scholarship. Sponsored by Irvin

Landwehr.

Kenneth V. Larsen, M.D. & Fred H.

Pillsbury Scholarship

Lischer Fund Scholarship. Sponsored by

Vance C. Lischer, Jr.

Mr. & Mrs. Eugene W. Lohman

Scholarships

Lucy & Stanley Lopata Scholarships

Steve R. Lowy Computer Science

Scholarships

Steve R. Lowy Life Science Scholarship

Cecil Lue-Hing & Bertha Winingham

Lue-Hing Scholarship

L. & E. Matthey and T. & H. Tankersley

Scholarship. Sponsored by Mr. & Mrs.

Louis W. Matthey.

Forrest & Patricia McGrath Fellowship in

Environmental Engineering

McKee Family Scholarship. Sponsored by

Paul & Midge McKee.

James M. McKelvey Scholarship

Luisa D. Mendez Scholarship. Sponsored

by Robert Mullenger & Rhonda Radcliff.

Professor Gustav R. Mesmer Memorial

Scholarship

Harold & Helen Meyers Endowed

Scholarship

Charles E. Molnar Memorial Scholarship.

Sponsored by Donna Molnar.

Carlen & Grace Moyer Scholarship.

Sponsored by Joseph & Jackie Moyer.

Marcia & Larry Mrazek Scholarship in

Honor of Marcia Mrazek

James H. Mullenger Memorial

Scholarship. Sponsored by Robert L.

Mullenger.

Armarie B. Murphy Scholarship in

Memory of Clifford W. Murphy

Armarie B. Murphy Scholarship

Clifford W. & Armarie B. Murphy

Scholarship in Memory of Their Parents

Clifford W. & Armarie B. Murphy

Scholarship

Edwin H. Murty & Margaret K. Murty

Scholarships

Mrs. Carl H. Neiman Scholarship

Eugene H. Nicolson Scholarship

Stanley C. Pace Scholarship

Wayne M. Parks Memorial Scholarship.

Sponsored by Robert & Susan Parks.

William C. Parrish Family Scholarship

Bill & Bonnie Patient Benefactor

Scholarships

Herbert M. Patton Scholarship. Sponsored

by Mrs. Marjorie M. Patton.

Jack M. Pedowicz Memorial Scholarship.

Sponsored by Lee R. Pedowicz.

Lester A. & Marcella K. Piper Scholarship

Erwin O. & Dorothy S. Potthoff

Scholarship

Procter & Gamble Chemical Engineering

Scholarship. Sponsored by James G.

Rosborough III.

Stanley & Carol Proctor Scholarship

Joseph Puleo Memorial Scholarship.

Sponsored by Peter & Evelyn Puleo.

- Peter A. Puleo Scholarship**
Walter & Joan Rinard Scholarship.
 Sponsored by Ronald & Cecilia Rinard.
- Dr. Yoram Rudy Scholarship.** Sponsored by Jerome & Rosalie Brasch.
- John K. Russell Scholarship**
Barrett L. & Norma C. Scallet Endowed Scholarship
Schmidt Foundation Scholarship Fund
Lucy & Elmer A. Schramm Memorial Scholarship
Henry G. Schwartz, Jr. Scholarship
EMCOR Endowed Scholarship.
 Sponsored by Rudy & Henrietta Freedman.
- Harvey Serenco Scholarship in Honor of the U.S. Army Corps of Engineers**
Joe & Betty Serenco Memorial Scholarships. Sponsored by Harvey Serenco.
- Arthur J. Shurig Memorial Scholarship.**
 Sponsored by Therese Shurig.
- Walter L. & Egon A. Siegerist Scholarship**
Spartan Light Metal Products Inc. Scholarship. Sponsored by Don Jubel.
- Jerome J. Spector Memorial Scholarship.**
 Sponsored by Robert & Myra Potashnick.
- Ernst Henry Spellmeyer Memorial Scholarship**
Harold Arthur Spellmeyer Memorial Scholarship
Adele Margaret Spitzfaden Memorial Scholarship
Otis, Dorothy, & Bryce Sproul Family Scholarship
John & Julianne Stein Scholarship
Karl F. Steinhauer Scholarship
Steinhauer/Bryan Study Abroad Scholarship
Steinhauer/Torrance Scholarship
Elvera Stuckenberg Scholarships
William R. Stuckenberg Memorial Scholarship
Norman J. Stupp Memorial Scholarships
John J. Summersby Memorial Scholarship.
 Sponsored by Mr. & Mrs. Richard S. Emmet.
- Sverdrup Scholarship.** Sponsored by H. G. Schwartz, Jr.
- Anne Tao Scholarship.** Sponsored by William K. Y. Tao.
- Sho-Hsien Tao Memorial Scholarship.**
 Sponsored by William & Anne Tao.
- Tao Family Scholarships**
William K. Y. Tao Scholarship
Jean J. & Edna G. Thyson Scholarship
Raymond R. Tucker Memorial Scholarship.
 Sponsored by the Family & Friends of Raymond R. Tucker.
- Lewis E. & Vera D. Walkup Scholarships**
Donald F. Wann Memorial Graduate Scholarship
Fred Weber, Jr. Scholarship. Sponsored by Thomas P. Dunne.
- Fred Weber, Sr. Memorial Scholarship.**
 Sponsored by John & Gloria Weber.
- W. Victor Weir Memorial Scholarship.**
 Sponsored by Walter & Joan Stradal.
- John P. Wilson & Kathleen K. Wilson Scholarship.** Sponsored by Philip & Constance Wilson.
- Jean & Raymond Winkler Scholarship**
Wunsch Foundation Scholarship
- Richard E. Young Memorial Scholarship.**
 Sponsored by Mr. & Mrs. Edward J. Young.
- Term Scholarships**
Dr. Lilia Abron Scholarship
Accenture Scholarship
Dean M. Ahrens Scholarship. Sponsored by Gary Ahrens.
- Shirley & Thor Anderson Scholarship**
Jeffrey & Nancy Balter Scholarship in Biomedical Engineering
Gene K. Beare Memorial Scholarship
William C. E. Becker Memorial Scholarship. Sponsored by William K. Becker.
- Beers/Thomas Scholarship.** Sponsored by Matthew & Diane Thomas.
- William R. Benson Memorial Scholarship.**
 Sponsored by Mr. & Mrs. Robert W. Benson.
- William C. Bernard Memorial Scholarship.**
 Sponsored by William L. & Rita Bernard.
- John & Charlotte Berra Scholarships**
Lucile N. Bodine Memorial Scholarship.
 Sponsored by Jack & Mary Jane Bodine.
- Adeline & Erwin Branahl Scholarships**
Samuel C. & Rose C. Brasch Memorial Scholarship. Sponsored by Jerome F. & Rosalie Brasch.
- Antoinette C. Breihan Scholarship in Memory of Erwin R. Breihan**
Henry Edward Buhr Scholarship.
 Sponsored by Darin Groll.
- Dr. Robert J. & Kathryn W. Calcaterra Scholarship**
Caldwell Brothers Scholarship. Sponsored by David & Dennis Caldwell.
- Anne Marie & Christopher Chivetta Scholarship**
Amy & Steve Cho Scholarship
Class of 2004 Scholarship
William J. & Dorothy W. Coad Scholarship
Gaines Coleman Scholarship
Marshall & Eileen Curtis Scholarship
Jane Zimmer Daniels Scholarship
Carl & Jeanne Deutsch Scholarship
Andrew D. Dimarogonas Scholarship.
 Sponsored by Catherine Dimarogonas.
- Donald Family Scholarship**
Adele A. Dunne Scholarship. Sponsored by Thomas P. Dunne.
- Thomas C. Dunne Scholarship.** Sponsored by Thomas P. Dunne.
- Frank Dziama Memorial Scholarship.**
 Sponsored by Frank R. Dziama.
- Dr. Ed Edgerley Memorial Scholarship in Environmental Engineering.** Sponsored by Dan & Karen Logan.
- Emerson Process Management Engineering Scholarship**
Engineering School's Senior Class Scholarship
Pat & Don Essen Family Scholarship
Barbara & James Forst Scholarship.
 Sponsored by Thomas L. Bugnitz & Gregory A. Sullivan.
- Rose & Joseph Foster Scholarships.** Sponsored by Norman & Madeline Foster.
- Michael & Jean Franke Scholarship**
Donna Franzel Memorial Scholarship.
 Sponsored by Harvey & Melba Franzel.
- Helen Marie Freund Memorial Scholarship.** Sponsored by Dr. Lawrence Aronberg.
- Cherryll Walzel-Frick & F. Alan Frick Scholarship for Graduate Studies**
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Jane K. Geisel-Guidicini Memorial Scholarship. Sponsored by Charles & Marlene Geisel.
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David E. Gers Memorial Scholarship.
 Sponsored by Jerome F. & Rosalie Brasch.
- Robert J. & Arleen S. Gibbs Scholarship.**
 Sponsored by Kenneth & Claire Gibbs.
- Gnau & Schapp Families Scholarship.**
 Sponsored by Ronald & Betsy Schapp.
- William M. Graves Scholarship.** Sponsored by William & Anita Graves.
- Dr. Patricia (Sam) Grossman Scholarship.**
 Sponsored by Shannon E. Grossman.
- Guarantee Electrical Scholarship.**
 Sponsored by Rich & Marion Oertli.
- H & W Equipment Company Scholarship.**
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Forest & Frances Head Scholarships
Erma H. Herr Memorial Scholarship.
 Sponsored by Eugene W. Herr.
- Hobbes Scholarship.** Sponsored by Marjorie Patton.
- Paul B. Hodges Memorial Scholarship.**
 Sponsored by Michael & Sally Pierle.
- Michael D. Holtz Scholarship**
Horner & Shifrin Scholarship. Sponsored by Leonard Kirberg.
- Bertha K. Huddle Memorial Scholarship.**
 Sponsored by John & Dorothy Huddle.
- Henry B. E. Huddle Memorial Scholarship.**
 Sponsored by John & Dorothy Huddle.
- Ernest H. Hui Scholarship**
Stifel Jens Scholarship. Sponsored by Thomas L. Bugnitz & Gregory A. Sullivan.
- Don & Karen Jubel Scholarships**
K & K Scholarship. Sponsored by Kenneth & Kathryn Trachte.
- Robert C. Kane Scholarship**
Henry & Elaine Kaufman Scholarship.
 Sponsored by Craig Kaufman.
- Meyer & Yetta Klayman Scholarship.**
 Sponsored by Jerome F. & Rosalie Brasch.
- Sophie Kruszka Memorial Scholarship.**
 Sponsored by Greg & Susan Kruszka.
- John H. Landwehr, Sr. Memorial Scholarship**
Helena & Harold Law Scholarships
Gayle & Charles Lebens Scholarship
Donald & Harriet Levy Scholarship
Roy A. Lieder Memorial Scholarship.
 Sponsored by Family & Classmates of Roy A. Lieder.
- Dr. & Mrs. Moh-Deh Lin Scholarship**
Dr. Christine H. Lorenz Scholarship
Andrew Loth Scholarships
Lowy Enterprises Engineering Scholarships. Sponsored by Steven Lowy.
- Elmer W. Lueckerath Scholarships**
McDonnell Douglas Scholarships
I. E. & Goldie G. Millstone Scholarships
Jeff & Joanne Mishkin Scholarship
MiTek Scholarship. Sponsored by R. Joseph Kannappell.

MiTek II Scholarship**Florence W. Moe Memorial Scholarships.**

Sponsored by Warren R. & Robert I. Moe.

James B. Monroe Scholarship**Larry G. Mrazek Scholarship****Christopher B. & Molly R. Myers Scholarship**

Newberry Scholarship. Sponsored by Brenda & Maurice Newberry.

Chase Norman Scholarship. Sponsored by Mr. Alan Norman.

Robert T. & Marie C. O'Donnell Scholarship**Chuck & Judy Okenfuss Scholarship in Engineering****Mary Jane & Joseph Ondr Scholarship****Tom & Rose Marie Pashos Scholarship****Bill & Bonnie Patient Scholarships****Mr. & Mrs. Elmer H. Payne Scholarship****Pineapple Scholarship****John W. Powers Scholarship****Proctor/Kroeger Memorial Scholarship.**

Sponsored by Stanley & Carol Proctor.

Rangel Uribe Scholarship. Sponsored by

Jose Manuel & Yolanda Uribe Rangel.

Henry & Marjorie Reitz Scholarship in Civil & Environmental Engineering.

Sponsored by Rick & Betty Ryckman.

J. Alan & Marcia K. Ritter Scholarship**Phillip D. & Sandra Robers Scholarship****Professor Ervin Y. Rodin Scholarship.**

Sponsored by Richard P. Mattione.

Ross & Baruzzini Inc. Scholarship. Sponsored by Donald K. Ross.

David & Jan Rossetti Scholarship in Computer Science**Dave Rossetti Tribute Scholarship****Louis & Freddie Sauer Scholarship**

Schnettler Family Scholarship. Sponsored by Jack, Elizabeth & Michael Schnettler.

Henry G. Schwartz, Jr. Scholarship**SEMCOR Scholarship.** Sponsored by

Rudolph & Henrietta Freedman.

Allan M. Siegel Scholarship. Sponsored by Frances Siegel.

Louis & Hazel Sprandel Scholarship**Standard Machine & Manufacturing Co.**

Scholarship. Sponsored by Carl & Jeanne Deutsch.

Audrey & John Steinfeld Scholarships**Palmer Still Memorial Scholarship.**

Sponsored by Russell Still.

Harold L. Studt, Jr. Scholarship. Sponsored by Elizabeth & Harold Studt.

Subsurface Constructors Inc. Scholarship.

Sponsored by John B. Morgan.

William Tao & Associates Scholarship.

Sponsored by Richard R. Janis.

John & Susan Tomich Scholarship**Tucker Family Foundation Scholarship.**

Sponsored by Martin S. Tucker.

Charles E. Turco & Jennifer L. Markwardt Scholarship**Mr. & Mrs. Ramon A. von Drehle Scholarship****Duncan C. Weir Memorial Scholarship.**

Sponsored by Brian Fin & Jennifer Balentine.

George "Butch" Welsch Scholarship**Harold & Edith A. Wiese Scholarship****Jean & Raymond Winkler Scholarship****Carol & Marc Winograd Scholarship****Norman Yager Memorial Scholarship.**

Sponsored by Ira & Donna Spector.

Frank & Grace Yin Scholarship in Biomedical Engineering**Special Awards****Engineering Academic Fellowship Program.**

The School of Engineering & Applied Science Academic Fellowship Program for high school seniors has been established in honor of Alexander S. Langsdorf and Calvin M. Woodward, former deans of the School of Engineering. Based on a national competition, up to 31 high school seniors who have been admitted to the School of Engineering & Applied Science for the following fall will be selected each spring. Candidates are selected on the basis of scholarship, aptitude, and achievement, together with potential for success in the engineering profession. Four students are designated as Langsdorf Fellows and up to 27 as Woodward Fellows. Langsdorf Fellowships provide an award of full tuition plus a \$2,500 stipend. Woodward Fellowships provide an award of up to one-half tuition. All fellowships are awarded without consideration of financial need and are renewable for up to four years of undergraduate study.

George W. F. and Martha Russell Myers Scholarship.

The Myers Scholarship is available on a competitive basis to students residing in the greater St. Louis area. It is designed to assist graduating high school seniors who have demonstrated outstanding scholastic aptitude and an interest in preparing for professional careers in engineering and applied science. One Myers Scholarship, consisting of full tuition, a \$1,000 stipend, and three summers of research experience, will be awarded to a candidate for freshman admission to the School of Engineering & Applied Science. The Myers Scholarship is renewable for four years of undergraduate study. The scholarship is part of the School's Academic Fellowship Program. Applicants for the Myers Scholarship automatically become applicants for the Langsdorf and Woodward fellowships. Myers Scholars must reside in one of the following areas: the city of St. Louis; Franklin, Jefferson, St. Charles, or St. Louis County in Missouri; Madison or St. Clair County in Illinois.

Washington University/SAE Engineering Scholarship.

In association with the Society of Automotive Engineers, Inc., the School of Engineering & Applied Science sponsors up to three \$3,000 scholarships for high school seniors who have been offered admission to the School. The scholarships are renewable for four years of undergraduate study. If the recipient is admitted to the School's five-year B.S.-M.S. program, the scholarship will be extended for a fifth year. Application forms are available through SAE International, 400 Commonwealth Drive, Warrendale, PA 15096.

Bloss Memorial Fund. This fund, established by Ernst and Josephine Bloss, is

used to recognize the best design in the field of sanitary engineering. Selection of recipients is determined by the environmental engineering faculty.

Dames Award. This fund, established by Antoinette Frances Dames, is used to recognize outstanding academic achievement by one or more sophomores in the School. Selection of recipients is made by the Dean's Office in consultation with the Undergraduate Board.

Klemm Award. This fund, established by Armin Louis Klemm, is used to recognize the outstanding junior in the Department of Chemical Engineering. Recipients are selected by the department chairman in consultation with chemical engineering faculty.

Levy Award. This fund, established by David B. Levy, is used to recognize the outstanding senior in the Department of Electrical and Systems Engineering. Recipients are selected by the department chairman in consultation with electrical engineering faculty.

Razek Prize. This fund, established by Joseph Razek, is used for the Joseph Razek Prize to one or more outstanding students in the Department of Mechanical and Aerospace Engineering. Recipients are selected by the department chairman in consultation with mechanical engineering faculty.

Allison Fund. This fund, established by James E. Allison, aims to encourage the study of economics by engineering students. The annual income from this fund is used to award cash to engineering students who have completed at least 12 units of economics credit. Eligibility restrictions are determined by the dean's office.

Guller Scholarship. This fund, established by Harold and Millie Guller, seeks to encourage students to participate in the B.S.-M.B.A. program. The awards are made for the fourth and fifth years of study. For more information, contact the School of Engineering Registrar's Office, 324 Lopata Hall, or the Office of the Dean in the Olin School of Business.

Undergraduate Courses

For administrative purposes, the School is subdivided into six academic departments and several interdepartmental programs. Each of these may offer courses leading to one or more bachelor's, master's, and doctoral degrees. In cooperation with the Department of Physics of the College of Arts & Sciences, the School offers the degree B.S. in Physics. All of these programs are described in this section.

The courses of instruction are numbered according to the following system:

- 100 to 199 are primarily for first-year students.
- 200 to 299 are primarily for sophomores.
- 300 to 399 are primarily for juniors.
- 400 to 499 are primarily for juniors and seniors, although certain courses may carry graduate credit.

500 or above are offered to graduate stu-

dents and to juniors and seniors who have met all stated requirements. If there are no stated requirements, juniors and seniors will need to get permission of their instructor.

One unit of credit is given for each hour of lecture, and one unit for each two and one-half hours of laboratory. Each course description shows the course's credit. The course credit is further divided into three categories: engineering science, basic science, engineering design. The curricula outlined in the departmental chapters in the School of Engineering & Applied Science section of this *Bulletin* are designed to satisfy these specific requirements. A table of all engineering courses and, for each course, the division of its credits among the three categories is available and frequently updated on the School's Web site (www.seas.wustl.edu).

Engineering Courses

Engr 100A, 200A, 300A, 400A, 500A.

Required of all students who are currently working and who are participating in the Engineering Cooperative Education Program. No credit. Audit only.

Engr 120. Freshman Seminar

Student-run course giving hands-on introduction to various engineering disciplines. Information regarding potential majors, and knowledge of all engineering subjects. In-class design projects for each academic area; competition among teams for best projects. Prizes awarded. Promotes team skills vital for today's interdisciplinary workplace, positive social atmosphere, and a great opportunity to meet other engineering students. Information about engineering student groups. Credit 1 unit. Design credit 0.5 unit.

First-Year Program

This first-year program is offered as a starting point for beginning students and their advisers when planning each student's individual course schedule.

A typical first-year course load totals 14 to 16 units for each semester, and it is not wise to enroll for more than 16 units during the first semester. It may be that a load of less than 14 units is desirable. You should enroll in the following courses:

Calculus: Beginning engineering students with previous calculus course work usually begin with Math 132 (Calculus II). Students with a strong mathematics background may be ready for Math 233 (Calculus III) or even Math 217 (Differential Equations).

Physics and/or Chemistry: If biomedical engineering or chemical engineering is a likely major, chemistry and physics should be completed during the first year; for other majors, physics is the recommended choice.

First-Year Seminar (Engr 120): This course is highly recommended.

Other courses: Most first-year engineering students also enroll in one or more humanities/social sciences courses, engineering courses at the 100 level, and perhaps a computer science course. If you have a major or are strongly leaning toward a major, you should follow the recommendations for that major.

English Composition: The English composition requirement must be completed as soon as possible (see page 320-321).

Suggested Courses for First Semester Units

Mathematics (Math 132)	3
Physics (Physics 117A or 197)	4
Chemistry (Chem 111A & 151)	5
(Biomedical Engineering, Chemical Engineering, and premedicine) Seminar (Engr 120)	1
Humanities/social sciences elective	3
Engineering course(s)	3 or 6

Suggested Courses for Second Semester Units

Mathematics (next course)	3 or 4
Physics (Physics 118A or 198)	4
Chemistry (Chem 112A & 152)	5
(Biomedical Engineering, Chemical Engineering, and premedicine) Humanities/social sciences elective	3
Engineering course(s)	3-6

Recommended Courses

The following list recommends course sequences for each engineering major.

Aerospace Engineering: ME 141C or ME 141D, first semester; ME 141C or ME 141D second semester; ME 201 during the first year.

Biomedical Engineering: BME 140, first semester.

Chemical Engineering: CHE 146A, first semester.

Civil Engineering: CE 145A first or second semester; CE 142 first or second semester; CE 146 second semester.

Computer Engineering: CSE 131-132, first and second semester.

Computer Science: CSE 131-132, first and second semester; CSE 240, second semester.

Electrical Engineering: CSE 131 and 132, or CSE 126 recommended, first or second semester; ESE 102, second semester.

Mechanical Engineering: ME 141C or ME 141D, first semester; ME 141C or ME 141D second semester; ME 204 during the first year.

Systems Science and Engineering: CSE 131, first semester; ESE 309, first or second semester.

Air Force ROTC— Aerospace Studies

Professor

Angela Johnson, Lt. Col.

The Air Force Reserve Officers Training Corp (AFROTC) offers an Aerospace Studies program (different from the School of Engineering's Mechanical and Aerospace programs), which is divided into two parts: the General Military Course (GMC), which is the first-year/sophomore-level curriculum, and the Professional Officer Course (POC), the junior/senior-level curriculum. The GMC covers two main themes: the Air Force Today and the Air Force Way. The courses of the POC emphasize the professional development of the future Air Force officer. The curriculum covers Air Force leadership and management and preparation for active duty. Field trips to Air Force bases supplement classroom instruction and familiarize the cadet with Air Force operations and organization. Participation in AFROTC is not required to take aerospace courses.

Leadership Laboratory is taken two hours per week throughout the student's enrollment in the AFROTC. Instruction is conducted within the framework of an organized cadet corps with a progression of experiences designed to develop each student's leadership potential. The first two years of the Leadership Laboratory include studying Air Force customs and courtesies, drill and ceremonies; issuing military commands; instructing, directing, and evaluating the preceding skills; studying the environment of an Air Force officer; and learning about areas of opportunity available to commissioned officers. The last two years of Leadership Laboratory consist of activities classified as advanced leadership experiences. They involve the planning and control of military activities of the cadet corps; the preparation and presentation of briefings and other oral and written communications; and the provision of interviews, guidance, and information that will increase the understanding, motivation, and performance of other cadets.

AFROTC cadets must also successfully complete supplemental courses to enhance their utility and performance as commissioned officers. These include University courses in English composition and mathematical reasoning. Specific courses are designated by the professor of Aerospace Studies.

Cadets in the four-year program participate in four weeks of field training. Cadets in the two- or three-year programs (with exception for prior Air Force service) must attend the five-week field training session, which is identical to the four-week program plus 90 hours of GMC curriculum. Field training is offered during the summer months at selected bases throughout the United States, usually between a student's sophomore and junior years. Major areas of study include Air Force orientation, officer training, aircrew/aircraft orientation, survival training, base functions, and physical training.

Students applying for entry into the two- or three-year program must successfully complete five weeks of field training prior to enrollment in the Professional Officer Course. The major areas of study included in the five-week field training program are essentially the same as those conducted at the four-week program, plus the academic curriculum of the General Military Course including Leadership Laboratory. No direct academic credit is awarded for field training.

Federal scholarships are available to AFROTC cadets with any academic major. Applications must be submitted by detachment personnel to Headquarters Reserve Officers Training Corps (AFROTC), Maxwell Air Force Base, Alabama. For additional information, contact AFROTC Detachment 207 at 314/977-8227 or 1-888/4-AFROTC.

Lower Division (General Military)

Aerospace Studies courses (I02-101B through I02-202A) are basic courses designed to acquaint students with the U.S. Air Force and the opportunities available as an officer.

I02-101B-102. The Air Force Today

A survey course designed to introduce students to the United States Air Force and Air Force Reserve Officer Training Corps. Featured topics include: mission and organization of the Air Force, officership and professionalism, military customs and courtesies, Air Force officer opportunities, group leadership problems, and an introduction to communication skills. Leadership Laboratory is mandatory for AFROTC cadets, and it complements this course by providing students with followership experiences. Classroom activity, two hours per week; Leadership Laboratory, two hours per week. Credit 2 units each semester.

I02-201B-202A. The Air Force Way

Survey course designed to facilitate the transition from Air Force ROTC cadet to Air Force ROTC candidate. Featured topics include: Air Force heritage, Air Force leaders, quality Air Force, an introduction to ethics and values, introduction to leadership, group leadership problems, and continuing application of communication skills. Leadership Laboratory is mandatory for Air Force ROTC cadets, and it complements this course by providing cadets with their first opportunity for applied leadership experiences discussed in class. Classroom activity, two hours per week; Leadership Laboratory, two hours per week. Credit 2 units each semester.

Upper Division (Professional Officer)

Aerospace Studies courses I02-301B through I02-402A are advanced courses designed to improve communication and management skills required of Air Force officers.

I02 301B-302A. Air Force Leadership and Management

The study of leadership and quality management fundamentals, professional knowledge, Air Force doctrine, leadership ethics, and communication skills required of an Air Force junior officer. Case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts being studied. Mandatory Leadership Laboratory complements this course by providing advanced leadership experiences in officer-type activities, giving students the opportunity to apply

leadership and management principles of this course. Classroom activity, three hours per week; Leadership Laboratory, two hours per week. Credit 3 units each semester.

I02 401A-402A. Preparation for Active Duty

Examines the national security process, regional studies, advanced leadership ethics, Air Force doctrine. Special topics of interest focus on the military as a profession, officership, military justice, civilian control of the military, preparation for active duty, and current issues affecting military professionalism. Within this structure, continued emphasis is given to refining communication skills. An additional Leadership Laboratory complements this course by providing advanced leadership experiences, giving students the opportunity to apply leadership and management principles of this course. Classroom activity, three hours per week; Leadership Laboratory, two hours per week. Credit 3 units each semester.

Field Training

Field training provides leadership and officership training in a military environment, which demands conformity to high physical and moral standards. Within this structured environment, cadets are screened for officer potential as measured against field training standards. Motivation and professional development are achieved through various programs such as flight orientation, marksmanship, and survival training. Field training is offered during the summer months at selected bases throughout the United States. Students in the four-year program participate in four weeks of field training, usually between their sophomore and junior years. Major areas of study include: Air Force orientation, officer training, aircrew/aircraft orientation, survival training, base functions, and physical training.

For additional information, contact AFROTC Detachment 207 at 314/977-8227 or 1-888/4-AFROTC.

Army ROTC

Courses offered by the Army ROTC program are not under the jurisdiction of the School of Engineering & Applied Science. The course descriptions below are printed here for the convenience of the members of the Washington University community.

I25 101C. Introduction to Army ROTC

Make your first new peer group at college one committed to performing well and enjoying the experience. Increase self-confidence through team study and activities in basic drill, physical fitness, rappelling, leadership reaction course, first aid, making presentations, and basic marksmanship. Learn fundamental concepts of leadership in a profession in both classroom and outdoor laboratory environments. Credit 2 units.

I25 102C. Introduction to Leadership

Learn/apply principles of effective leading. Reinforce self-confidence through participation in physically and mentally challenging exercises with upper-division ROTC students. Develop communication skills to improve individual performance and group interaction. Relate organizational ethical values to the effectiveness of a leader. Credit 2 units.

I25 201C. Self/Team Development

Learn/apply ethics-based leadership skills that develop individual abilities and contribute to the building of effective teams of people. Develop skills in oral presentations, writing concisely, planning of events, coordination of group efforts, advanced first aid, land navigation, and basic military tactics. Learn fundamentals of ROTC's Leadership Development Program. Credit 3 units.

I25 202C. Individual/Team Military Tactics

Introduction to individual and team aspects of military tactics in small-unit operations. Includes use of radio communications, making safety assessments, movement techniques, planning for team safety/security, and methods of pre-execution checks. Practical exercises with upper-division ROTC students. Learn techniques for training others as an aspect of continued leadership development. Credit 3 units.

I25 301C. Leading Small Organizations I

Series of practical opportunities to lead small groups, receive personal assessments and encouragement, and lead again in situations of increasing complexity. Uses small-unit defensive tactics and opportunities to plan and conduct training for lower-division students both to develop such skills and as vehicles for practicing leading. Prerequisite: Military Science 202C or permission of instructor. Credit 3 units.

I25 302C. Leading Small Organizations II

Continues methodology of Military Science 301C. Analyze tasks; prepare written or oral guidance for team members to accomplish tasks. Delegate tasks and supervise. Plan for and adapt to the unexpected in organizations under stress. Examine and apply lessons from leadership case studies. Examine importance of ethical decision making in setting a positive climate that enhances team performance. Prerequisite: Military Science 301C or permission of instructor. Credit 3 units.

I25 401C. Leadership Challenges and Goal-Setting

Plan, conduct, and evaluate activities of the Army ROTC cadet organization. Articulate goals and put plans into action to attain them. Assess organizational cohesion and develop strategies to improve it. Develop confidence in skills. Prerequisite: Military Science 302C or permission of instructor. Credit 3 units.

I25 402C. Transition to Lieutenant

Continues the methodology from Military Science 401C. Identify and resolve ethical dilemmas. Refine counseling and motivating techniques. Examine aspects of tradition and law as it relates to leading as an officer in the Army. Prepare for a future as a successful Army lieutenant. Prerequisite: Military Science 401C or permission of instructor. Credit 3 units.

Biomedical Engineering

Chair

Frank C-P Yin (1997)*

Stephen F. and Camilla T. Brauer Professor
Ph.D., M.D., University of California, San Diego, 1970, 1973
Biomechanics, biofluid mechanics, cell mechanics

Associate Chair and Associate Professor

Jin-Yu Shao (1998)

Ph.D., Duke University, 1997
Cell mechanics, receptor and ligand interactions, cell adhesion

Endowed Professors

Yoram Rudy (2004)

Fred Saigh Distinguished Professor
Ph.D., Case Western Reserve University, 1978
Cardiac electrophysiology, modeling of the cardiac system

Lihong Wang (2006)

Lucy and Stanley Lopata Distinguished Professor
Ph.D., Rice University, 1991
Biophotonics and multimodality optical imaging

Senior Professor

Salvatore P. Sutera (1968)

Ph.D., California Institute of Technology, 1960
Viscous flow, rheology of suspensions, biomechanics

Professors

Larry A. Taber (1997)

Ph.D., Stanford University, 1979
Mechanics of growth and development, cardiac mechanics

Associate Professors

Jianmin Cui (2004)

Ph.D., SUNY Stony Brook, 1992
Ion channels, channel structure-function relationship, biophysics

Igor R. Efimov (2004)

Ph.D., Moscow Institute of Physics and Technology, 1992
Cardiac imaging, mechanisms of arrhythmias, implantable stimulators

Assistant Professors

Dennis L. Barbour (2004)

M.D./Ph.D., Johns Hopkins University, 2003
Auditory physiology, sensory cortex neurocircuitry, functional neuronal imaging

Donald L. Elbert (2000)

Ph.D., University of Texas at Austin, 1997
Biomaterials, polymer chemistry, proteomics
Shelly E. Sakiyama-Elbert (2000)
Ph.D., California Institute of Technology, 2000
Cell adhesion, nerve regeneration, protein engineering

Daniel W. Moran (2001)

Ph.D., Arizona State University, 1994
Motor control, neural engineering, neuroprosthetics, movement biomechanics

Rohit V. Pappu (2001)

Ph.D., Tufts University, 1996
Macromolecular self assembly and function, computational biophysics

David S. Sept (2001)

Ph.D., University of Alberta, 1997
Cytoskeletal dynamics, computational biophysics

Kurt A. Thoroughman (2002)

Ph.D., Johns Hopkins University, 1999
Human motor control and motor learning, neural computation

Joint Faculty

Dora Angelaki, Ph.D.

(Anatomy and Neurobiology)

R. Martin Arthur, Ph.D.

(Electrical and Systems Engineering)

Philip V. Bayly, Ph.D.

(Mechanical and Aerospace Engineering)

Michael R. Brent, Ph.D.

(Computer Science and Engineering)

Elliot L. Elson, Ph.D.

(Biochemistry and Molecular Biophysics)

Joseph W. Klaesner, Ph.D.

(Physical Therapy)

Sándor J. Kovács, M.D., Ph.D.

(Medicine)

Garland R. Marshall, Ph.D.

(Biochemistry and Molecular Biophysics)

James G. Miller, Ph.D.

(Physics)

Ruth J. Okamoto, D.Sc.

(Mechanical and Aerospace Engineering)

Marcus E. Raichle, M.D.

(Radiology)

William D. Richard, Ph.D.

(Computer Science and Engineering)

Matthew J. Silva, Ph.D.

(Orthopedic Surgery)

Gary D. Stormo, Ph.D.

(Genetics)

David C. Van Essen, Ph.D.

(Anatomy and Neurobiology)

Samuel A. Wickline, M.D.

(Medicine)

About Biomedical Engineering

Biomedical engineering is a multidisciplinary field in which the concepts, methods, and techniques of engineering are applied to solving problems in biology and medicine. It applies quantitative, analytical, and integrative

* The information presented about a faculty member includes the year the faculty member came to Washington University; the highest degree received, the institution bestowing the degree, and the year it was bestowed; and major areas of research.

tive methods from the molecular level to that of the whole organism to further our understanding of basic biological processes and to develop innovative approaches for the prevention, diagnosis, and treatment of disease.

As a student majoring in biomedical engineering, you will have the opportunity to participate in the research activities of engineering and medical faculty via the University's Institute of Biological and Medical Engineering, which offers world-class programs in biomedical and biological imaging, cardiovascular engineering, cell and tissue engineering, molecular engineering, and neural engineering. All students in biomedical engineering are encouraged to join and be active in the Biomedical Engineering Society.

Mission Statement

Our department's mission is to serve society as a center for learning and knowledge-creation in engineering and science for the purpose of advancing biology and medicine.

Our overall objective is to educate practitioners of biomedical engineering and associated professions who are able to address effectively scientific, professional and ethical challenges.

Academic Programs

The Bachelor of Science in Biomedical Engineering (B.S.-B.M.E.) is designed to prepare graduates for the practice of engineering at a professional level and meets nationally recognized criteria for accreditation.

The curriculum is structured around a basic core of 98–101 units (see page 330). A complementary set of courses totaling at least 27 units completes the degree requirements. The latter courses are elected from the sciences (biology, chemistry, physics), mathematics, or engineering.

To satisfy Accreditation Board for Engineering and Technology requirements, all professional engineering curricula at the baccalaureate level must include the equivalent of one and one-half years (45 credits) of engineering topics, to include engineering sciences and engineering design appropriate to biomedical engineering. To satisfy this requirement, students, with the approval of their academic advisers, are free to take any engineering courses for which they have the necessary prerequisites, including available 500-level (graduate) B.M.E. courses. They may also receive up to 6 units of academic credit for a research or design project, by registering for BME 400, Independent Work. In addition, their course program must include sufficient laboratory experience to ensure competence in experimental design, data collection, and data analysis.

Students have the option of choosing one of four areas of concentration, or tracks, of biomedical engineering. These tracked curricula are offered in addition to a general curriculum without specialization. Corresponding to each of the tracked curricula, and the untracked curriculum as well, a specific professional core plus additional elective courses must be completed in addition to the basic core. For the tracked curricula

the professional cores are designed to ensure that the individual student's undergraduate training provides adequate depth in the particular specialization of his/her choice. The professional core for the general curriculum aims to ensure adequate breadth across the entire field of biomedical engineering. The four specific tracks are:

- Biomechanics
- Bioelectrical Systems
- Biomolecular Systems
- Biotechnology

Beginning on page 332, these four tracks and the general curriculum are described and their corresponding professional core and track-specific electives listed. For each of these five options a sample curriculum is displayed.

Note: These are samples only. The official departmental requirements are in the undergraduate advising manual given to each student entering in the fall.

Joint B.S.-M.S. Program

A five-year program leading simultaneously to the professional Bachelor of Science and the Master of Science degrees in biomedical engineering offers an opportunity to combine undergraduate and graduate studies in an integrated curriculum. Students who earn at least a B average during their third, fourth, and fifth semesters may apply for admission to the joint B.S.-M.S. program before the end of their junior year. Consistent with the general requirements defined by the School of Engineering & Applied Science, a minimum of 150 units of academic credit must be completed. The student has the option of completing the master's degree with or without thesis. Course selections must satisfy the requirements of both the B.S. and M.S. degrees.

Double Majors

Another option available to students majoring in Biomedical Engineering is the double major, leading to a second professional Bachelor of Science degree in one of the other engineering disciplines in four years. A degree in Biomedical Engineering combined with a professional degree in one of the traditional engineering disciplines can be expected to enhance employment options in industry. Depending upon the second major chosen, total unit requirements may range from 140 to 148 (or less if the student enters with AP credits). Hence, some summer work may be necessary to complete a double major within four academic years. To determine the specific requirements to be satisfied for both degrees, the student is urged to consult with an adviser in the second department as early as possible.

Undergraduate Courses

BME 140. Introduction to Biomedical Engineering

Introduction to Washington University's undergraduate program in Biomedical Engineering; degree requirements and curricular tracks. Historical perspectives of biomedical engineering; contemporary scope. Elements of human anatomy and physiology; key vocabulary and definitions; major organ systems of the body and some of the defects

remediable through biomedical engineering. Application of basic principles of physics, chemistry and engineering science to the quantitative analysis of physiological systems: e.g., biological flows and mass transport, cardiac electrophysiology, metabolism and energetics, orthopaedic biomechanics. Survey of artificial organs and medical devices: mechanical heart and ventricular assist devices; heart valves; extracorporeal blood oxygenators and dialyzers; prosthetic joints; cochlear implant; neural stimulators. Current research areas at WU: presentations by faculty in engineering and medicine on such topics as biomedical imaging, biotechnology and biomolecular systems, cardiovascular engineering, cell and tissue engineering, computational molecular biology, neural engineering and others. Corequisites: Physics 117A, Chem 111A. Credit 3 units.

BME 201. From Concept to Market—The Business of Biomedical Engineering

This seminar course will introduce students to the fascinating and complex process of bringing new medical technologies from the concept stage to the market place. The course draws on experiences of successful entrepreneurs and industry professionals to address some of the most important elements of the technology life cycle. Topics include the theory, practice, challenges, and opportunities of business strategy development; FDA regulations; product development; finances; sales and marketing; patents and intellectual property protection; team and corporate culture; and professional ethics. The course exposes students to the real-world experiences of guest speakers with diverse backgrounds including practicing engineers, entrepreneurs, attorneys, investors, industrial psychologists, team development professionals, career development coaches and other relevant professionals. The course provides fun, thought-provoking and interactive learning throughout the semester, culminating in presentations by student groups at the end of the semester in lieu of a final exam. Student teams each conceive a hypothetical medical product and develop and present a complete business plan addressing issues covered throughout the course. Students bring remarkable creativity and imagination to the final project, bringing the course to a rousing conclusion. Business, arts and sciences and other nonengineering students are encouraged to join the course and take advantage of the value it offers. Prerequisite: BME 140 or permission of the instructor Credit 3 units.

BME 240. Biomechanics

Principles of static equilibrium and solid mechanics applied to the human anatomy and a variety of biological problems. Statics of rigid bodies with applications to load-bearing joints and other structures of the human body. Mechanics of deformable media including soft biologic tissues. Growth and residual stress in living tissue. Stress analysis of bone, muscle, arteries, and the heart. Prerequisite: Math 217 Credit 3 units.

BME 301A. Quantitative Physiology I

A course (lectures and supervised laboratory sections) designed to elaborate the physiological background necessary for advanced work in biomedical engineering. A quantitative model-oriented approach to physiological systems is stressed. Topics include nerve action potentials; electromyography; and skeletal muscle mechanics. Prerequisites: BME 140, CSE 131, ESE 230, Biol 296A, SSM 317, or permission of instructor. Corequisites: Biol 3050 or 3059, ESE 317, EP 310, or permission of instructor. 4 units. Credit 4 units.

BME 301B. Quantitative Physiology II

A course (lecture and supervised laboratory sessions) designed to elaborate the physiological background necessary for advanced work in biomedical engineering. A quantitative model-ori-

ented approach to physiological systems is stressed. Topics include electrocardiography; heart contractility; pulse wave propagation in arteries; pulmonary function; renal function; immune system; drug delivery. Prerequisites: BME 140, CS 265, EE 280, Biol 296A, SSM 314, or permission of the instructor. Corequisites: Biol 297A, EP 310, or permission of the instructor. Credit 3 units.

BME 314. Physics of the Heart
Same as Physics 314.

BME 400. Independent Study
Independent investigation on topic of special interest. Prerequisites: junior or senior standing and permission of program director. Credit variable, maximum 6 units.

BME 401. Biomedical Engineering Design
A design project experience to prepare students for engineering practice. Working individually or in small groups, students will undertake an original design or redesign of a component or system of biotechnological significance. The design experience will require application of knowledge and skills acquired in earlier classes and laboratory work; it will incorporate engineering standards and realistic constraints that include most of the following considerations: economic, environmental, ethical, manufacturability, sustainability, health and safety, social, and political. Students will prepare written reports and present their designs orally to their classmates and panels of faculty members and industrial representatives. Pro-

totype construction is not generally required but may be encouraged subject to available time, financial and material resources. Prerequisite: BME 301A, BME 301B and senior standing. Credit 3 units.

BME 402. Senior Design II
BME 402 is a continuation of the BME 401 class. Working in small groups, students will take a paper design completed in BME 401 and build a prototype. The students will evaluate, optimize, and undertake the building of the design. The design experience will require application of knowledge and skills acquired in earlier course work; it will incorporate engineering standards and realistic constraints that include most of the following considerations: economic, environmental, sustainability, manufacturability, ethical, health and safety, social, and political. Students will prepare written reports and participate in oral design reviews to a panel of faculty members and industrial representatives. Prototype construction is the final goal of the class. Prerequisites: BME 401, senior standing, and approval of the instructor. Credit 3 units.

BME 421. Special Topics: Kinetics of Receptor-Mediated Processes
Same as BME 521.
Receptor-mediated processes impact many aspects of cell behavior, including cell proliferation, survival, migration and death. This course will focus on the development of mathematical descriptions

of cell signaling processes. In particular, we will highlight models that allow the formulation of testable, mechanistic hypotheses related to cell behavior. Additionally, we will examine methods to analyze the flux of information and metabolites through enzymatic cascades. Applications of these methods in cellular engineering, metabolic engineering, and systems biology will be described. Prerequisites: senior or graduate standing. Credit 3 units.

BME 431. Biological Control Systems I
BME 431B. Biological Control Systems
Same as EE 431B.

BME 433. Special Topics: Biomedical Signal Processing
Same as BME 533, CSE 588A.
An advanced undergraduate/graduate level course. Continuous-time and discrete-time application of signal processing tools to a variety of biomedical problems. Course topics include linear systems theory, frequency transforms, sampling theorem, basis functions, linear filtering, feature extraction, noise analysis, system identification. Concepts learned in class will be applied using software tools to real biomedical signals such as speech, ECG, EEG, medical images. Prerequisites: ESE 317, ESE 351. Credit 3 units.

BME 458A. Biological Transport
Same as BME 558.

BME 459. Intermediate Biomechanics
Same as BME 559.

BME 459A. Intermediate Biomechanics
Same as BME 559A.

BME 461. Special Topics: Principles of Protein Structure: Folding, Evolution, and Macromolecular Assemblies
Same as BME 561.

The goal of the course is to provide a molecular foundation for the determinants of protein structure, sequence-structure relationships, protein evolution, and protein design. The course will be divided into four modules: 1) Quantitative understanding of protein structures and sequence-structure relationships; 2) Thermodynamics and kinetics of protein folding; 3) Protein design; and 4) Protein evolution and structural informatics. This course is a 400 /500 level course. Prerequisites: Biol 2960 or equivalent. Credit 3 units.

BME 462. Protein Function and Interactions
This course focuses on the interactions between proteins, nucleic acids, small molecules, and drugs. We begin with the elements of molecular recognition, binding and prediction of interactions. We next move on to molecular kinetics, inhibition and allosteric regulation. Finally, we look at modeling regulatory networks and signaling pathways using systems biology approaches. Credit 3 units.

BME 464. Special Topics: Orthopaedic Biomechanics—Cartilage/Tendon
Same as BME 564.

Basic and advanced viscoelasticity and finite strain analysis applied to the musculoskeletal system, with a primary focus on soft orthopaedic tissues (cartilage, tendon, and ligament). Topics include: mechanical properties of cartilage, tendon, and ligament; applied viscoelasticity theory for cartilage, tendon, and ligament; cartilage, tendon, and ligament biology; tendon and ligament wound healing; osteoarthritis. This class is geared to graduate students and upper-level undergraduates familiar with statics and mechanics of deformable bodies. Prerequisites: BME 240 or equivalent. Note: BME 590Z (463/563) Orthopaedic Biomechanics—Bones and Joints is NOT a prerequisite. Credit 3 units.

Curriculum in Biomedical Engineering—Basic Core

Physical Sciences	Units
General Chemistry (Chem 111A, 112A).....	6
General Chemistry Laboratory I, II (Chem 151, 152).....	4
General Physics (Physics 117A, 118A).....	8
	18
Biological Science	
Principles of Biology I, II (Biol 2960, 2970)	8
Biology III (Biol 3050)	
or Introductory Physiology for Engineers (Biol 3059)	2-4
	10-12
Mathematics	
Calculus II & III (Math 132, 233).....	7
Differential Equations (Math 217).....	4
Engineering Mathematics (ESE 317)	4
Probability and Statistics for Engineers (ESE 326).....	3
	18
Engineering Science	
Engineering and Scientific Computing (CSE 200)	
or Computer Science I (CSE 131)	3-4
Introduction to Electrical Networks (ESE 230).....	3
Engineering Electromagnetics Principles (ESE 330)	3
Transport Phenomena, Biological Processes (ChE 366)	
or Transport Phenomena I (ChE 367)	3
	12-13
Biomedical Engineering	
Introduction to Biomedical Engineering (BME 140)	3
From Concept to Market (BME 201)	3
Biomechanics (BME 240)	3
Quantitative Physiology I, II (BME 301A, 301B)	7
Biomedical Engineering Design (BME 401)	3
	19
Other	
Humanities and Social Science	18
Technical Writing (EP 310)	3
	21
Total, Basic Core	98-101

BME 467. Cardiovascular Engineering II: Cardiac Mechanics*Same as BME 567.*

This course will present experimental and theoretical techniques for analyzing distributions of stress, strain, and material properties in the ventricular walls of the beating heart. A brief description of cardiac anatomy, histology and physiology will be provided, together with the foundations of three-dimensional finite elasticity. This background material will be followed by a detailed explanation of state-of-the-art experimental preparations and the mathematical models used to simulate their behavior. Towards the end of the course, an introduction to the diagnostic value of ventricular wall stress, strain, and material property distributions will be made. Credit 3 units.

BME 468. Cardiovascular Dynamics*Same as BME 568.*

This course focuses on the analysis of blood flow through the heart and blood vessels. Basic cardiovascular anatomy and physiology; principles of continuum mechanics. Flow through heart chambers, valves, and coronary arteries; peristaltic flow in the embryonic heart. Steady and unsteady flow in tubes; wave propagation in blood vessels; flow in collapsible tubes; microcirculation. Prerequisites: ChE 367 or ME 370 or equivalent, or permission of instructor. Credit 3 units.

BME 471. Bioelectric Phenomena

This course is a quantitative introduction to the origins of bioelectricity with an emphasis on neural and cardiac electrophysiology. Topics will include electric fields and current flow in volume conductors; cell membrane channels and their role in generating membrane potentials; action potentials and their propagation in myelinated and unmyelinated axons as well as cardiac tissue. Minor topics of discussion will include both skeletal muscle and nonhuman (e.g. electric fish) sources of bioelectricity. Prerequisite: ESE 330. Credit 3 units.

BME 472. Biological Neural Computation*Same as BME 572.*

This course will consider the computations performed by biological nervous systems. Readings and discussions will investigate the biophysical and physiological bases of computations made by ion channels, synapses, dendrites, neurons, and neuronal systems. Computer laboratories and a semester-long independent project will determine how simple mathematical models succeed or fail to represent observed biological function and organismal behavior. Readings will include classic and current primary research papers. (Note: Graduate students in psychology or neuroscience who are in the Cognitive, Computational, and Systems Neuroscience curriculum pathway may register for one credit. These students will attend all course meetings and complete the homework assignments but will not participate in the semester-long independent project. Registration may be pass/fail. All BME students should register for three credits). Prerequisites for three-credit option: Calculus, some experience with differential equations, and cell or systems biology. Junior and senior undergraduates need permission of instructor. Prerequisites for one-credit option: permission of instructor, Calculus II, and Introductory Biology. Credit variable, maximum 3 units.

BME 482B. Biomedical Instrumentation: Principles and Practice*Same as EE 482B.***BME 490Z. Special Topics: Orthopaedic Biomechanics—Bones and Joints***Same as BME 590Z.*

Basic and advanced solid mechanics applied to the musculoskeletal system, with a primary focus on bone and joint mechanics. Topics include: forces in joints; gait analysis; axial, torsional, and bending loading of bones; mechanical properties (elastic, fracture, creep, fatigue) and composition of bone; bone adaptation and basic concepts of bone biology; joint kinematics; total hip and knee replacement; mechanical consequences of injury (fracture) and disease (osteoporosis). This class is geared to graduate students and upper-level undergraduates familiar with statics and mechanics of deformable bodies. Prerequisites: BME 240 or equivalent. Note: BME 464/564 is NOT a prerequisite. Credit 3 units.

BME 494. Medical Imaging*Same as ESE 483.***BME 499. Independent Study**

Undergraduate independent study. Credit 3 units.

BME 500. Independent Study**BME 501. Graduate Seminar****BME 502. Cardiovascular MRI—Physics to Clinical Application****BME 503A. Cell and Organ Systems Biology****BME 504. Special Topics: Optical Bioelectric Imaging***Same as Biol 5467.***BME 505. Special Topics: Advanced MRI and Molecular Imaging Techniques Journal Club***Same as Biol 5465.***BME 506. Seminar in Imaging Science and Engineering***Same as ESE 596.***BME 5068. Fundamentals of Molecular Cell Biology***Same as Biol 5068.***BME 507. Practicum in Imaging Science and Engineering***Same as ESE 597.***BME 511. Biotechnology Techniques for Engineers****BME 521. Special Topics: Kinetics of Receptor-mediated Processes***Same as BME 421.***BME 523. Biomaterials Science****BME 530. Special Topics: Molecular Cell Biology for Engineers****BME 531. Special Topics: Introduction to Biomolecular Statistical Thermodynamics***Same as Biol 5316.***BME 533. Special Topics: Biomedical Signal Processing***Same as BME 433.***BME 537. Computational Molecular Biology***Same as Biol 5495.***BME 537A. Intensive Course in Computational Molecular Biology****BME 540. Modeling Biomolecular Systems II****BME 5494. Quantitative Cardiovascular Physiology***Same as Biol 5494.***BME 556. Special Topics: Experimental Methods in Biomechanics****BME 557. Cellular and Subcellular Biomechanics****BME 558. Biological Transport***Same as ChE 558, BME 458A.***BME 559A. Intermediate Biomechanics***Same as BME 459A.***BME 560A. Biomechanics***Same as MAE 560.***BME 561. Special Topics: Principles of Protein Structure: Folding, Evolution, and Macromolecular Assemblies****BME 562. Mechanics of Growth and Development****BME 5641. Computational Neuroscience***Same as Biol 5641.***BME 566. Cardiac Electrophysiology****BME 567. Cardiovascular Engineering II: Cardiac Mechanics****BME 568. Cardiovascular Dynamics****BME 572. Biological Neural Computation***Same as Biol 5657, BME 472.***BME 573. Special Topics: Applied Bioelectricity****BME 575. Special Topics: Molecular Basis of Bioelectrical Excitation****BME 586. Advanced Cognitive, Computational, and Systems Neuroscience***Same as Biol 5619.***BME 590K. Nonlinear Elasticity in Biomechanics****BME 590L. Special Topics: Engineering Aspects of Biotechnology***Same as ChE 590L.***BME 590X. Special Topics: Design of Artificial Organs****BME 5911. Cardiovascular Biophysics Journal Club***Same as Biol 5468, Physics 591.***BME 599. Master's Research****BME 600. Doctoral Research****BME 614. Mechanics of Continua***Same as MAE 614.*

The Biomechanics Track is intended to provide students with a foundation of knowledge pertinent to the response of biological and nonbiological materials and structures to mechanical forces. This track is appropriate for students interested in, for example, the mechanical aspects of tissue engineering, physiologic flows and transport phenomena, cardiac mechanics, bone and joint mechanics, human body dynamics, and artificial organs, tissues, and joints. The professional core for this track consists of three courses.

In addition, three more courses must be elected from the list below. In the sample curriculum that follows, these electives are labeled "Track Elective."

BME 467/567. Cardiovascular Engineering II: Cardiac Mechanics

BME 468/568. Cardiovascular Dynamics

BME 458A/558. Biological Transport Phenomena

BME 590Z. Orthopaedic Biomechanics—Bones and Joints

MAE 416A. Advanced Mechanics of Deformable Bodies

MAE 417. Dynamic Response of Physical Systems, or

MAE 522. Theory of Vibrations

MAE 431. Control Systems I

MAE 503. Numerical Methods in Applied Mechanics

MAE 546. Finite Element Analysis

ChE 368. Transport Phenomena II

or

MAE 370. Fluid Mechanics

Sample Curriculum: BS-BME¹—Biomechanics Track

	Units	
	Fall	Spring
First Year		
Introduction to Biomedical Engineering (BME 140).....	3	—
General Chemistry I, II (Chem 111A, 112A).....	3	3
General Chemistry Laboratory (Chem 151, 152).....	2	2
General Physics I, II (Physics 117A, 118A).....	4	4
Calculus II, III (Math 132, 233).....	3	4
Principles of Biology I (Biol 2960).....	—	4
	15	17
Second Year		
From Concept to Market (BME 201).....	3	—
Biomechanics (BME 240).....	—	3
Differential Equations (Math 217).....	4	—
Engineering and Scientific Computing (CSE 200)		
or		
Computer Science I (CSE 131).....	—	3–4
Introduction to Electrical Networks (ESE 230).....	3	—
Principles of Biology II (Biol 2970).....	4	—
Introductory Physiology for Engineers (Biol 3059)		
or		
Principles of Biology III (Biol 3050).....	—	2–4
Engineering Mathematics (ESE 317).....	—	4
Humanities/social sciences electives.....	3	3
	17	15–18
Third Year		
Quantitative Physiology I, II (BME 301A, 301B).....	4	3
Technical Writing (EP 310).....	3	—
Engineering Electromagnetics Principles (ESE 330).....	—	3
Engineering Mechanics II (MAE 232).....	3	—
Thermodynamics (ChE/MAE 320 or MAE 320A).....	3	—
Transport Phenomena, Biological Processes (ChE 366).....	—	3
Probability and Statistics for Engineering (ESE 326).....	—	3
Track Elective I.....	—	3
Humanities/social sciences elective.....	3	—
	16	15
Fourth Year		
Intermediate Biomechanics (BME 459A/559).....	3	—
Track Elective II.....	3	—
Track Elective III.....	—	3
Biomedical Engineering Design (BME 401).....	3	—
Engineering/science electives ²	3	6
Humanities/social sciences electives.....	3	6
	15	15
Total Units	125–128	

¹All students who wish to earn the professional degree must complete the Common Studies program. This includes English composition, which may be satisfied by examination or a minimum grade of C+ in E Comp 100.

²Suggested courses listed in Appendix. The professional curriculum must encompass the equivalent of one and one-half years (approximately 3 semesters or 45–48 credits) of engineering topics, to include engineering sciences and engineering design appropriate to biomedical engineering.

Professional Core: Biomechanics

	Units
Engineering Science	
Engineering Mechanics II (ME 232).....	3
Thermodynamics (ChE/MAE 320 or MAE 320A).....	3
Biomedical Engineering	
Intermediate Biomechanics (BME 459A/559)	
or Orthopaedic Biomechanics — Cartilage/Tendon (BME 464/564)	
or Orthopaedic Biomechanics — Bones/Joints (BME 490Z/590Z).....	3
Total, Professional Core	9

The Bioelectrical Systems Track trains students to understand and to undertake research and design at the interface of biological systems and electrical engineering. Students learn how to investigate electrical phenomena in biological systems, design novel medical instrumentation, and process biologically derived signals. It is an ideal program for students seeking a career in the medical device industry or desiring a strong background for continued studies in neural engineering. The professional core for this track consists of four courses.

In addition, two more courses must be elected from the list below. In the sample curriculum that follows, these electives are labeled "Track Elective."

BME 471. Bioelectric Phenomena**BME 472. Biological Neural Computation****BME 433. Biomedical Signal Processing****BME 504. Optical Bioelectric Imaging****BME 571. Applied Bioelectricity****BME 575. Molecular Basis of Bioelectric Excitation****Sample Curriculum: BS-BME¹—Bioelectrical Systems Track**

	Units	
	Fall	Spring
First Year		
Introduction to Biomedical Engineering (BME 140).....	3	—
General Chemistry I, II (Chem 111A, 112A).....	3	3
General Chemistry Laboratory (Chem 151, 152).....	2	2
General Physics I, II (Physics 117A, 118A).....	4	4
Calculus II, III (Math 132, 233).....	3	4
Principles of Biology I (Biol 2960).....	—	4
	<u>15</u>	<u>17</u>
Second Year		
From Concept to Market (BME 201).....	3	—
Biomechanics (BME 240).....	—	3
Differential Equations (Math 217).....	4	—
Engineering and Scientific Computing (CSE 200).....		
<i>or</i>		
Computer Science I (CSE 131).....	—	3–4
Introduction to Electrical Networks (ESE 230).....	3	—
Principles of Biology II (Biol 2970).....	4	—
Introductory Physiology for Engineers (Biol 3059).....		
<i>or</i>		
Principles of Biology III (Biol 3050).....	—	2–4
Engineering Mathematics (ESE 317).....	—	4
Humanities/social sciences electives.....	3	3
	<u>17</u>	<u>15–18</u>
Third Year		
Quantitative Physiology I, II (BME 301A, 301B).....	4	3
Technical Writing (EP 310).....	3	—
Transport Phenomena I (ChE 367).....	3	—
Introduction to Electronic Circuits (ESE 232).....	3	—
Engineering Electromagnetics Principles (ESE 330).....	—	3
Signals and Systems (ESE 351).....	—	3
Thermodynamics (ChE/MAE 320 or MAE 320A).....	3	—
Probability and Statistics for Engineering (ESE 326).....	—	3
Humanities/social sciences elective.....	—	3
	<u>16</u>	<u>15</u>
Fourth Year		
Biomedical Engineering Design (BME 401).....	3	—
Control Systems (ESE 441).....	3	—
Track Elective I.....	3	—
Track Elective II.....	—	3
Engineering/science electives ²	3	6
Humanities/social sciences electives.....	3	6
	<u>15</u>	<u>15</u>
Total Units		125–128

¹ All students who wish to earn the professional degree must complete the Common Studies program. This includes English composition, which may be satisfied by examination or a minimum grade of C+ in E Comp 100 or 199.

² Suggested courses listed in Appendix. The professional curriculum must encompass the equivalent of one and one-half years (approximately 3 semesters or 45–48 credits) of engineering topics, to include engineering sciences and engineering design appropriate to biomedical engineering.

Professional Core: Bioelectrical Systems**Engineering Science**

	Units
Introduction to Electronic Circuits (ESE 232).....	3
Signals and Systems (ESE 351).....	3
Control Systems (ESE 441).....	3
Thermodynamics (ChE/MAE 320 or MAE 320A).....	3
Total, Professional Core	12

The Biomolecular Systems Track focuses on the application of engineering principles in molecular and structural biology. The blend of courses allows prospective students to train in one of three thrust areas, namely, Structural Biology, Systems Biology, and Computational Biology. The professional core for this track consists of four courses.

In addition, two BME courses and one free elective must be elected from the list below. In the sample curriculum that follows, these electives are labeled “Track Elective.”

Biol 451. General Biochemistry (requires Chem 252)

BME 546. Algorithms for Computational Biology

Chem 401. Physical Chemistry I

Chem 453. Bioorganic Chemistry

CSE 405A/ESE411. Numerical Methods

BME 540. Modeling Biomolecular Systems II

BME 458A/558. Biological Transport

ChE 351. Engineering Analysis of Chemical Systems

Chem 520. Nucleic Acid Chemistry

Sample Curriculum: BS-BME¹—Biomolecular Systems Track

	Units	
	Fall	Spring
First Year		
Introduction to Biomedical Engineering (BME 140).....	3	—
General Chemistry I, II (Chem 111A, 112A).....	3	3
General Chemistry Laboratory (Chem 151, 152).....	2	2
General Physics I, II (Physics 117A, 118A).....	4	4
Calculus II, III (Math 132, 233).....	3	4
Principles of Biology I (Biol 2960).....	—	4
	<u>15</u>	<u>17</u>
Second Year		
From Concept to Market (BME 201).....	3	—
Biomechanics (BME 240).....	—	3
Differential Equations (Math 217).....	4	—
Engineering and Scientific Computing (CSE 200)		
<i>or</i>		
Computer Science I (CSE 131).....	—	3–4
Introduction to Electrical Networks (ESE 230).....	3	—
Principles of Biology II (Biol 2970).....	4	—
Introductory Physiology for Engineers (Biol 3059)		
<i>or</i>		
Principles of Biology III (Biol 3050).....	—	2–4
Engineering Mathematics (ESE 317).....	—	4
Humanities/social sciences electives.....	3	3
	<u>17</u>	<u>15–18</u>
Third Year		
Quantitative Physiology I, II (BME 301A, 301B).....	4	3
Organic Chemistry I (Chem 251).....	3	—
Technical Writing (EP 310).....	3	—
Engineering Electromagnetics Principles (ESE 330).....	—	3
Thermodynamics (ChE 320).....	3	—
Probability and Statistics for Engineering (ESE 326).....	—	3
Humanities/social sciences elective.....	—	3
Engineering/science elective ²	3	—
Track Elective 1.....	—	3
	<u>16</u>	<u>15</u>
Fourth Year		
Biomedical Engineering Design (BME 401).....	3	—
Transport Phenomena I (ChE 367).....	3	—
Principles of Protein Structure (BME 461/561).....	3	—
Protein Function and Interactions (BME 462/562).....	—	3
Track Elective II/Track Elective III.....	3	3
Engineering/science elective ²	—	3
Humanities/social sciences electives.....	3	6
	<u>15</u>	<u>15</u>
Total Units		125–128

¹All students who wish to earn the professional degree must complete the Common Studies program. This includes English composition, which may be satisfied by examination or a minimum grade of C+ in E Comp 100 or 199.

²Suggested courses listed in Appendix. The professional curriculum must encompass the equivalent of one and one-half years (approximately 3 semesters or 45–48 credits) of engineering topics, to include engineering sciences and engineering design appropriate to biomedical engineering.

Professional Core: Biomolecular Systems

	Units
Chemistry	
Organic Chemistry I (Chem 251).....	3
Engineering Science	
Thermodynamics (ChE 320).....	3
Biomedical Engineering	
Principles of Protein Structure (BME 461/561).....	3
Protein Function and Interactions (BME 462/562).....	3
Total, Professional Core	12

The Biotechnology Track focuses on the study of chemical phenomena that govern interactions among molecules in biological systems. The track is appropriate for those students with interests in tissue engineering, drug delivery, biomaterials, gene therapy, protein engineering, and metabolic engineering. Students in this track follow a chemical engineering core curriculum, including thermodynamics, kinetics, and transport phenomena, thereby preparing themselves for a career in biotechnology, or the medical device industry. The professional core for this track consists of five courses.

In addition, one more course must be elected from the list below. In the sample curriculum that follows, this elective is labeled "Track Elective."

BME 523. Biomaterials Science

BME 420/520. Engineering Aspects of Biotechnology

BME 590S. Tissue Engineering

BME 590X. Design of Artificial Organs

Sample Curriculum: BS-BME¹—Biotechnology Track

	Units	
	Fall	Spring
First Year		
Introduction to Biomedical Engineering (BME 140).....	3	—
General Chemistry I, II (Chem 111A, 112A).....	3	3
General Chemistry Laboratory (Chem 151, 152).....	2	2
General Physics I, II (Physics 117A, 118A).....	4	4
Calculus II, III (Math 132, 233).....	3	4
Principles of Biology I (Biol 2960).....	—	4
	15	17
Second Year		
From Concept to Market (BME 201).....	3	—
Biomechanics (BME 240).....	—	3
Differential Equations (Math 217).....	4	—
Engineering and Scientific Computing (CSE 200)		
<i>or</i>		
Computer Science I (CSE 131).....	—	3–4
Introduction to Electrical Networks (ESE 230).....	3	—
Principles of Biology II (Biol 2970).....	4	—
Introductory Physiology for Engineers (Biol 3059)		
<i>or</i>		
Principles of Biology III (Biol 3050).....	—	2–4
Engineering Mathematics (ESE 317).....	—	4
Humanities/social sciences elective.....	3	3
	17	15–18
Third Year		
Quantitative Physiology I, II (BME 301A, 301B).....	4	3
Organic Chemistry I (Chem 251).....	3	—
Thermodynamics (ChE 320).....	3	—
Engineering Analysis Chemical Systems (ChE 351).....	3	—
Transport Phenomena I (ChE 366, 367).....	—	3
Technical Writing (EP 310).....	3	—
Probability and Statistics for Engineering (ESE 326).....	—	3
Engineering/science elective ²	—	3
Humanities/social sciences elective.....	—	3
	16	15
Fourth Year		
Biomedical Engineering Design (BME 401).....	3	—
Transport Phenomena II (ChE 368).....	3	—
Chemical Reaction Engineering (ChE 471) or		
Kinetics of Receptor-Mediated Processes (BME 421).....	3	—
Engineering Electromagnetics Principles (ESE 330).....	3	—
Track Elective.....	—	3
Engineering/science electives ²	—	6
Humanities/social sciences electives.....	3	6
	15	15
Total Units	125–128	

¹ All students who wish to earn the professional degree must complete the Common Studies program. This includes English composition, which may be satisfied by examination or a minimum grade of C+ in E Comp 100 or 199.

² Suggested courses listed in Appendix. The professional curriculum must encompass the equivalent of one and one-half years (approximately 3 semesters or 45–48 credits) of engineering topics, to include engineering sciences and engineering design appropriate to biomedical engineering.

Professional Core

Chemistry

Organic Chemistry I (Chem 251)..... 3

Engineering Science

Transport Phenomena II (ChE 368)..... 3

Thermodynamics (ChE 320)..... 3

Engineering Analysis Chemical Systems (ChE 351)..... 3

Chemical Reaction Engineering (ChE 471) or Kinetics of Receptor-Mediated Processes (BME 421)..... 3

Total, Professional Core..... **15**

Students wishing to obtain the B.S.-B.M.E. degree without a concentration must complete the basic core (page 330). To complete the balance of units necessary to attain the minimum of 120 units required for the BS by the School of Engineering, the students are free to take any engineering courses for which they have the necessary prerequisites, including available 500-level BME courses. However, it is important to recall that, in order to satisfy engineering accreditation requirements, the professional curriculum must encompass the equivalent of one and one-half years (approximately 3 semesters or 45 credits) of engineering topics, to include engineering sciences and engineering design appropriate to biomedical engineering. Consequently, unless the student enters the program with advanced placement, he or she is likely to need more than the 120-unit minimum to satisfy the engineering topics requirement.

Sample Curriculum: BS-BME¹—General Curriculum (No Track)

	Units	
	Fall	Spring
First Year		
Introduction to Biomedical Engineering (BME 140).....	3	—
General Chemistry I, II (Chem 111A, 112A).....	3	3
General Chemistry Laboratory (Chem 151, 152).....	2	2
General Physics I, II (Physics 117A, 118A).....	4	4
Calculus II, III (Math 132, 233).....	3	4
Principles of Biology I (Biol 2960).....	—	4
	<u>15</u>	<u>17</u>
Second Year		
From Concept to Market (BME 201).....	3	—
Biomechanics (BME 240).....	—	3
Differential Equations (Math 217).....	4	—
Engineering and Scientific Computing (CSE 200)		
<i>or</i>		
Computer Science I (CSE 131).....	—	3–4
Introduction to Electrical Networks (ESE 230).....	3	—
Principles of Biology II (Biol 2970).....	4	—
Introductory Physiology for Engineers (Biol 3059)		
<i>or</i>		
Principles of Biology III (Biol 3050).....	—	2–4
Engineering Mathematics (ESE 317).....	—	4
Humanities/social sciences electives.....	<u>3</u>	<u>3</u>
	17	15–18
Third Year		
Quantitative Physiology I, II (BME 301A, 301B).....	4	3
Technical Writing (EP 310).....	3	—
Engineering Electromagnetics Principles (ESE 330).....		
<i>or</i>		
Signals and Systems (ESE 351).....	—	3
Thermodynamics (ChE 320 or MAE 320A).....	3	—
Transport Phenomena I (ChE 366/367).....	—	3
Probability and Statistics for Engineering (ESE 326).....	—	3
Engineering/science elective ²	3	—
Humanities/social sciences electives.....	<u>3</u>	<u>3</u>
	16	15
Fourth Year		
Biomedical Engineering Design (BME 401).....	3	—
Engineering/science electives ²	9	12
Humanities/social sciences electives.....	<u>3</u>	<u>3</u>
	15	15
Total Units		125–128

¹ All students who wish to earn the professional degree must complete the entire professional core and the Common Studies program. This includes English composition which may be satisfied by examination or a minimum grade of C+ in E Comp 100 or 199.

² Suggested courses listed in Appendix. The professional curriculum must encompass the equivalent of one and one-half years (approximately 3 semesters or 45–48 credits) of engineering topics, to include engineering sciences and engineering design appropriate to biomedical engineering, plus three additional units of engineering laboratory experience (beyond BME 301A, 301B).

Chemical Engineering

Chair

Milorad P. Duduković (1974)
Laura and William Jens Professor
Ph.D., Illinois Institute of Technology, 1972
Chemical reaction engineering, multiphase reactors, visualization of multiphase flows, tracer methods, environmentally benign processing

Endowed Professors

Pratim Biswas (2000)
Stifel and Quinette Jens Professor
Ph.D., California Institute of Technology, 1985
Aerosol science and engineering, air quality and pollution control, nanotechnology, environmentally benign processing

Bamin Khomami (1987)
Francis F. Ahmann Professor
Ph.D., University of Illinois, 1987
Transport properties of complex fluids, polymer physics, biomolecular physics, processing science of micro- and nanostructured materials, and multiscale modeling and simulation

Senior Professors

James M. McKelvey (1957)
Ph.D., Washington University, 1950
Thermodynamics, polymer processing, rheology, polymer technology

Rodolphe L. Motard (1978)
D.Sc., Carnegie Mellon University, 1952
Process engineering

Stanley I. Proctor (2005)
D.Sc., Washington University, 1972
Chemical reaction engineering, technology management

Professors

Muthanna Al-Dahhan (1994)
D.Sc., Washington University, 1993
Reaction engineering, multiphase reactors, bioprocessing

P. A. Ramachandran (1984)
Ph.D., University of Bombay, 1971
Chemical reaction engineering, applied mathematics, process modeling, waste minimization, environmentally benign processing

Associate Professors

John T. Gleaves (1988)
Ph.D., University of Illinois, 1975
Heterogeneous catalysis, particle chemistry

Radhakrishna Sureshkumar (1997)
Ph.D., University of Delaware, 1996
Complex fluids dynamics, nanostructured materials, multiscale modeling and simulation

Jay R. Turner (1994)
D.Sc., Washington University, 1993
Environmental engineering; air quality measurements, characterization and policy; aerosol science and engineering

Assistant Professor

Largus T. Angenent (2002)
Ph.D., Iowa State University, 1998
Molecular tools for microbial ecology, anaerobic treatment of water and wastes, bioaerosols, bioreactor design and operation

Affiliate Professors

Flake Campbell (2005)
M.S., University of Missouri–Rolla, 1972
Composites processing, manufacturing technology

Charles N. Carpenter (1995)
Ph.D., Ohio State University, 1973
Process design

Gerald T. Coyle (1994)
Ph.D., Drexel University, 1989
Environmental engineering

Martha Evans (1994)
Ph.D., University of Wisconsin, 1985
Surface science, catalysis, analytical methods, and bioconversion

Robert Heider (2003)
M.M.E., Washington University, 1996
Process control and process design

Gregory K. McMillan (2002)
M.S., University of Missouri–Rolla, 1977
Process control

Patrick L. Mills (1995)
D.Sc., Washington University, 1980
Chemical reaction engineering

Nicholas J. Nissing (2002)
B.S., Washington University, 1996
Product development and process design

Nathan Ravi (2000)
Ph.D., Virginia Tech, 1980
Cataract, ocular biomaterials

Nathan K. Risk (2000)
M.A., Washington University, 1995
Data analysis and epidemiology

Robin L. Shepard (1997)
D.Sc., Washington University, 1996
Unit operations, safety, materials

Oliver W. Siebert (1995)
B.S., Washington University, 1949
Materials science, corrosion

Terry L. Tolliver (2004)
Ph.D., University of Missouri–Rolla, 1982
Process simulation and control

Research Professor

Grygoriy S. Yablonsky (1999)
Ph.D., Borekov Institute of Catalysis (Russia), 1971
Theory and modeling of heterogeneous catalysis and surface phase transitions

Professors Emeriti

John L. Kardos (1965)
Ph.D., Case Western Reserve University, 1965
Structure-property relations in polymers and reinforced plastics, interface chemistry and physics of composites, processing science of composites

Buford D. Smith (1965)
Ph.D., University of Michigan, 1954
Thermodynamics of liquid mixtures

Curt Thies (1973)
Ph.D., Michigan State University, 1962
Colloid and surface behavior of polymers, microencapsulation, polymer mixtures

Joint Faculty

Richard L. Axelbaum, Ph.D.
(Mechanical and Aerospace Engineering)

Da-Ren Chen, Ph.D.
(Mechanical and Aerospace Engineering)

Jianmin Cui, Ph.D.
(Biomedical Engineering)

Donald Elbert, Ph.D.
(Biomedical Engineering)

Daniel Giammar, Ph.D.
(Civil Engineering)

Shelly Sakiyama-Elbert, Ph.D.
(Biomedical Engineering)

David W. Sept, Ph.D.
(Biomedical Engineering)

Jin-Yu Shao, Ph.D.
(Biomedical Engineering)

About Chemical Engineering

Chemical engineers are involved in the transfer of scientific discoveries to modern technologies and novel products that benefit society and minimize the impact on the environment. They deal with multiscale aspects of generating clean energy, producing novel and superior materials, and utilizing the biological revolution to manufacture new products. They are involved in the development and manufacture of consumer products, as well as in design, operation, and control of processes in a variety of industries (e.g., petroleum, petrochemical, chemical, consumer products, food, feed, pharmaceuticals). Their broad training in basic sciences (e.g., chemistry, physics, biology, mathematics) coupled with a strong foundation in chemical engineering principles (e.g., thermodynamics, mass and energy balances, transport phenomena, kinetics, separations, reaction engineering, control, product development, and process design) makes them invaluable team members and leaders in any engineering enterprise. It also prepares them well for graduate studies in biochemical, biomedical, chemical, environmental, and materials engineering. In addition, the B.S. degree in chemical engineering is a great starting point for pursuing a degree in business, law, or medicine.

The curriculum is planned so as to provide students with a strong background in basic chemical engineering concepts, while allowing individual latitude to emphasize study in a specialized area. The faculty devotes a considerable amount of time to individual advising. A contemporary approach to chemical engineering is focused on the multiscale aspects of the discipline, consistent with modern developments in computer-supported problem solving. Molecular-level understanding is utilized in product development and process design, which in turn are

evaluated in terms of their impact on the environment and society according to the principles of green engineering.

Mission Statement

The mission of the department is to teach chemical and biochemical principles and their application in an inspiring learning environment and to prepare students for engineering careers by developing the skills of critical thinking, analytical abilities, and communication proficiency and by instilling a sense of professional ethics and societal responsibility.

Program Objectives

Students will be able to obtain entry-level positions as chemical engineers in process and product manufacturing, process development, and design companies. Students will have a good understanding of basic chemical engineering principles and be able to apply these tools for process analysis, economic evaluation, and environmental and societal impacts of the industry; they also will be able to provide guidance in decision making in these activities. Students should be able to apply process control tools in manufacturing, assist in plant operation, and provide some managerial role in their chosen industry. Some students will continue with graduate studies. These students will also have a good understanding of fundamentals, problem analysis, and computation skills and will be able to apply these successfully to their chosen research area.

Advising

The department takes pride in the mentoring of undergraduate students. Each student who declares chemical engineering as a (potential) major is assigned an academic adviser from the tenure-track ChE faculty. Typically, the same adviser follows the student's academic progress and serves as a mentor from the freshman year through graduation.

Bachelor of Science Degree in Chemical Engineering

This ABET (Accreditation Board for Engineering and Technology)-accredited B.S. ChE degree requires satisfactory completion of a minimum of 129 units as indicated in Table 1. The program of study consists of 39 units of basic sciences (i.e., physics, biology, chemistry, and mathematics), 12 units of engineering sciences, 39 units of core chemical engineering courses, and 21 units of humanities, social sciences, and technical writing. The remaining 18 units are chosen from the approved list of engineering (or science) electives (the list is available through the ChE department office). A sample year-by-year ChE curriculum is shown in Table 2.

The objectives of our program are: (1) to impart a thorough grounding in science; (2) to impart working knowledge of engineering topics essential to the chemical engineering profession, such as material and energy balances, thermodynamics of physical and chemical equilibria, principles of momentum, mass and heat transfer, continuous and

stage separations, chemical kinetics, reaction engineering, process dynamics and control; (3) to expose students to open-ended design-type interdisciplinary problems throughout the curriculum and have students demonstrate design proficiency in a capstone design project, oriented either toward product development or process synthesis, that also encompasses safety and environmental considerations; (4) to implement the use of computers and information technology throughout the curriculum; and (5) to expose the students to modern instrumentation and experimentation and have them demonstrate their knowledge of engineering statistics and of physical principles in designing, implementing, executing, and interpreting laboratory experiments. The above technical expertise, coupled with writing and communication skills, a firm grounding in ethical principles, as well as other social sciences and humanities gained by additional course work and seminars, leads to the profile of a modern chemical engineer that our curriculum strives to create.

The curriculum is designed to provide opportunities for students to explore areas of interest within chemical engineering. Students in collaboration with their advisers design a course of study (subject to department faculty approval) for the 18 units of chemical engineering electives. The plan is developed as early as possible and shall be approved by the department faculty by no later than the spring semester of the sophomore (second) year. The department has prequalified courses of study in four area concentrations—bioprocessing, environmental, materials, and process and product development; students choosing to follow the curriculum developed for each of these areas do not need additional department approval.

In addition to the accredited B.S. degree in chemical engineering, another choice is to pursue the proposed course of study leading to the B.S. degree in Applied Science Major in Chemical Engineering, which is outlined below.

Selection of Engineering Electives

The courses of study listed below for areas of concentration in bioprocessing, environmental engineering, materials engineering, and product and process development and design have been prequalified by the department faculty and do not need additional approval.

1. Bioprocessing

The six elective courses should be chosen as follows:

ChE 453. Bioprocess Engineering I: Fundamentals and Applications

ChE 455. Bioprocess Engineering II: Biological Processes

ChE 433. Digital Process Control Lab

ChE 450A. Engineering and Microbiology Techniques (or equivalent)

Two additional electives from the approved list.

2. Environmental Engineering

The six elective courses should be chosen as follows (this also fulfills the requirements for the Minor in Environmental Engineering Science).

ChE 443. Environmental Chemistry

ChE 408A. Environmental Engineering Laboratory

ChE 345. Pollutant Abatement and Waste Minimization

ChE 539. Industrial Ecology

Two additional electives from the approved list.

3. Materials Science

The six elective courses should be chosen as follows:

ChE 476. Engineering Properties of Materials

ChE 657, 658, or 659. Materials Laboratory

Four additional electives from the approved list.

4. Product Development and Process Design

The six elective courses should be chosen as follows:

ChE 479. Chemical Process Safety

ChE 433. Digital Process Control Laboratory

ChE 551. Data Analysis and Experimental Design

ChE 539. Industrial Ecology

Two additional electives from the approved list.

The list of electives in all areas will be posted on the department Web site and will vary periodically as the department and the School of Engineering add new courses.

Double Majors, Minor, Premedical Program

Some students may be able to take more than the 129-unit minimum during a four-year program, especially if they have advanced-placement units. This permits the choice of additional free electives from such areas as biology, computer science, the social sciences, or other engineering courses. It also provides an opportunity to pursue a double major. The rules for combining majors in engineering and multiple majors involving other university divisions are described on page 318. Particularly popular with chemical engineering students is a double major with biomedical engineering or a combined degree program in process control systems described on page 385.

Traditionally, the undergraduate chemical engineering degrees, both the accredited degree and the applied science option, have been popular with students interested in medicine since the curriculum automatically satisfies most of the premed requirements.

The additional needed courses are taken as electives.

A minor in environmental engineering science can be obtained with no additional units by careful selection of engineering electives (e.g., completing the aforementioned course of study in environmental engineering). A minor in computer science is also possible.

Bachelor of Science Degree with the Applied Science Major

This degree serves students who like a more flexible curriculum yet want to be exposed to key chemical engineering principles. To pursue the applied science major in chemical engineering, at least 18 units of upper-level (300 or higher) chemical engineering core courses must be taken.

Minor in Environmental Engineering Science

The Department of Chemical Engineering, along with the departments of Civil Engineering and Mechanical Engineering, sponsors an undergraduate minor in environmental engineering science. This 18-unit program prepares the student to seek an entry-level position as an environmental engineer, scientist, or analyst. The minor also provides a solid foundation for undertaking graduate study in environmental engineering. A detailed description and the requirements for this minor are listed on pages 374–375.

Graduate Programs

Opportunities for graduate studies and research in chemical engineering are available in a number of areas including aerosol science and technology, catalysis, chemical reaction engineering, transport of pollutants, environmentally benign catalytic processing, complex fluids, materials synthesis and composites, among others. A student interested in research is encouraged to discuss opportunities for active involvement early on with his/her academic adviser.

Undergraduate Courses

ChE 146A. Modern Technological Challenges

Key technical issues that face our society and some of the emerging technologies that hold promise for the future are examined and discussed. Relationship to chemical engineering principles is outlined. Credit 2 units.

ChE 240. Independent Work

Prerequisite: sophomore standing. Credit variable, maximum 9 units.

ChE 265A. Intro to Computing and Computer Applications

Basic architectural components of computers and networks and their functions in a state-of-the-art client-server computing environment; introduction to the disciplined development of computer programs and problem solving; the development and importance of numerical methods in analyzing solutions to problems when traditional tools of analysis do not apply. Using the C++ or FORTRAN language and software tools and libraries, students design and implement a variety of programs covering a broad spectrum of nontrivial computer applications. Use of high-level tools for calculus/algebraic analysis. Corequisite: Math

217. Credit 3 units.

ChE 265B. Numerical Methods and Modeling for Chemical and Biological Systems

Modeling and numerical methods with applications in solving engineering and scientific problems encountered in both chemical and biological systems in the areas of transport (mass, heat, momentum), kinetics and reaction engineering, thermodynamics, separations, product and process design. MATLAB and spreadsheet (Excel) are used as primary tools. Introduction to MATLAB linkage with Excel and other numerical subprograms and computing libraries written in higher-level programming languages is also demonstrated. Corequisite: Math 217. Credit 3 units.

ChE 275. Modeling and Computing in Chemical Engineering

Modeling and numerical methods to solve engineering, design, and scientific problems encountered in thermodynamics, transport phenomena, separation processes, and reaction kinetics. Use of conservation principles in model building, dimensionless representation of problems, multi-scale modeling, and transient modeling. Numerical methods for solution of common problems in linear algebra, regression analysis, nonlinear algebraic equations, ordinary and partial differential equations, and boundary value problems. Use of MATLAB as a computational tool. Brief introduc-

tion to statistical techniques and Monte-Carlo methods. Use of various MATLAB toolboxes. Illustrative application examples. Prerequisite: Familiarization with MATLAB and spreadsheet. Credit 3 units.

ChE 320. Thermodynamics

Classical thermodynamics. First and second laws, properties of pure substances, mixtures, and solutions. Phase equilibria, chemical reaction equilibria. Prerequisites: Chem 111A, Math 132, and Physics 117A. Credit 3 units.

ChE 325. Materials Science

Chemistry and physics of engineering materials. Emphasis on atomic and molecular interpretation of physical and chemical properties, the relationships between physical and chemical properties, and performance of an engineering material. Prerequisite: Math 217, Chem 111A. Credit 3 units.

ChE 344. Air Pollution

Same as Env 344, MAE 344.

Generation, transport, and fate of gaseous and particulate air pollutants. Meteorology and its coupling to air quality. Photochemical smog formation, visibility impairment, pollutant dispersion modeling, and source apportionment. Prerequisite: ChE 443 or permission of instructor. Credit 3 units.

TABLE I: Outline of ChE Core Curriculum

Basic Sciences (Biology, Chemistry, Mathematics, and Physics)

General Chemistry (Chem 111A, 112A).....	6
General Chemistry Laboratory (Chem 151, 152).....	4
General Physics (Physics 117A, 118A or Physics 197, 198).....	8
Organic Chemistry Laboratory (Chem 251, Chem 257).....	5
Fundamentals of Biology I (Biol 2960).....	4
Accelerated Calculus (Math 132, 132L, 233).....	8
Differential Equations (Math 217).....	4
	<hr/> 39

Engineering Sciences

Engineering Seminar (EN 120).....	1
Engineering Mathematics (ESE 317).....	4
Probability and Statistics (ESE 326).....	3
Introduction to Computing Tools: MATLAB Skills (CSE 100B).....	1
Modeling and Computing in Chemical Engineering (ChE 275).....	3
	<hr/> 12

Chemical Engineering Core Courses

Modern Technological Challenges (ChE 146A).....	2
Analysis of Chemical Engineering Systems (ChE 351).....	3
Thermodynamics (ChE 320).....	3
Materials Science (ChE 325).....	3
Molecular Transport Processes (ChE 359).....	3
Transport I, II (ChE 367 or 366, 368).....	6
Mass Transfer Operations (ChE 357).....	3
Process Dynamics and Control (ChE 462).....	3
Reaction Engineering (ChE 471).....	3
Chemical Engineering Laboratory (ChE 473A).....	4
New Product and Process Development (ChE 450).....	3
Process and Product Design (ChE 478A).....	3
	<hr/> 39

Humanities and Social Sciences and Communications

Humanities and Social Sciences.....	18
Technical Writing (EP 310).....	3
	<hr/> 21

Total ChE Core

111

Engineering Electives (from approved list)

18 units, student-devised and faculty-approved course of study.....	18
Total	<hr/> 129

TABLE 2: Sample ChE Curriculum

Year 01—Fall	<i>Units</i>	Year 01—Spring	<i>Units</i>
Chem 111A General Chemistry I.....	3	Chem 112A General Chemistry II	3
Chem 151 General Chemistry Laboratory I.....	2	Chem 152 General Chemistry Laboratory II	2
Physics 117A General Physics I ¹	4	Physics 118A General Physics II ¹	4
Math 132, 132L Accelerated Calculus I.....	4	Math 233 Accelerated Calculus II	4
ChE 146A Modern Technological Challenges	2	Humanities/social sciences elective	3
EN 120 Engineering Seminar.....	1		16
	<u>16</u>		
Year 02—Fall		Year 02—Spring	
ChE 320 Thermodynamics	3	ChE 275 Modeling and Computing in Chemical Engineering.....	3
ChE 351 Engineering Analysis of Chemical Systems	3	ChE 359 Molecular Transport Properties	3
CSE 100B Introduction to Computing Tools: MATLAB.....	1	Biol 2960 Fundamentals of Biology I	4
Chem 251 Organic Chemistry I	3	ESE 317 Engineering Mathematics	4
Humanities/social sciences elective	3	Chem 257 Organic Chemistry Laboratory I.....	2
Math 217 Differential Equations	4		16
	<u>17</u>		
Year 03—Fall		Year 03—Spring	
ChE 325 Materials Science.....	3	ChE 357 Mass Transfer Operations	3
ChE 367 Transport Phenomena I (or ChE 366).....	3	ChE 368 Transport II	3
ChE elective	3	ChE 450 New Product and Process Development	3
ESE 326 Probability and Statistics for Engineering.....	3	ChE elective	3
Humanities/social sciences electives	6	EP 310 Technical Writing.....	3
	<u>18</u>		15
Year 04—Fall		Year 04—Spring	
ChE 462 Chemical Process Dynamics and Control.....	3	ChE 478A Process and Product Design	3
ChE 471 Chemical Reaction Engineering	3	ChE elective	3
ChE 473A Chemical Engineering Laboratory	4	ChE elective	3
ChE elective	3	ChE elective	3
Humanities/social sciences elective	3	Humanities/social sciences elective	3
	<u>16</u>		15

¹ Advanced physics sequence Physics 197 and 198 is encouraged instead of Physics 117A–118A.**ChE Curriculum for Dual-Degree Students**

Year 01—Fall	<i>Units</i>	Year 01—Spring	<i>Units</i>
ChE 320 Thermodynamics	3	ChE 275 Modeling and Computing in Chemical Engineering.....	3
ChE 325 Materials Science.....	3	ChE 357 Mass Transfer Operations	3
ChE 351 Engineering Analysis of Chemical Systems	3	ChE 367 or ChE 366 Transport Phenomena I	3
ESE 317 Engineering Mathematics	4	ChE 450 New Product and Process Development	3
ESE 326 Probability and Statistics for Engineering	3	EP 310 Technical Writing.....	3
	<u>16</u>		15
Year 02—Fall		Year 02—Spring	
ChE 368 Transport Phenomena II	3	ChE 478A Process and Product Design	3
ChE 462 Chemical Process Dynamics and Control.....	3	ChE elective	3
ChE 471 Chemical Reaction Engineering	3	ChE elective	3
ChE 473A Chemical Engineering Laboratory	4	ChE elective	3
ChE elective	3	ChE elective	3
	<u>16</u>		15

ChE 345. Pollution Abatement and Waste Minimization

Same as Env 345, EnSt 345.

Strategies and methods for waste minimization and pollutant emission reduction. Hierarchical design strategies. Air pollution abatement: principles and technology. Waste water treatment: principles and technology. Design of mass exchange networks for waste reduction. Design of membrane based systems, adsorption and absorption equipment. Prerequisite: ChE 320 or permission of instructor. Credit 3 units.

ChE 351. Engineering Analysis of Chemical Systems

Same as Env 351.

Introduction to the use of mathematics and methods of engineering in analysis of chemical and physical processes. Use of conservation balances and basic rate laws to describe processes with and without chemical reaction in both transient and steady state conditions. Prerequisites: Chem 112A, Math 233. Corequisites: ChE 320, Math 217. Credit 3 units.

ChE 357. Mass Transfer Operations

Stagewise and continuous mass transfer operations, including distillation, gas absorption, humidification, leaching, liquid extraction, and membrane separations. Prerequisites: Math 217, ChE 351 and ChE 320. Credit 3 units.

ChE 359. Molecular Transport Processes and Chemical Kinetics

Molecular motions, kinetic theory of gases, kinetic theory of dense phases, chemical kinetics. Prerequisite: ChE 320. Credit 3 units.

ChE 366. Transport Phenomena in Biological Processes

Introduction to the key concepts of transport processes, i.e., momentum, heat and mass transfer, and their applications in modeling, analysis, and design of biological processes. Prerequisites: Math 217, ESE 317, ChE 265A and ChE 320 or permission of instructor.

ChE 367. Transport Phenomena I

Same as ChE 366.

Development of pointwise conservation equations for mass, momentum and energy. Application in analysis of physical processes where molecular transport mechanisms are dominant. Prerequisites: ChE 320, ChE 265A, Math 217, ESE 317 or permission of instructor. Credit 3 units.

ChE 368. Transport Phenomena II

Same as Env 368.

Introduction to the concept of boundary layers and transition to turbulence. Application of pointwise mass, momentum, and energy conservation equations in physical processes where convective transport mechanisms play a dominant role. Prerequisites: ChE 366 or 367. Credit 3 units.

ChE 374. Chemical Engineering Laboratory I

Laboratory experiments designed to illustrate the principles of heat, mass, and momentum transport. One laboratory period and one workshop alternating once a week. Prerequisites: ChE 357, 366 or 367. Credit 3 units.

ChE 375. Chemical Analysis Methods in Chemical Engineering

Same as Chem 275.

An introduction to selected chemical analysis methods with chemical engineering applications. Basic theory of spectroscopy and chromatography. Laboratory exercises using: UV/VIS Spectroscopy, Atomic Absorption Spectrometry (AA), Fourier Transform Infrared Spectrometry (FT-IR), Gas Chromatography (GC) solid phase microextraction. One three-hour session per week. Prerequisites: Chem 111A, 112A, 151, and 152; Chem 251 or ChE 443 (corequisites). Credit 2 units.

ChE 400. Independent Study

Prerequisite: junior or senior standing. Credit variable, maximum 9 units.

ChE 408A. Environmental Engineering Lab

Same as Env 508A, Env 408A, MAE 508A, MAE 408A, CE 508A, CE 408A, ChE 508A.

Laboratory experiments to illustrate the application of engineering fundamentals to environmental systems. Applications of experimental design and data analysis principles. Introduction to relevant analytical instrumentation and laboratory techniques. Laboratory work supported by theoretical analysis and modeling as appropriate. Prerequisite: ChE 443 or equivalent and consent of instructor. Credit 3 units.

ChE 431. Control Systems I

Same as ESE 441.

ChE 433. Digital Process Control Laboratory
Same as ESE 449.

Applications of digital control principles to laboratory experiments supported by a networked distributed control system. Lecture material reviews background of real-time programming, data acquisition, process dynamics, and process control. Exercises in data acquisition and feedback control design using simple and advanced control strategies. Experiments in flow, liquid level, temperature, and pressure control. Term project. Prerequisite: ESE/MAE 441 or ChE 462 or equivalent. Credit 3 units.

ChE 438. Environmental Risk Assessment

Same as EnSt 437, Env 537, EP 537.

Risk assessment concepts and their application to environmental analyses such as hazardous waste site evaluation and remediation. Principles of human health and ecological toxicology; exposure assessment; estimation of individual and aggregate risk. Risk assessment in regulatory decision making and standard setting. Prerequisites: Senior or graduate standing, or permission of instructor, and ChE 443 or equivalent. Credit 3 units.

ChE 443. Environmental Chemistry

Same as CE 443, Env 443, EnSt 443.

Introduction to the chemistry of air, water, and soil systems. Emphasis on the application of chemical equilibrium principles to quantitatively describe environmental systems. Chemical basis for processes occurring in the natural environment and industrial pollution control systems. Prerequisite: Chem 112A. Credit 3 units.

ChE 450. New Product and Process Development

An overview of product development, innovative solutions to technical problems, designed experimentation, evaluation of abstract data, product design, and the basics of intellectual property. Prerequisites: Junior standing and Chem 251, ChE 320 or by permission of instructor. Credit 3 units.

ChE 450A. Engineering and Molecular Microbiology Techniques

Same as ChE 550A, Env 450A, Env 550A.

Basic concepts in biology are introduced to provide the basis to understand advanced molecular techniques that target cellular components like DNA, RNA, proteins, etc. Next, techniques, such as polymerase chain reaction (PCR), restriction fragment length polymorphism (RFLP), hybridizations, micro array, are studied and applications of these techniques are shown in engineering research. In addition, a laboratory experiment with fluorescence in-situ hybridization (FISH), and a phylogeny project with 16S rDNA sequences will be performed. Prerequisite: A biology or microbiology course, or equivalent, or permission of instructor. Credit 3 units.

ChE 452. Product Development Methodologies

This course provides an in-depth look at product development and design. Subjects include product

development principles, intellectual property, predictive invention, fractional designed experiments, environmental impact of product design, and multi-scale engineering. A variety of case-studies will be used to illustrate the principles discussed. The final project will include the development of an idea from concept through evaluation with an emphasis on relating the microscopic properties to macroscopic applications. Like ChE 450, this course is expected to have application to a variety of fields including ChE, BME, ME and EE. Prerequisite: ChE 450 or concurrent enrollment in ChE 450 and permission of instructor.

ChE 453. Bioprocess Engineering I: Fundamentals and Applications

The course covers the fundamentals and provides the basic knowledge needed to understand and analyze processes in biotechnology in order to design, develop and operate them efficiently and economically. This knowledge is applied to understand various applications and bioprocesses, such as formation of desirable bio and chemical materials and products, production of bioenergy, food processing and waste treatment. The main objective of the course is to introduce the essential concepts and application of bioprocessing to students of diverse backgrounds. An additional project is required to obtain graduate credit. Prerequisite: Biol 2960 or equivalent or permission of instructor.

ChE 454. Industrial Accidents and Disasters — Case History Studies

Same as ChE 554.

Learn industrial safety by reviewing actual case studies of events and incidents. The course will study major accidents, fires, and explosions, environmental and biological disasters. Learn how much risk is acceptable by applying appropriate hazard and risk assessment analysis. The course will also study accident investigation procedures and methods of forensic engineering. Prerequisites: ChE/MAE 320 or Chem 421 or permission of instructor. Credit 3 units.

ChE 455. Bioprocess Engineering II: Biological Processes

This course considers in detail the fundamental concepts of biological processes that are relevant to fermentation biotechnology and wastewater treatment engineering applications. The students first tackle the stoichiometry and kinetics of biochemical reactions and then use the obtained knowledge to evaluate and model biological processes. After taking this course you should be able to use your basic process understanding, modeling tools, and knowledge gathered from current literature in evaluating existing large-scale biological process plants. An additional project is required to obtain graduate credit. Prerequisites: CE (E64) 325A; or equivalent, or permission of instructor.

ChE 462. Chemical Process Dynamics and Control

A state-of-the-art industrial virtual plant is used for the development of dynamic simulations, selection of instrumentation, statistical analysis of variability, and implementation of process control to improve process operation and efficiency. Prerequisite: Math 217 and ChE 351. Credit 3 units.

ChE 466. Statistical Process Control

Same as ChE 566.

Modeling of process quality. Inferences about process quality, methods, and philosophy of statistical process control. Control charts. Shewart, CUSUM, and EWMA charts. Process capability analysis. Process improvements with designed experiments. Acceptance sampling. Prerequisites: Math 217 or equivalent. Credit 3 units.

ChE 471. Chemical Reaction Engineering

Introduction to chemical reaction engineering principles and applications in process and product development. Evaluation of reaction rates from mechanisms and experimental data, quantification of pertinent transport effects, and application to reactor and product design. Prerequisites: ChE 320, 351, 359, 367. Credit 3 units.

ChE 473. Chemical Engineering Laboratory II

Laboratory experiments illustrate principles of thermodynamics and chemical reaction engineering. One laboratory period and one workshop alternating once a week. Prerequisites: ChE 357, 366 or 367 and 471. Credit 3 units.

ChE 473A. Chemical Engineering Laboratory

Laboratory experiments designed to illustrate the principles of transport (heat, mass, and momentum), thermodynamics, kinetics, and reaction engineering, and separations that apply to chemical and biological systems. Experiments include traditional chemical engineering unit operations and emerging areas such as biotechnology, bioenergy, and materials. One laboratory period and one workshop alternate once a week. Lecture session(s) on process engineering components and process safety are scheduled every week. Prerequisites: ChE 357, 366 or 367 and 471. Credit 4 units.

ChE 476. Engineering Properties of Materials

Same as MAE 476.

A detailed look at the chemical, catalytic, optical, electronic, magnetic, and thermal properties of materials. Topics include the catalytic properties of metals and oxides, corrosion of metals, the interaction of light with solids, luminescence, photoconductivity, lasers, electrical conduction, semiconductors, piezoelectric and ferroelectric materials, diamagnetism, paramagnetism, and ferromagnetism. Prerequisite: ChE 325.

ChE 477. Process Technology

Fundamentals of process development and process equipment design. Cost estimation. Process economics and profitability. Process synthesis. The structure of the chemical industry. Prerequisites: ChE 320, 357 and 366 or 367. Corequisites: ChE 374, 471. Credit 3 units.

ChE 478. Process Design

Application of engineering sciences, computational techniques, and economic principles to analysis and design of chemical and biological systems. A design project or an AIChE national design contest is included. Prerequisite: ChE 477. Credit 3 units.

ChE 478A. Process and Product Design

Application of engineering science and design, fundamentals of process and product development, computational techniques, and economic principles to design of chemical and biological processes and procedures. A design project and/or an AIChE national design contest is included. Prerequisites: ChE 320, 357, 366 or 367, 450. Corequisites: ChE 374, 471. Credit 3 units.

ChE 478B. Honors Design Project for AIChE Student Contest Problem

Application of engineering science and design, fundamentals of process and product development, computational techniques, and economic principles to design of chemical and biological processes and procedures in solving the AIChE national student contest problem. Up to two single and up to two group (2-3 per group) solutions may be chosen for national competition. Concurrent with ChE 478A. Prerequisites: ChE 320, 357, 366 or 367, 450. Corequisites: ChE 374, 471. Credit 1 unit.

ChE 478C. Mentored Process and Product Design and Project(s)

Application of engineering science and design, fundamentals of process and product development, computational techniques, and economic principles to design of chemical and biological processes and procedures. A design project is provided by a local company to last for one to two semesters. Students are chosen by interviews in a previous semester. Spring, summer, and/or fall semesters as an elective course. Prerequisites: ChE 320, 357, 366 or 367, 450. Corequisites: ChE 374, 471. Credit 3 units.

ChE 478D. Introductory Hysys and AspenPlus Workshop

Six or more examples are presented to introduce the student to Hysys and AspenPlus simulations. Some instruction is self teaching at the student's own pace. Offered in the fall semester. Prerequisites: ChE 320, 357, 366 or 367, 450. Credit 1 unit.

ChE 479. Chemical Process Safety

Same as ChE 569, Env 569.

Analysis and management of fire and explosion hazards. Control of human exposure to toxic materials. Codes, standards, and regulations. Transportation and disposal of noxious substances. Analysis of drift from clouds, flares, and stacks. Venting of pressure vessels. Hazard evaluation and safety review of processes. Emergency plans for accidents and disasters. Prerequisite: ChE 320 or Chem 421, or permission of instructor. Credit 3 units.

ChE 480. Principles of Surface and Colloid Science

Interfacial phenomena play key roles in such industrial operations as emulsification, catalysis, and detergency. Introduction to principles of surface science. Particular attention to describing the nature of the liquid/gas, liquid/liquid, solid/solid, and solid/gas interfaces. Specific topics include methods of measuring surface tension, interfacial adsorption, surface area and particle size determinations, dispersion stabilization/flocculation, emulsification, and wetting. Prerequisite: ChE 320 or permission of instructor.

ChE 499. Senior Thesis

Same as Env 499.

Research project to be selected by the student with the permission and recommendation of a faculty supervisor and the approval of the department chair. At conclusion of project, student prepares a report in the form of a senior thesis. Credit variable, maximum 6 units.

ChE 500. Independent Study

Credit variable, maximum 9 units.

ChE 502. Engineering Research Computing

A broad overview of computer technology and its use for problem solving in engineering research. Topics include operating systems, networking, programming and program development, data structures, files, databases, graphics, and engineering applications. A term project is assigned in the second half. Prerequisite: senior or graduate standing. Credit 3 units.

ChE 505. Environmental Reaction Engineering

Same as Env 505.

Reaction engineering principles with applications to environmental systems. Reaction mechanisms, kinetics and rate forms in chemical, biochemical and biological systems. Ideal reactor concepts. Transport effects on reaction rates. Nonideal flow and mixing effects. Quantification of reaction systems in the environment, in pollution abatement and waste treatment and minimization. Prerequisite: ChE/MAE 320; ESE 317, ChE 443 (at least concurrently) or equivalent or permission of instructor. Credit 3 units.

ChE 508A. Environmental Engineering Lab

Same as ChE 408A.

ChE 510. Dynamics of Air Pollution

Same as Env 510, MAE 510, CE 510.

Physicochemical processes governing the dynamics of pollutants from point and non-point sources: generation, transport, and decay. Application of fundamental thermodynamics, mass/heat transfer, and fluid mechanics principles to environmental systems. Prerequisites: ChE/MAE 320, ESE 317, and ChE 443, or equivalent, or permission of instructor. Credit 3 units.

ChE 510A. Dynamics of Air Pollution

Physicochemical processes governing the dynamics of pollutants from point and non-point sources: generation, transport, and decay. Application of fundamental thermodynamics, mass/heat transfer, and fluid mechanics principles to environmental systems. Prerequisites: ChE/MAE 320, ESE 317, and ChE 443, or equivalent, or permission of instructor. Credit 3 units.

ChE 512. Transport Effects in Chemical Reactors

Mixing effects and nonideal flows in reactors and their characterization. Description and quantification of mass and heat transfer interactions with chemical reactions in gas-liquid, gas-solid catalyzed reactions, and gas-solid noncatalytic reactions. Introduction to transport effects on reactor stability and outline of basic approaches to reactor design for heterogeneous systems. Prerequisites: ChE 471, ChE 368, or equivalent Credit 3 units.

ChE 513. Transport Phenomena

Methods of continuum mechanics applied to transport of heat, mass, and momentum. Prerequisites: ESE 317, ChE 368. Credit 3 units.

ChE 515. Mathematical Methods in Chemical Engineering

Same as Env 515.

Application of mass and energy balances to typical chemical engineering problems and problem formulation in terms of ordinary or partial differential equations. Analytical and approximate methods of solution to initial and boundary value problems arising in transport phenomena, chemical reaction engineering, and materials science. Prerequisite: ESE 317. Credit 3 units.

ChE 516. Turbulent Transport Processes

This course will offer graduate students and practicing engineers an introduction to the state of the art techniques in turbulence modeling and simulations and explore how they can be applied to better model and design industrially relevant processes which involve the turbulent transport of mass, momentum, and heat. The topics discussed include turbulent mixing, description of flow and scalar transport in continuously stirred tanks, turbulent flow reactors with applications to chemical, electrochemical and CVD processes, multiphase turbulent flows (bubbly flows and particle-laden flows), and turbulent friction control by polymer and surfactant additives. Prerequisites: ChE 513, MAE 533 or equivalent. Credit 3 units.

ChE 517. Experimental Methods in Fluid Dynamics

Same as MAE 517.

ChE 518. Aerosol Science and Technology

Same as Env 518, MAE 518, CE 518.

Fundamental properties of particulate systems—physics of aerosols, size distributions, mechanics and transport of particles: diffusion, inertia, external force fields. Visibility and light scattering. Aerosol dynamics—coagulation, nucleation, condensation. Applications to engineered systems: Nanoparticle synthesis, atmospheric aerosols, combustion aerosols, pharmaceutical aerosols. Prerequisites: ChE 367, MAE 370, ESE 317. Credit 3 units.

ChE 525. Industrial and Environmental Catalysis*Same as Env 525.*

Major industrial and environmental catalytic processes. Principal theories of heterogeneous catalysis. Experimental methods and techniques used to develop modern catalytic systems. Examples from the petrochemical industry, automotive exhaust systems, and industrial emissions abatement. Prerequisites: Chem 112, 252. Credit 3 units.

ChE 526. Topics in Nanotechnology*Same as MAE 564.***ChE 539. Industrial Ecology***Same as EP 591H, Env 591H.*

Industrial/technical solutions to environmental concerns as a means to achieve sustainable development. An appreciation for the interactions between industrial activities, environmental processes, and societal needs will be developed. Links between current environmental concerns and industrial/societal activities will be explored. Ecological cycles, full cost accounting, life cycle analysis, sustainable development, and design for the environment methods are used to evaluate current industrial activities. Prerequisite: Basic knowledge of chemistry and biology. Credit 3 units.

ChE 540. Transportation-Air Quality Relationships*Same as Env 591J, EP 591J.*

Environment-related aspects of the transportation planning process with emphasis on air quality issues. Statutory, regulatory, and other policy elements driving air quality analysis of transportation systems and projects. Critical assessment of tools for modeling motor vehicle emissions and pollutant dispersion near roadways. Prerequisite: Senior or graduate standing or consent of instructor. Credit 3 units.

ChE 543. Process Control Using Computers

Review of feedback control. Hardware and software for computer control. Analysis of discrete systems. New computer control algorithms. Supervisory control. Recent developments. Some laboratory experiments will be required. Prerequisite: ChE 462 or ESE 431 or equivalent. Credit 3 units.

ChE 550A. Engineering and Molecular Microbiology Techniques*Same as ChE 450A.***ChE 551. Data Analysis and Experimental Design***Same as Env 561, EP 561.*

Techniques of data analysis and experimental design for decision-making. Topics include: statistical design, regression, analysis of variance, analysis of cross-classified categorical data, Bayesian decision theory, and elementary probability modeling. Emphasis varies from year to year. Prerequisite: Senior or graduate standing or permission of instructor. Credit 3 units.

ChE 553. Bioprocess Engineering I: Fundamentals and Applications*Same as ChE 453.***ChE 554. Industrial Accidents and Disasters — Case History Studies***Same as ChE 454.***ChE 555. Bioprocess Engineering II: Biological Processes***Same as ChE 455.***ChE 558. Biological Transport***Same as BME 558.***ChE 566. Statistical Process Control***Same as ChE 466.***ChE 569. Chemical Process Safety***Same as ChE 479.***ChE 590L. Special Topics: Engineering Aspects of Biotechnology***Same as BME 590L.***ChE 592A. Advanced Topics in Aerosol Science and Engineering***Same as CE 592, MAE 592, Env 592.*

This course will be focused on discussion of advanced topics in aerosol science and engineering and its applications in a variety of fields — materials science, chemical engineering, mechanical engineering, and environmental engineering. Prerequisite: ChE 518. Credit 3 units.

ChE 593A. Special Topics in Reaction**Engineering: CFD for Multiphase Systems**

With this course we intend to provide detailed knowledge on the physical foundation of multiphase flow models and the associated numerical solution methods. Due to its relevance for many industrial applications, the emphasis during the course will be on multiphase flows. The course includes computer sessions in which several flow simulators (developed in house) will be used to solve complex multiphase fluid flow problems. Credit 3 units.

ChE 593B. Special Topics: Reaction Engineering for Environmentally Benign Processes

Students will be exposed to principles of reaction engineering and green chemistry as it should be applied to processes of the future. Focus will be on key reaction engineering concepts, including catalysis, mechanisms, reaction kinetics, heterogeneous reactions, reactor types, and economic evaluation. Students will develop a multidisciplinary understanding of chemical, biological, and molecular concepts and will be cognizant of the multi-scale character of developing and designing processes from the micro level to the macro level as well as economic evaluations. Credit 3 units.

ChE 593C. Special Topics: Principles of Environmentally Beneficial Catalysis

An introduction to processes catalyzed by transition metals and by non-transition metal reagents. The course covers major classes of transition metal and non-transition metal mediated catalytic

processes, including oxidation, reduction, addition, rearrangement, polymerization, and elimination. The course provides examples of the identification of microscopic steps in reaction mechanisms, factors—including catalyst design, solvent, and the nature of solid supports—that affect catalyst activity and selectivity, and development of rate expressions for understanding catalytic processes. Credit 3 units.

ChE 593D. Special Topics: Biocatalysis

This course will provide coverage of various topics in biocatalysis. Prior knowledge in biochemistry as well as kinetics and/or reactor design is recommended but not prerequisite. The course will work to the understanding of proteins as catalysts, knowledge of applications of biological catalysis in various industries, and recognition of the potential of biological catalysis for addressing future challenges in science and engineering. This course is for graduate students in chemical engineering, chemistry, biochemistry, medicinal chemistry, pharmaceutical chemistry, molecular biology, and biotechnology. Credit 3 units.

ChE 599. Master's Research

Credit variable, maximum 9 units.

ChE 600. Doctoral Research

Credit variable, maximum 9 units.

ChE 6135. Research Seminar on Reaction Engineering

Credit 1 unit.

ChE 652. Polymer Rheology and Processing*Same as MAE 652.**Formerly same as MATL 652.*

Credit 3 units.

ChE 653. Technology of Composite Materials

Credit 3 units.

ChE 654. Mechanical Behavior of Composite Materials*Formerly same as MATL 654. Credit 0 units.***ChE 657. Materials Characterization Techniques I***Formerly same as MATL 657. Credit 3 units.***ChE 658. Materials Characterization Techniques II***Formerly same as MATL 658. Credit 3 units.***ChE 664. Manufacturing Processes for Advanced Composite Materials**

This course focuses on manufacturing processes for polymer matrix composite materials, with an emphasis on processes used to manufacture high performance composite structures. Conventional prepreg lay-up and autoclave curing will be covered in detail, followed by adhesive bonding, co-cured structure, and liquid molding processes. The effects of processing variables on both thermoset and thermoplastic composites will be emphasized. Other topics include major commercial processes, assembly, nondestructive inspection, and repair. A brief introduction to metal matrix and ceramic matrix composites is included for completeness. Credit 3 units.

Civil Engineering

Chair and Albert P. and Blanche Y. Greensfelder Professor

Kevin Z. Truman (1985)
Ph.D., University of Missouri–Rolla, 1985
Engineering mechanics, structural analysis and design, massive concrete systems, steel structures, structural optimization

Endowed Professors

Phillip L. Gould (1966)
Harold D. Jolley Professor
Ph.D., Northwestern University, 1966
Structural analysis and design, shell analysis and design, biomedical engineering

Thomas G. Harmon (1982)
Clifford W. Murphy Professor and Director, Structural Engineering Laboratory
Ph.D., Massachusetts Institute of Technology, 1973
Reinforced and prestressed concrete, structural design, fiber reinforced polymers

Pratim Biswas (2001)
Stifel and Quinette Jens Professor and Director, Environmental Engineering Program
Ph.D., California Institute of Technology, 1985
Aerosol science and engineering

Shirley J. Dyke (1996)
Edward C. Dicke Professor
Ph.D., Notre Dame University, 1996
Earthquake engineering, structural control, structural health monitoring

Professors

William P. Darby (1976)
Ph.D., Carnegie Mellon, 1975
Environmental planning and management

Mary J. Sansalone (2006)
Ph.D., Cornell University, 1986
Structural Engineering

Srinivasan Sridharan (1980)
Ph.D., University of Southampton, 1978
Structural stability, nonlinear behavior of composite structures, interactive buckling, shell structures

Associate Professor

Jay R. Turner (1994)
D.Sc., Washington University, 1993
Environmental engineering, pollution abatement technologies

Assistant Professors

Daniel Giammar (2002)
Ph.D., California Institute of Technology, 2001
Environmental engineering, water quality

Brian A. Wrenn (1998)
Ph.D., University of Illinois, Urbana–Champaign, 1992
Environmental engineering, bioremediation

Gudmundur Freyr Ulfarsson (2003)
Ph.D., University of Washington, 2001
Transportation engineering, computational methods, transportation safety, statistical and econometric analysis

Senior Professors

Charles Buescher (1997)
M.S., Washington University, 1961
Environmental engineering
Henry G. Schwartz, Jr. (2003)
Ph.D., California Institute of Technology, 1966
Civil engineering, engineering management

Affiliate Professors

Stephen Bannes (2005)
M.S., Southwest Baptist University, 2003
Construction management

Kenneth M. Berry (2003)
M.S., Virginia Polytechnic Institute, 1990
Geotechnical engineering

David W. Brakeman (1992)
B.S., Washington University, 1985
Timber design

John W. Brancaglione (1990)
B.A., Michigan State University, 1967
Urban planning

Todd Brauer (2004)
M.S., University of Kansas, 2000
Transportation engineering

Bruce Brunner (2005)
M.S., Washington University, 2005
Construction management

Ying-Xia Cai (1997)
Ph.D., Washington University, 1997
Structural engineering

Jerry Craig (1984)
M.S., Kansas State University, 1972
Engineering graphics

Mike DeMuro (2002)
M.B.A., Arizona State University, 2001
Construction management

Morris Dirnberger (1998)
Ph.D., University of Missouri–Rolla, 1995
Geotechnical engineering

Stefan Falke (1999)
D.Sc., Washington University, 1999
Environmental engineering

Terry Galganski (2006)
J.D., Saint Louis University, 1980
Construction management

Jack D. Gillum (1999)
B.S., Kansas University, 1950
Engineering management

Lloyd Bruce Grant (2004)
M.C.M., Washington University, 2003
Construction management

Michael Guerra (1996)
J.D., Saint Louis University, 1972
Construction law

John Harris (1993)
M.S.C.E., Washington University, 1985
Structural design

William S. Kankolenski (1990)
B.S., Ferris State University, 1984
Land surveying

James E. Koch (2001)
Ph.D., University of Missouri–Rolla, 1984
Construction management

Shawn J. Leight (2003)
M.S., University of Wisconsin at Madison, 1997
Transportation engineering

Gholam Masoumy (1984)
D.Sc., Washington University, 1980
Structural design

Gary Moore (2005)
M.S., University of Missouri–Rolla, 1988
Hydraulics and hydrological engineering

Michael L. Nobs (2002)
M.S.C.E., Washington University, 1982
Engineering economics

Ernst H. Petzold, III (1979)
M.S., Washington University, 1973
Structural engineering

Christopher C. Poehler (2003)
M.B.A., Washington University, 1994
Construction management

Luis A. Porrello (2002)
D.Sc., Washington University, 2000
Transportation engineering

Michael Scott Roark (2001)
M.S., Washington University, 2000
Structural design

Leonard R. Ruzicka (2002)
J.D., Saint Louis University, 1974
Construction management

George R. Schillinger (2001)
M.B.A., Southern Illinois University, 1983
Water quality design

Joseph L. Schwenk (1986)
M.S., University of Missouri–Rolla, 1980
Geotechnical engineering

Jonathan Sigman (2005)
M.S., MIT, (1997)
Engineering mechanics, structural analysis

Mark W. Smith (2000)
J.D., Washington University, 1986
Engineering law

Allen Ware (2002)
M.B.A., Arizona State University, 1995
Construction management

Matthew J. Westphal (2003)
M.S., Southwest Illinois University–Edwardsville, 2000
Structural engineering

About Civil Engineering

Civil engineers are the builders of the world. They are involved in the planning of cities, design of transportation systems, design of physical structures, and the construction of these projects. Specifically, civil engineers are responsible for the design, construction, and operation of highways, bridges, buildings, railways, aero structures, airports, water supply and treatment plants, dams, canals, and many other works. Civil engineers must deal with a wide spectrum of construction and operating conditions, from space and the lunar surface to deep beneath the sea, while maintaining a concern for the impact of their projects on the environment. This multifaceted professional experience, together with a sound, progressive education, has prepared many civil engineers for posi-

tions of leadership in both industry and government.

The Department of Civil Engineering offers you a curriculum that provides a fundamental background in the engineering and physical sciences, in mathematics, and in the traditional and contemporary civil engineering subspecialties. The major subspecialties include structures, hydraulics, environment, transportation, construction, soils, and foundations. After you receive your B.S., you may choose immediate professional practice or choose from among numerous graduate opportunities in advanced engineering and in such diverse areas as business, law, medicine, and government.

The faculty of the department possesses a wide variety of academic and industrial experience and is dedicated to providing a quality education at both the undergraduate and graduate levels. A close comradeship exists among the students and serves to enrich the academic environment.

Mission Statement

The mission of the undergraduate civil engineering program is to prepare qualified students to enter the world of modern civil engineering. This is accomplished through rigorous education in fundamental scientific disciplines with emphasis on design and analysis of civil engineering systems. The program seeks to nurture critical thinking and innovation, team-playing and leadership qualities, and an awareness of the societal impact of engineering decisions and the critical need for lifelong learning.

Program Objectives

The Civil Engineering program educational objectives are to produce graduates who:

1. Have fundamental knowledge necessary for civil engineering practice, with emphasis placed on the following application areas: structural, transportation, environmental, and construction.
2. Are prepared to pursue graduate studies.
3. Have an understanding (through exposure) of the necessity for basic and applied research in civil engineering.
4. Understand the societal implications, professional requirements, and lifelong learning commitment required to practice in the civil engineering profession.
5. Are contributors in their workplace as team members, leaders, and innovators in both technical and nontechnical roles.

Bachelor of Science in Civil Engineering Degree

This degree requires that you successfully complete 128 units consisting of required courses, technical electives, humanities electives, and design courses; it is accredited by the Accreditation Board for Engineering and Technology (ABET).

The required courses provide you with the scientific and technological basis to enter the world of modern engineering. The technical electives allow you to acquire depth in fields such as transportation systems engineering, structural engineering, construction, environmental engineering, and engineering

Bachelor of Science in Civil Engineering Degree

First Year

See First-year Program, page 325.¹

Second Year

General Chemistry I, II (Chem 111A, 112A)

or

General Chemistry (Chem 111A) and

	<i>Units</i>	
	<i>Fall</i>	<i>Spring</i>
General Chemistry I, II (Chem 111A, 112A)		
or		
General Chemistry (Chem 111A) and approved science or engineering elective ²	3	3
General Chemistry Laboratory I, II (Chem 151 and 152) ²	2	0–2
Differential Equations (Math 217)	4	—
Engineering Mathematics (ESE 317)		4
Surveying (CE 216) ¹	3	—
Engineering Mechanics I (CE/ME 231)	3	—
Engineering Mechanics II (ME 232)	—	3
Engineering and Scientific Computing (CSE 200) ³	—	3
Mechanics of Deformable Bodies (CE 241A or ME 241).....	—	3
Engineering Graphics (CE 145A) ⁴	—	3
	18	16–18

Third Year

Technical Writing (EP 310)	3	—
Hydraulic Engineering (CE 376A) ⁵	—	3
Transportation Engineering (CE 346).....	3	—
Structural Engineering Materials (CE 335A)	2	—
Structural Engineering Materials Laboratory (CE 336)	1	—
Structural Analysis (CE 341).....	3	—
Structural Design (CE 342)	—	3
Introduction to Environmental Engineering (CE 262)	—	3
Fluid Mechanics (CE/ME 370).....	3	—
Fluid Mechanics Laboratory (CE/ME 372A).....	—	1
Soil Mechanics (CE 419).....	—	3
Soil Exploration and Testing (CE 420).....	—	1
Economic Decisions in Engineering (CE 474) ⁵	—	3
	15	17

Fourth Year

Introduction to Electrical Networks (ESE 230) ⁶	3	—
Senior Engineering Seminar (CE 499) ⁷	1	—
Law and Society (CE 456)		
or		
Introduction to Environmental Law and Policy (CE 461) ⁸	0–3	0–3
Fundamentals of Engineering Review (CE 495).....	—	1
Thermodynamics (ChE/ME 320).....	3	—
Probabilistic Methods in Civil Engineering Design (CE 484A)	—	3
Engineering electives	3	3
Electives	3	3
Advanced CE electives ⁹	3	3–6
	16–19	16–19

¹ CE 216 is offered fall, spring, and summer semesters. It is recommended that first-year students take this course in the spring or summer semester of the first year.

² Students must complete Chem 111A and 112A, or Chem 111A and the elective, which should be selected in consultation with the student's adviser. Students selecting only Chem 111A must take only Chem 151.

³ Another course emphasizing computer programming for problem solving may be substituted with permission of the student's adviser.

⁴ First-year students are urged to take the required course CE 145A, Engineering Graphics, in the first or second semester.

⁵ Students specializing in structures should take CE 437 and defer either CE 376A or 474 until the fourth year.

⁶ ChE 443 may be substituted by students pursuing the minor in Environmental Engineering Science.

⁷ CE 499 is offered both semesters.

⁸ Students who are enrolled in the B.S.-M.C.M. or B.S.-M.C.E. program may substitute CE 572.

⁹ Three of these units should be the advanced design elective—CE 467, 476, or 482A—required for graduation. CE 556 is also acceptable if the student has completed CE 463A and CE 466. Students who are enrolled in the B.S.-M.S. M.S.E. in Structural Design should select CE 467 as the advanced design elective.

mechanics. Alternatively, you may elect to pursue a broader-based, less-specialized program. In either case, there is a wide range of options that should be considered in consultation with your adviser.

The application of engineering principles is taught in courses that emphasize design. Among the electives, an advanced design course is required. Your progress is monitored and reported by the Office of the Engineering Registrar. To assist you in planning a program that meets the departmental requirements, appropriate courses will be selected in consultation with your adviser. It is possible to focus these selected courses in one of the traditional areas in civil engineering offered by the department (structural, transportation, environmental, construction), or to select a set of courses to provide breadth within civil engineering.

The humanities electives ideally are chosen to broaden your perspective in the non-technical areas necessary for a well-rounded education.

Multiple Degrees

The Department of Civil Engineering participates in a wide variety of combined degree programs described elsewhere in this Bulletin, such as the double major, A.B.-B.S., B.S.-M.S., B.S.-M.B.A., and minor in structures, minor in environmental engineering, as well as in the premedicine and engineering co-op programs. Details are arranged in consultation with your adviser.

In the B.S.-M.S. program, undergraduate civil engineering students who continue immediately may apply up to 6 credit units of approved 400-level civil engineering courses toward both the bachelor's and master's degrees. Additionally, graduate courses may be taken in the senior year. Thus, both degrees may be obtained in five academic years with a minimum of 152 credit units.

The B.S.-M.S. provisions also apply to the other master's degrees offered by the department as described in later sections.

Graduate Programs

The department offers degree programs at both the master's of science and the doctoral levels in structural engineering, structural mechanics, construction, environmental engineering, and transportation systems engineering. Additionally the department offers professional master's degrees in structural engineering, transportation engineering, construction engineering, and construction management. For more information, contact the School of Engineering & Applied Science at 314/935-6100, or access the civil engineering department's Web site at www.cive.wustl.edu.

Undergraduate Courses

CE 140. Independent Study

Intended to give first-year students the opportunity to participate in significant engineering projects. The student works under the direction and supervision of individual faculty members. First-year students only. Credit variable, maximum 6 units.

CE 142. Introduction to Urban Engineering

Introductory overview of the planning, processing, and impact on society of major civil engineering

public works projects. Basic discussion and limited case studies of such projects in the context of urban and regional planning, transportation planning, and environmental and ecological resource management. First-year students only. Credit 1 unit. Design credit 0.5 units.

CE 145A. Engineering Graphics

Same as MAE 145A.

Techniques in graphic communication and problem solving and design utilizing freehand sketches and computer graphics. Principles of orthographic projection, pictorial drawing, sectional views, dimensioning, and tolerancing. Computer drawing and modeling: layout techniques, editing commands, drawing management, and plotting. Design project: individual or small group assignments, the design process, preliminary sketches, analysis, project modeling, detail and assembly drawings. Credit 3 units.

CE 146. Introduction to Civil Engineering

An introduction to civil engineering is presented through lectures and hands-on experiments. Through lectures and discussions the students will be exposed to the different fields in civil engineering such as environmental, geotechnical, hydraulics, hydrology, structural, surveying, transportation, and water treatment. These lectures will also be used to inform the students of career paths and employment opportunities in civil engineering. In-depth lectures coupled with simple experiments will be given in the areas of environmental, structural, and transportation systems. Through hands-on experiments and calculations the students experience the types of problems that are explored and solved by civil engineers in the areas of environmental, structural, and transportation engineering. Through both the experiments and lectures, the students develop an appreciation for aesthetics, environment, life safety, forces, structural systems, transportation design and policy, and environmental processes and policy. Credit 2 units.

CE 209. Design Process

Same as Arch 209.

CE 216. Surveying

Horizontal and vertical control surveys, including traverses, triangulation, trilateration, and leveling; basic adjustments of observations; geodetic data; coordinate systems. Basic route surveying, including horizontal and vertical curves. Credit 3 units.

CE 231. Engineering Mechanics I

Same as MAE 231.

Statics of particles and rigid bodies. Equivalent systems of forces. Distributed forces; centroids. Applications to trusses, frames, machines, beams,

and cables. Friction. Moments of inertia. Principle of virtual work and applications. Corequisite: Math 132 or 141. Open to first-year students with permission of instructor. Credit 3 units.

CE 241. Mechanics of Deformable Bodies

Same as MAE 241.

CE 241A. Mechanics of Deformable Bodies

Stress and strain: equilibrium, compatibility, transformations. Hooke's law. Elastic energy. Stresses in beams, columns, and torsional members. Yield and fracture. Elastic deflection of beams. Statically indeterminate systems. Concept of stability. Prerequisites: Math 217, ME 231. Credit 3 units. Credit 3 units.

CE 262. Introduction to Environmental Engineering

Same as Env 262.

The objective of this course is to introduce students to the field of environmental engineering. The course will emphasize basic principles of mass and energy conservation which govern physical, chemical, and biological processes. Applications include the estimation of contaminant concentrations and the design of environmental controls. Prerequisites: calculus and chemistry. Credit 3 units.

CE 335A. Structural Engineering Materials

Mechanical behavior of materials: static tension, compression and bending, yield criteria, dynamic effects, creep, fatigue. Structure of metals: atomic bonding, crystal structure, imperfections, dislocations, iron-carbon alloy system, time-temperature-transformation relations, heat treatment of steel-alloy steels. Concrete: manufacture of cements, proportioning concrete mixes; concrete making, placing, curing; air entrainment; mechanical properties. Timber: structure, characteristics, strength properties. Composites: classification and mechanical properties. Prerequisites: CE 231, 241. Credit 2 units.

CE 336. Structural Engineering Materials Lab

Testing procedures, testing machines, use of laboratory equipment, analysis of data, and presentation of results. Laboratory tests on static tension, compression, bending, and torsion of metal specimens. Tests on wood. Determination of compressive and tensile strengths of concrete. Design of concrete mixes and verification of strength. Experiments in advanced topics in mechanics of materials. Corequisite: CE 335A. Credit 1 unit.

CE 341. Structural Analysis

A review of the calculation of reactions, shear, and bending moment. Definition, construction, and use of influence lines. Deflections for statically deter-

Civil Engineering Minor in Structures

	<i>Units</i>
Engineering Mechanics I (CE/ME 231)	3
Mechanics of Deformable Bodies (CE 241A or ME 241)	3
Structural Engineering Materials (CE 335A)	2
Structural Engineering Materials Laboratory (CE 336A)	1
Structural Analysis (CE 341).....	3
Structural Design (CE 342)	3
Advanced Structural Analysis (CE 437)	
<i>or</i>	
Advanced Design of Steel Structures (CE 463A)	
<i>or</i>	
Advanced Design of Concrete Structures (CE 466)	
<i>or</i>	
Design of Timber Structures (CE 410).....	3

minate structures using the virtual work method. Analysis of statically indeterminate trusses using the consistent deformation method. Analysis of continuous beams and planar frames using the consistent deformation, slope-deflection, and moment distribution methods. The influence of span on strength, stability, and economy of structures. An introduction to structural analysis software. Prerequisite: CE 241. Credit 3 units. Design credit 0.5 units.

CE 342. Structural Design

Concepts of “allowable stress” and “load and resistance factor design.” Fundamentals of structural design in steel, reinforced concrete, and timber. Familiarization with the sources of various design codes and practice in interpreting them. Trip to steel fabrication plant. Prerequisites: CE 335A, 341. Credit 3 units.

CE 342L. Structural Design Lab

This course presents the application of structural steel “load and resistance factor design” to “real world” design projects. The course initially focuses on the interpretation and application of relevant building codes, specifications, and steel design manuals. The information from these resources is applied in conjunction with the structural design process taught in CE 342. The design and interpretation and application of the codes, specification, and steel design manuals are then applied to a five-story structural design project. The students, working in groups, are responsible for the production and presentation of structural calculations and construction drawings relevant to the structural design project. Credit 1 unit.

CE 346. Transportation Engineering

The principles of transportation engineering are presented with a focus on highway engineering and traffic analysis. The course introduces students to professional engineering practice and prepares them for specialized study in transportation engineering. The course topics include the principles of road vehicle design and performance as they relate to highway engineering; the study of geometric design of highways and pavement design; traffic engineering, with topics covering traffic flow and queuing theory, along with highway capacity and signalized intersection analysis; and the fundamentals of transportation planning, travel demand forecasting, and analytical modeling. The lecture material is reinforced with homework problems and design projects. Prerequisite: junior standing. Credit 3 units. Design credit 1 unit.

CE 352A. Water and Wastewater Treatment

Same as Env 352A, EnSt 352A.

Theoretical aspects of unit operations and processes for water and wastewater treatment with design applications. Quantities and characteristics of water and wastewater; water quality criteria; physical, chemical, and biological treatment of water and wastewater; and handling and disposal of sludge. Estimation of design parameters from bench-scale testing will be demonstrated in bi-weekly laboratory sessions. Prerequisites: Chem 112A, 152, CE 262, or permission of instructor. Corequisite: ME 370 Credit 4 units. Design credit 2 units.

CE 370. Fluid Mechanics

Same as MAE 370.

CE 376A. Hydraulic Engineering

The principles of hydraulic engineering will be discussed and illustrated with practical examples. Design hydrology, open channel hydraulics, storm sewer and culvert design, and pipe networks will be presented. Computer software will be used in the design of hydraulic systems. Prerequisite: Fluid Mechanics or consent of instructor. Credit 3 units.

CE 400. Independent Study

Prerequisite: permission of chair. Credit variable, maximum 6 units.

CE 402. Undergraduate Honors Research

Intended to give junior/senior level students an opportunity to conduct a research project. The student will complete the research under the direction and supervision of a faculty adviser. A research report and open presentation are required upon completion of the work. Credit variable, maximum 4 units.

CE 408A. Environmental Engineering Lab

Same as ChE 408A.

CE 410. Design of Timber Structures

Study of basic physical and mechanical properties of wood and design considerations. Design and behavior of wood beams, columns, beam-columns, connectors, and fasteners. Introduction to plywood and glued laminated members. Analysis and design of structural diaphragms and shear walls. Prerequisites: CE 341, 342. Credit 3 units.

CE 411. Special Topics in Sustainable Design

Structured lectures and design projects relating to a series of environmental issues critical to practical building and site design. Team projects will include solar gain and shading, water conservation in building, passive heating and cooling strategies, and sustainable materials. Students will have a semester-long design project consisting of the design of a sustainable and healthy office environment. Prerequisites: Senior standing or permission of instructor. Credit 3 units.

CE 413. Introduction to Geographical Information Systems

Same as CE 513.

A practical, hands-on approach to spatial database management and analysis with geographical information systems (GIS) as applied to planning and engineering. Course objectives are to examine how digital earth resources data are collected, stored, analyzed, and displayed. The emphasis will be on the applications of GIS in various research and professional projects in planning and engineering. Credit 3 units.

CE 416B. Introductory Elasticity

Same as CE 516B, MAE 416B, MAE 516B.

Introduction to linear elasticity, index notation, cartesian tensor. Stress and strain, material laws. Formulation of elasticity problem. Plane stress and plane strain. Problems in cartesian and polar coordinates. Torsion of prismatic bars. Energy principles and variational methods. Design project. Prerequisite: CE 241. Credit 3 units.

CE 419. Soil Mechanics

Basic geology as it relates to index and classification properties of soil. Exploration, sampling, and testing techniques. Soil classification systems. Clay minerals and soil structures. Compaction and stabilization. Capillary, shrinkage, swelling, and frost action in soils. Effective stress, permeability, seepage, and flow nets. Consolidation and consolidation settlements. Stresses in soil. Time rate of consolidation. Mohr's circle, stress path, and failure theories. Shearing strength of sand and clays. Prerequisites: CE 241, 370. Credit 3 units.

CE 420. Soil Exploration and Testing

Soil exploration; in-situ soil testing, laboratory testing of soil; processing of test data using a microcomputer; statistical analysis of test data; use of test results in the decision-making process. Corequisite: CE 419. Credit 1 unit.

CE 424. Environmental Spatial Data Analysis

Same as Env 524A.

The course will provide students with an introduction to spatial data analysis and the application of geographic information systems (GIS) to environmental problem solving. It will examine a range of spatial statistical techniques, spatial estimation

methods, and data visualization tools. Practical issues involved in spatial analysis and the implementation of GIS will also be addressed. The course will include lab sessions to gain hands-on experience with GIS and spatial analytical software. Students will complete a semester project. The course is geared toward mid- to upper-level undergraduates and beginning graduate students. Prerequisite: an introductory course in statistics. Credit 3 units.

CE 437. Advanced Structural Analysis

Same as CE 545.

CE 438. Structural Dynamics

Same as CE 550.

Single-degree-freedom systems: free vibration, response to various types of dynamic loading. Non-linear structural response. Multidegree freedom systems: matrix approach. Dynamic response by modal superposition. Distributed parameter systems. Deterministic earthquake analysis. Prerequisites: CE 437A, ESE 317. Credit 3 units. Design credit 1 unit.

CE 439. Computational Structural Mechanics

Same as CE 537.

The course is an introduction to analysis and design of structures using finite elements. The topics covered include: elementary theory of elasticity, plate theories and buckling of plate structures; finite element formulation of 2-D elasticity and plate problems. Hands-on use of commercial finite element software is emphasized throughout. A major design project is included. Credit 3 units. Design credit 1 unit.

CE 443. Environmental Chemistry

Same as ChE 443.

CE 444. Special Topics in Geographical Information Systems in Transportation

Same as CE 513.

A practical, hands-on approach to spatial database design and spatial data analysis with geographical information systems (GIS) as applied to planning and engineering. Course objectives are to examine how digital earth resources data are collected, stored, analyzed, and displayed. The emphasis will be on transportation problems, although additional applications will be discussed. Prerequisites: Junior standing. Credit 3 units.

CE 445. Transportation System Analysis

This course presents an overview of transportation systems analysis. The focus is on roadway networks, traffic, and driver behavior. The course covers fundamental models of traffic flow and queuing. Students are introduced to signalized intersections, along with basic traffic control signs and signals. Transportation system safety analysis is included, with emphasis on traffic safety. Common transportation studies and surveys are discussed. Students are introduced to urban travel demand forecasting along with urban modeling in a wider context. Prerequisites: CE 346 Credit 3 units.

CE 448. Experimental Methods in Structural Dynamics

Same as CE 589.

Introduction to experimental methods in the behavior of structures subjected to dynamic loading. Principles of vibration testing and digital signal processing. Current techniques in modal analysis, system identification, and structural control. Prerequisites: CE438/550 Structural Dynamics or equivalent. Credit 3 units.

CE 456. Law and Society

Introduction to the American legal system and review of the role of law in society and for the individual. The following topics are examined through case analysis and supplemental readings: settlement of disputes, the establishment and mainte-

nance of order in society, protection of individuals and their property, the promotion of the general welfare. Credit 3 units.

CE 458. Structural Stability

Same as MAE 558A, MAE 458, CE 558A.

Theorems of equilibrium and stability. Classification of instability phenomena. Various types of postbuckling behavior and imperfection-sensitivity: Illustrations with mechanical models. Treatment of systems with multiple degrees of freedom. Buckling of columns, beam-columns, and frames using classical and variational methods. Stability and nonlinear behavior of plates and shells. Design project. Credit 3 units.

CE 461. Introduction to Environmental Law and Policy

Same as Env 461, Lw St 461.

Survey of the most prominent federal laws governing environmental compliance and pollution control. Examines laws applicable to environmental impact statement, air pollution, water pollution, and hazardous waste. Addresses policy concerning the relative merits of using technological capabilities as compared with health risks in setting environmental standards. Discusses the need for environmental regulation to protect societal resources. Credit 3 units.

CE 463A. Design of Steel Structures

Same as CE 549.

Behavior and design of steel frames by "allowable stress" and "maximum strength" based on deterministic and LRF (load-resistance factor design) methods. Design of beams, columns, beam-columns, plate girders, connections, multistory frames, and bridge girders. Torsional design of steel structures. Plastic analysis and design of steel structures. Miscellaneous topics in structural steel construction and design. Prerequisites: CE 335A, 341, 342. Credit 3 units. Design credit 3 units.

CE 464. Foundations

Same as CE 570.

Principal problems in design and construction of foundations for bridges and buildings. Bearing capacity of deep and shallow foundations; pressure on retaining walls and shallow foundations; pressure on retaining walls and slope stability; modern developments in piling, cofferdams, open caissons, pneumatic caissons. Prerequisites: CE 342, 419, 420. Credit 3 units. Design credit 1.5 units.

CE 465. Bridge Analysis and Design

Study of fundamental bridge design philosophy and theory of analysis using AASHTO Specifications. Strong emphasis on practical design aspects of steel and concrete bridges and associated analytical approaches. Introduction to commercially available design software providing real world solutions to various design challenges. Seismic design and analysis are also included. Credit 3 units. Design credit 2 units.

CE 466. Advanced Design of Concrete Structures

Same as CE 547.

Flexural behavior and design; strength and deformation of rectangular and nonrectangular sections. Shear strength. Beam-columns, long columns. Slab systems. Design of frames. Footings. Prerequisites: CE 335A, 341, 342. Credit 3 units. Design credit 3 units.

CE 467. Structural Design Project

Students carry out the complete design of typical and unusual building and bridge structures. Use of the computer as a design tool is emphasized. Projects are conducted in cooperation with practicing engineers. Prerequisites: CE 437A, and 463A or 466, or permission of instructor. Credit 3 units.

CE 473. Construction Operations and Management

Same as CE 573.

Construction industry, development, components, and organization. Contracting methods. Applications and limitations. Selection of equipment using production analysis and economics. Analysis of heavy equipment use. Purchasing and change orders. Safety and claims. Credit 3 units.

CE 474. Economics of Engineering Decisions

Principles of economics involved in engineering decisions. Decisions between alternatives based on the efficient allocation of resources. Topics include the time element in economics, analytical techniques for economy studies, and taxes. Prerequisite: junior standing. Credit 3 units.

CE 475. Introduction to Urban Planning

Fundamentals of urban planning: population, economic base, land use, urban design, regional analysis, fiscal analysis, zoning, and public facilities analysis. Synthesis of these tools into a major student project. Prerequisite: senior standing. Credit 3 units. Design credit 1.5 units.

CE 476. Site Planning and Engineering

A focus on the legal, engineering, and economic aspects of planning and design of facilities at a site-specific level. Concepts of legal and economic feasibility of site design are developed in conjunction with the study of civil engineering activities involved in dealing with urban design alternatives for residential, commercial, industrial, and recreational land uses. Case studies and review of current legislation affecting site planning and engineering are undertaken, culminating in a major design project. Credit 3 units.

CE 477. Hydrology

Same as Env 477.

The study of water movement in the environment: the hydrologic cycle, hydrologic models and methods of hydrologic analysis. Atmospheric processes, radiation, circulation, humidity, and evaporation. Saturated and unsaturated flow in subsurface environments, well hydraulics, infiltration, and baseflow. Surface water including runoff, hydrographs, and flood routing. Frequency analysis, hydrologic design storms and design flows, risk analysis. Credit 3 units. Design credit 0.5 units.

CE 482A. Design of Water Quality Control Facilities

Same as Env 582, CE 582.

Application of environmental engineering principles to design of water and wastewater treatment facilities. Critical review of process design issues associated with physical, chemical, and biological treatment processes. Definition of problems and objectives, evaluation of alternatives, and use of these concepts in process design. Design-oriented class/group project. Prerequisite: CE 352 or EP 262, or permission of instructor. Credit 3 units.

CE 484A. Probabilistic Methods in Civil Engineering Design

Same as CE 544.

The role of probability in civil engineering is described and basic probability concepts are presented. Probability distribution functions used in civil engineering are discussed in detail. Methods for estimating parameters and determining distribution models from observational data are introduced. Monte Carlo simulation methods are practiced. Detailed examples of the application of probabilistic methods to structural, transportation, hydrological, and environmental system design are presented throughout the course. Prerequisite: junior standing. Credit 3 units.

CE 486. Design of Masonry Structures

Same as CE 586.

History of masonry construction; masonry materials and components; loadings for masonry structures; fundamentals of working stress design; fundamentals of strength design; design of gravity load-resisting elements; design of lateral load-resisting elements; details, connections, and joints; design of low-rise buildings; design of high-rise buildings; design for water penetration resistance; quality control inspection. Credit 3 units.

CE 495. Fundamentals of Engineering Review

The topics found in most engineer-in-training exams will be reviewed and illustrated using examples. A discussion of the importance of licensing exams and the strategies for taking these exams will be discussed. The main topics for review include: engineering mathematics, basic chemistry, engineering mechanics, engineering economics, thermodynamics, electrical circuits, and material science. Credit 1 unit.

CE 499. Senior Engineering Seminar

Students research assigned topics of importance to graduates entering the civil engineering profession and prepare oral presentations and written reports. Student presentations are augmented by lectures from practicing professionals. Topics include professional registration, ethics, early career development, graduate study, effective professionalism presentations, construction quality, and case histories of civil engineering projects. Prerequisite: senior standing. Credit 1 unit.

Graduate Courses

CE 500. Independent Work

Prerequisite: Approval of Chairman. Credit variable, maximum 9 units.

CE 508A. Environmental Engineering Lab

Same as ChE 408A.

CE 510. Dynamics of Air Pollution

Same as ChE 510.

CE 511. Special Topics in Transportation and Land Use

CE 513. Introduction to Geographical Information Systems

Same as CE 413.

CE 515. Elasticity

Same as MAE 515.

CE 516B. Introductory Elasticity

Same as CE 416B.

CE 518. Aerosol Science and Technology

Same as ChE 518.

CE 523. Construction Cost Engineering

CE 524. Special Topics in Construction Management of Public Projects

CE 524A. Environmental Spatial Data Analysis

CE 525. Professional Engineering Services

CE 527. Urban Systems Modeling

CE 528. Analytical Methods in Civil Engineering

CE 529. Special Topics in International Engineering and Construction

CE 530A. Seismology and Seismic Design

CE 531. Special Topics in Sustainable Water Resources Engineering

CE 537. Computational Structural Mechanics

Same as CE 439.

CE 538. Special Topics in Quality Processes in Construction Management

CE 539. Interdisciplinary Environmental Clinic
Same as EnSt 539.

CE 540. Construction Risk Management

CE 542. Construction Claims

CE 543. Aquatic Chemistry
Same as Env 543.

CE 543. Special Topics in Wastewater Facility and Infrastructure Construction

CE 544. Probabilistic Methods in Civil Engineering Design
Same as CE 484A.

CE 545. Advanced Structural Analysis
Same as CE 437.

CE 546. Finite Element Analysis
Same as MAE 546.

CE 547. Advanced Design of Concrete Structures
Same as CE 466.

CE 548. Advanced Topics in Reinforced Concrete Design

CE 549. Advanced Design of Steel Structures
Same as CE 463A.

CE 550. Advanced Structural Dynamics
Same as CE 438.

CE 552. Pre-Stressed Concrete Design

CE 554. Advanced Topics in Steel Design

CE 555. Earthquake Resistant Design of Structures

CE 556. Optimization Methods in Engineering
Same as MAE 556.

CE 557. Plates and Shells

CE 558A. Structural Stability
Same as CE 458.

CE 560A. Traffic Engineering Fundamentals

CE 561B. Traffic Operations and Analysis

CE 562. Transportation Planning

CE 563A. Travel Demand Forecasting

CE 564A. Topics in Nanotechnology
Same as MAE 564.

CE 568. Random Vibrations
Same as MAE 568.

CE 569. Advanced Structural Design Project

CE 570. Foundations
Same as CE 464.

CE 572. Legal Aspects of Construction

CE 573. Construction Operations and Management
Same as CE 473.

CE 574A. Construction Estimating

CE 574C. Construction Project Planning and Scheduling

CE 574D. Special Topics in Finance and Accounting

CE 575. Construction Internship

CE 576. Construction Management Seminar

CE 577. Decision Analysis and Construction Application

CE 579. Advanced Construction Operations

CE 580A. Construction Technology

CE 581. Inland Water Transportation and Port Plan

CE 582. Water Quality Management Testing
Same as CE 482A.

CE 582A. Design of Water Quality Control Facilities

CE 583. Transport in the Environment
Same as Env 583.

CE 584. Environmental Engineering Biology
Same as Env 584.

CE 585. Composite Structures
Same as MAE 585, MAE 585A, MATL 585.

CE 586. Design of Masonry Structures
Same as CE 486.

CE 587. Ground Water Hydrology
Same as Env 587.

CE 588. Physical and Chemical Processes for Water and Wastewater Treatment
Same as Env 588.

CE 589. Experimental Methods in Structural Dynamics
Same as CE 448.

CE 590. Special Topics in Civil Engineering
Credit variable, maximum 3 units.

CE 5908. Special Topics in Civil Engineering: Environmental Engineering Science Seminar
Same as Env 5908.

CE 591. Research Methods in Civil Engineering

CE 592. Advanced Topics in Aerosol Science and Engineering
Same as ChE 592A.

CE 598. Special Topics in Civil Engineering Graduate Seminar

CE 599. Master's Research
Credit variable, maximum 9 units.

CE 600. Doctoral Research
Credit variable, maximum 12 units.

CE 628. Special Topics in Advanced Analytical Methods in Civil Engineering

CE 639. Special Topics in Nonlinear Computational Mechanics

CE 647. Advanced Finite Element Analysis
Same as MAE 547.

CE 657. Plates and Shells

CE 658. Nonlinear and Dynamic Stability

CE 659. Nonlinear Analysis of Engineering Materials

CE 664. Public Transportation Technology

CE 668. National Transportation Policy

Computer Science and Engineering

Chair

Gruia-Catalin Roman (1976)

Harold B. and Adelaide G. Welge Professor of Computer Science
Ph.D., University of Pennsylvania, 1976
Software engineering, mobile computing, sensor networks, distributed and concurrent systems, formal methods

Assistant Chair and Professor

Sally A. Goldman (1990)

Ph.D., Massachusetts Institute of Technology, 1990
Content-based image retrieval, algorithms, machine learning, computational learning theory

Endowed Professors

Michael R. Brent (1999)

Henry Edwin Sever Professor of Engineering
Ph.D., Massachusetts Institute of Technology, 1991
Computational genomics, mathematical modeling of biological sequences, algorithms for computational biology, integration of computational and experimental methods, bioinformatics

Mark A. Franklin (1970)

Hugo F. and Ina Champ Urbauer Professor of Engineering
Ph.D., Carnegie Mellon University, 1970
Computer architecture, systems analysis and parallel processing, storage systems design

Jonathan S. Turner (1983)

Barbara J. and Jerome R. Cox, Jr. Professor of Computer Science
Ph.D., Northwestern University, 1982
Design and analysis of internet routers and switching systems, networking and communications, algorithms

Professors

Ron K. Cytron (1993)

Ph.D., University of Illinois, Urbana-Champaign, 1984
Programming languages, middleware, real-time systems

Raj Jain (2005)

Ph.D., Harvard University, 1978
Networks and telecommunications, wireless performance analysis and simulation

Associate Professors

Roger D. Chamberlain (1989)

D.Sc., Washington University, 1989
Computer engineering, parallel computation, computer architecture, multiprocessor systems

Kenneth J. Goldman (1990)

Ph.D., Massachusetts Institute of Technology, 1990
Programming environments, distributed systems

Ronald P. Loui (1988)

Ph.D., University of Rochester, 1988
Artificial intelligence models of deliberation, philosophy of computing, scripting language design

William D. Richard (1988)

Ph.D., University of Missouri–Rolla, 1988
Ultrasonic imaging, medical instrumentation, computer engineering

Weixiong Zhang (2000)

Ph.D., University of California–Los Angeles, 1994

Computational biology, artificial intelligence, machine learning, heuristic search, combinatorial optimization, algorithms

Assistant Professors**Burchan Bayazit** (2003)

Ph.D., Texas A&M University, 2003
Motion planning, robotics, graphics, human-machine interaction, sensor networks

Jeremy Buhler (2001)

Ph.D., University of Washington, 2001
Computational biology, genomics, algorithms for comparing and annotating large biosequences

Yixin Chen (2005)

Ph.D., University of Illinois, Urbana-Champaign, 2005
Mathematical optimization, artificial intelligence, planning and scheduling, data mining, learning data warehousing, operations research, data security

Patrick Crowley (2003)

Ph.D., University of Washington, 2003
Computer systems architecture, programmable packet processing systems, system simulation and modeling, performance analysis

Christopher D. Gill (2001)

D.Sc., Washington University, 2002
Distributed real-time embedded systems, middleware frameworks, formal models and analysis of concurrency and timing

Sergey Gorinsky (2003)

Ph.D., University of Texas–Austin, 2003
Computer networking, robust communication protocols, distributed systems

Cindy M. Grimm (2000)

Ph.D., Brown University, 1996
Surface modeling, art-based rendering, user interfaces, texture generation

Tao Ju (2005)

Ph.D., Rice University, 2005
Computer graphics, visualization, mesh processing, medical imaging and modeling

John W. Lockwood (2001)

Ph.D., University of Illinois, 1995
Reprogrammable hardware, high-speed networking, Internet security

Chenyang Lu (2002)

Ph.D., University of Virginia, 2001
Real-time and embedded systems, wireless sensor networks, mobile computing

Robert Pless (2000)

Ph.D., University of Maryland, 2000
Computer vision and sensor network algorithms

William D. Smart (2001)

Ph.D., Brown University, 2002
Machine learning, mobile robotics, human-robot interaction

Aaron Stump (2002)

Ph.D., Stanford University, 2002
Computational logic, programming language theory, automated reasoning

Senior Professors**Jerome R. Cox, Jr.** (1955)

Sc.D., Massachusetts Institute of Technology, 1954
Computer system design, computer networking, biomedical computing

Richard A. Dammkoehler (1960)

M.S., Washington University, 1959
Computer programming theory, information retrieval, computer systems architecture

Takayuki D. Kimura (1978)

Ph.D., University of Pennsylvania, 1971
Communication and computation, visual programming languages, multimedia user interfaces

Fredrick U. Rosenberger (1974)

D.Sc., Washington University, 1969
Digital systems design, computer graphics

In certain cases research and teaching for the department are carried out by other professionals at Washington University. They are affiliated with the Department of Computer Science and are classified as either affiliate faculty or research associates.

Affiliate Professors**Robert J. Benson** (1965)

J.D., Washington University, 1968
Information systems, systems analysis, database design

Affiliate Associate Professors**L. Andrew Oldroyd** (1981)

(The Boeing Company)
Ph.D., University of Oklahoma, 1977
Imaging understanding and remote sensing, robotics, programming languages

Robert A. Rouse (1977)

Ph.D., Northwestern University, 1968
Corporate strategic technology planning, expert systems/artificial intelligence

Affiliate Assistant Professors**Thomas L. Bugnitz** (2000)

M.B.A., Washington University, 1974
Information systems, systems analysis

C. David Butler (2000)

(Center for Engineering Computing)
M.B.A., University of Iowa, 1991
Web design, database systems

Senior Research Associates**Fred Kuhns** (1997)

M.S., Washington University, 1991
Operating systems, networking, software frameworks, extensible architectures

Stan C. Kwasny (1987)

Ph.D., Ohio State University, 1980
Natural language processing, connectionism, artificial intelligence, speech-understanding systems

Kenneth F. Wong (1984)

D.Sc., Washington University, 1985
Computer communications, networking, software architecture

Research Associate**David M. Zar** (1996)

M.S., Washington University, 1993
Computer engineering, simulation and design software

Professor Emeritus**Seymour V. Pollack** (1966)

M.S., Brooklyn Polytechnic Institute, 1966
Intellectual property, information systems

About Computer Science

Computer science is an interdisciplinary field, both in its origin and in its application. Computer science plays an important role in virtually all fields, including science and medicine, music and art, business, law, and human communication. Whether your goal is to become a practicing computer scientist or to take a few courses to develop a basic understanding of computer science for application to another field, the Department of Computer Science and Engineering at Washington University is committed to helping you gain the computing background you need.

People are attracted to the study of computer science for a variety of reasons. Consequently, the department offers a wide variety of academic programs, including a five-course minor, a second major, several undergraduate degrees, combined undergraduate and graduate programs, as well as undergraduate research opportunities and an undergraduate honors program. Each academic program can be tailored to your individual needs.

The field of computer science is very broad, encompassing all aspects of the design, analysis, implementation, and use of computer technology. These aspects may be best understood in terms of the general categories of software systems, hardware, theory, and applications.

Software systems are collections of interacting software components that work together to support the needs of computer applications. Courses in this area help you gain a solid understanding of how software systems are designed and implemented. Examples include operating systems that manage computational resources, network protocols that are responsible for the delivery of information, compilers that translate computer programs into executable form, and programming languages that support the construction of software systems and applications.

Hardware is the term used to describe the physical and mechanical components of a computer system. Courses in this area pro-

vide background in logic circuits that carry out basic computations, computer architecture that defines the organization of circuitry in a computer system, and peripheral devices such as disks and robot arms that are controlled by the computer system.

Theory is the study of fundamental possibilities and limitations of computer systems. A background in theory will help you choose among competing design alternatives on the basis of their relative efficiency, and will help you to verify that your implementations satisfy the specified requirements. Theory courses provide background in algorithms that describe how a computation is to be carried out, data structures that specify how information is to be organized within the computer, analysis that is used to understand the time or space requirements of a problem or solution, and verification techniques for proving that solutions are correct.

Applications are the ways in which computer technology is applied to support work in other disciplines. Most applications courses provide background not only in the applications themselves, but also in how the applications are designed and implemented. Applications areas include artificial intelligence, computer graphics, database systems, and others.

A typical well-rounded study of computer science will include background in each of these areas. However, depending on your educational goals, you may prefer to concentrate on certain areas for greater depth of knowledge. If you are planning to take the CS GRE, then you are strongly advised to take CSE 422S, CSE 431S, and CSE 547T/CS 507T. To help you balance your elective courses, most upper-level computer science courses are numbered with a designation in one of these categories: S for software systems, M for machines (hardware), T for theory, and A for applications. You are encouraged to meet with a faculty adviser in the Department of Computer Science and Engineering to discuss your options and develop a plan consistent with your goals.

About Computer Engineering

The mission of the undergraduate program in computer engineering is to instill in students the knowledge and perspective appropriate for a professional career and for the pursuit of an advanced degree in computer engineering and in related fields. Such principles and practices include rigorous quantitative reasoning and robust engineering design in the context of a comprehensive and contemporary education in the engineering of computer systems. This includes developing an understanding of hardware and software issues, as well as their interactions. Our graduates pursue studies leading to a knowledge of hardware systems (e.g., electrical networks, VLSI); a knowledge of software systems (e.g., algorithms, operating systems); and a knowledge of how these two domains interact (e.g., digital logic, computer architecture). The objectives of this program are to provide: (1) a breadth of knowledge in general engineering, computer engineering, and related topics; (2) a depth

of knowledge in more focused areas of computer engineering; and (3) a general set of skills related to "preparation for life" (e.g., communication skills, etc.).

Computer engineering encompasses studies of hardware, software, and systems questions that arise in the design, development, and application of computers. When you graduate with the Bachelor of Science Degree in Computer Engineering, you will be able to understand the technical issues, evaluate the tradeoffs, and master the techniques for designing computer systems. You will also be prepared to clearly communicate your understandings and conclusions in oral and written form.

Training is provided through a variety of courses in computer science and electrical engineering; involvement in complete system development projects; and close association with computer laboratories such as the Computer and Communications Research Center, the Applied Research Laboratory, and the Electronic Systems and Signals Research Laboratory. Facilities include Sun computers and workstations, parallel computers, personal computers, numerous microprocessors, a variety of image-processing equipment, tools for VLSI design and digital systems fabrication, and extensive hardware and software capabilities for the development of special-purpose computers and the evaluation of new computer architectures.

The program is intended for well-qualified, highly motivated students who wish to study both computer hardware and software. Students who complete this program receive the Bachelor of Science in Computer Engineering. As an option, you may choose to pursue a double major by also satisfying the degree requirements of the B.S.C.S. or B.S.E.E.

Undergraduate Programs

This section introduces you to the wide variety of undergraduate programs offered by the Department of Computer Science and Engineering and will help you to start thinking about which options are right for you. We describe the Minor in Computer Science, the second major, the premedical option, the B.S. degree, the B.S.C.S. degree, the B.S. in Computer Engineering, combined undergraduate and graduate programs, the Undergraduate Research Opportunities Program, and the Cooperative Education Program. Additional information can be found at www.cse.wustl.edu.

On the following pages are some sample schedules for several of the Computer Science and Engineering degree options. These schedules demonstrate some of the many course schedules that can be selected in completing your computer science or computer engineering degree. Some students choose to take some courses during the summer to reduce their course loads during the fall and spring semesters. Your adviser can help you design a program tailored to your individual needs.

Many non-majors take a CS course to broaden their education. CSE 100B, CSE 100G, CSE 100W, CSE 100X, CSE 123,

CSE 126, and CSE 131 have no prerequisites. Guidance for non-majors in selecting a CS course can be found at cse.seas.wustl.edu/EntryCourses/.

Minor in Computer Science

If your goal is a basic foundation in computer science for application to another field, but you are not planning a career as a practicing computer scientist, the Minor in Computer Science is a good choice. The minor consists of five CSE courses, including three core courses and two electives. The core courses provide an introduction to computer science concepts and problem-solving techniques. The electives offer flexibility to integrate your computer science studies with your major area. You select the courses that are most important to you, whether your interests are in fine arts, linguistics, psychology, philosophy, law, business, medicine, the natural sciences, or anything else.

The requirements for the CS minor are:

1. *Core*: CSE 131, 132, 241
2. *Electives*: Any two additional CSE courses selected among CSE 200, CSE 240, and CSE courses with an S, M, T, or A suffix. (See "About Computer Science" on page 350 for an explanation of the suffix designations.)

For the electives, you may choose two related electives for depth of coverage, or you may choose two very different courses for breadth of exposure. Please be aware of prerequisites in selecting elective courses. Should you decide to go further in the field, all courses in the CSE minor except CSE 200 can be counted toward a computer science major or degree. All courses used for the Minor in Computer Science must be taken for a grade, and you must earn a C- or better. A declaration form can be obtained in Lopata 324 or the CSE office (Bryan 509).

Minor in Bioinformatics

Mindful of the emerging opportunities at the interface of biology and computer science, the Departments of Biology and of Computer Science and Engineering are sponsoring a Bioinformatics Minor that will serve students from both departments, as well as other students from the natural sciences and engineering with an interest in this field.

The Bioinformatics Minor requires six or seven courses (20-24 units) as described below:

Biol 280, DNA Workshop (4 units)

OR

Biol 2960 (4 units) plus Biol 2970 (4 units)
Math 320, Elementary Probability and Statistics (3 units)

or

ESE 326, Probability and Statistics for Engineering (3 units)
CSE 131, Computer Science I (4 units)
CSE 241, Algorithms and Data Structures (3 units)

Plus one elective in advanced biology, selected from the following:

Biol 3492 Laboratory Experiments with Eukaryotic Microbes (3 units)
Biol 4181 Population Genetics (3 units)
Biol 4342 Research Explorations in Genomics (4 units)

Biol 437 Laboratory on DNA Manipulation (4 units)

And one elective in advanced computer science, selected from the following:
 CSE 584A Algorithms for Biosequence Comparison (3 units)
 CSE 587A Algorithms for Computational Biology (3 units)
 Biol 5495 Computational Molecular Biology (3 units)

It is anticipated that for those students majoring in biology, computer science, or computer engineering, some portion of the introductory sequence will overlap with courses required for the major, and these courses will be applicable to both the major and the minor. All upper-level courses in biology and CSE used to fulfill the minor may not be used to fulfill another major or minor in Arts & Sciences. A minimum grade of C- is required for all courses to count towards the minor.

Note: Biol 280, DNA Workshop, will provide students with the grounding in molecular biology (DNA, RNA, proteins) and Mendelian genetics that will enable them to participate in the upper-level courses in the bioinformatics minor. Biol 280 is not appropriate for biology majors or pre-med students, but is designed to serve the needs of students in the physical sciences, math, or engineering who wish to pursue this minor. Students from the humanities, social sciences, and business are also welcome in this course. Students will be expected to earn a minimum grade of B in Biol 280 (or the Biol 2960-2970 sequence) to advance in the minor. Permission of the instructor will be required to use this course to satisfy the prerequisites for upper-level biology courses to insure that this standard has been met satisfactorily. Sarah Elgin (Biology) and Jeremy Buhler (Computer Science) currently serve as advisers for the minor.

appropriate for biology majors or pre-med students, but is designed to serve the needs of students in the physical sciences, math, or engineering who wish to pursue this minor. Students from the humanities, social sciences, and business are also welcome in this course. Students will be expected to earn a minimum grade of B in Biol 280 (or the Biol 2960-2970 sequence) to advance in the minor. Permission of the instructor will be required to use this course to satisfy the prerequisites for upper-level biology courses to insure that this standard has been met satisfactorily. Sarah Elgin (Biology) and Jeremy Buhler (Computer Science) currently serve as advisers for the minor.

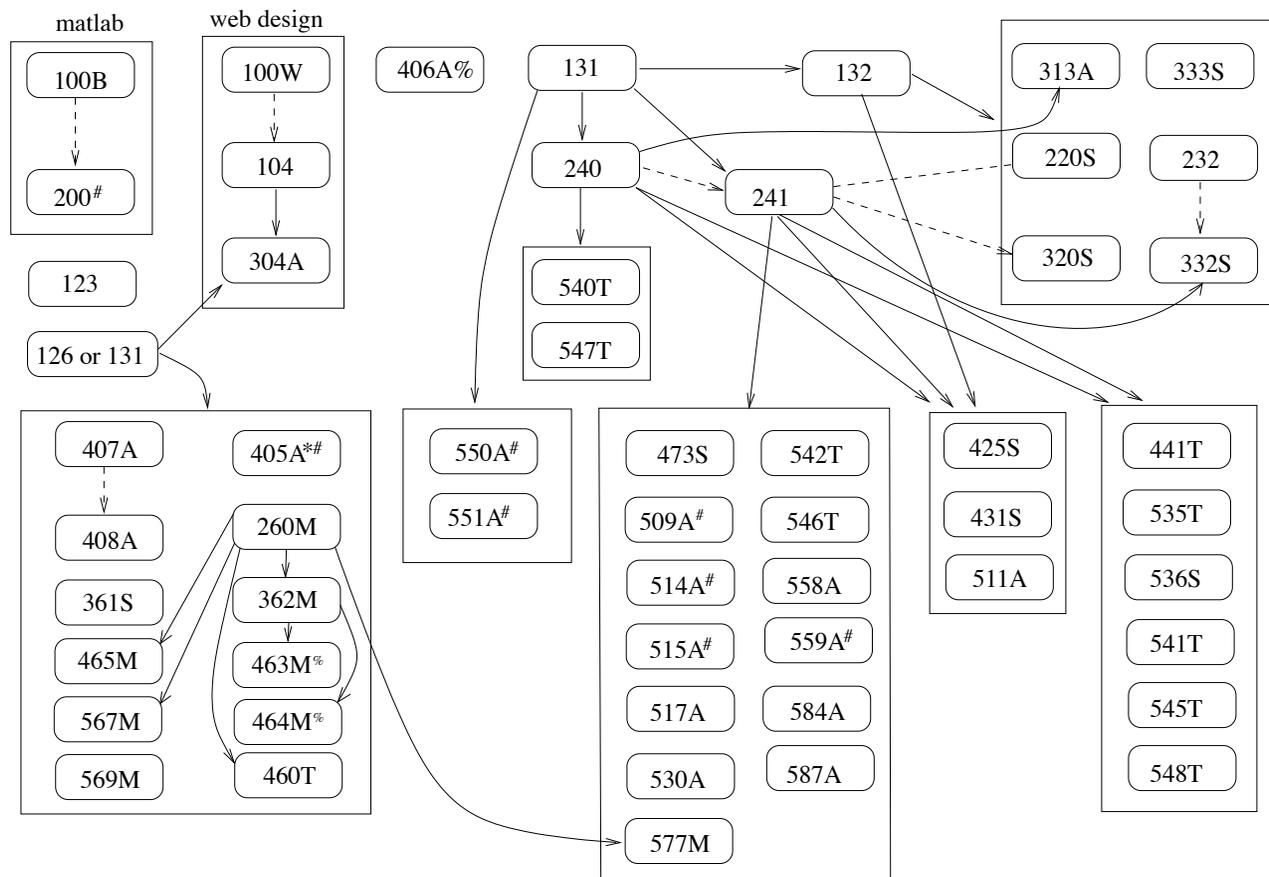
Second Major in Computer Science

The second major provides an opportunity to combine computer science with another degree program. A second major in computer science can expand your career options and enable interdisciplinary study in areas such as cognitive science, computational biology, chemistry, physics, philosophy, and linguistics. The second major is also well suited for students planning careers in medicine, law,

business, architecture, and fine arts. The requirements are as follows. There are no additional distribution or unit requirements for the second major.

1. *Computer Science Core Requirements:* CSE 131, 132, 240 (or Math 310), 241, and 332S. Each of these core courses must be passed with a grade of C- or better.
2. *Computer Science Electives:* At least 15 units of computer science electives, selected from any CSE courses with an S, M, T, or A suffix.
3. *Math Requirement:* Calculus (Math 131 or Math 121-122), Probability (ESE 326 or Math 320, or the sequence QBA 120/QBA 121).
4. *Capstone:* An additional 6 units of course work (or independent study) at the 300-level or higher with a significant computational component. The capstone may be completed in any department and provides an opportunity for interdisciplinary study, such as a thesis that applies computer science to another field. Your CSE adviser must approve the capstone in advance.

CSE Prerequisites (courses with required prerequisites above the 200 level are omitted)



* alternate prerequisite of CSE 200
 # has an additional math prerequisite
 % has a non-CSE prerequisite

→ required prerequisite
 - - - suggested prerequisite

Sample Schedules for Computer Science Degree Options*

Degree Program	Year 1	Year 2	Year 3	Year 4
Bachelor of Science in Computer Science (B.S.C.S.)	<i>Fall</i> CSE 131 Math 132 Physics 117A Humanities/social sciences elective	CSE 240 Math 217 Chem 111A Chem 151 Humanities/social sciences elective	CSE 332S CSE elective EP 310 ESE 326 Humanities/social sciences elective	CSE 422S, 425S, or 431S CSE elective Humanities/social sciences elective free elective free elective
	<i>Spring</i> CSE 132 Math 233 Physics 118A E Comp 100	CSE 241 CSE 361S ESE 317, ESE 309, or Math 309 Humanities/social sciences elective free elective	CSE elective CSE elective Humanities/social sciences elective free elective free elective	CSE 436S CSE elective CSE elective free elective free elective
Bachelor of Science (B.S.) with a major in Computer Science (starting freshman year)	<i>Fall</i> CSE 131 Math 132 Humanities/social sciences elective free elective	CSE 241 Science or psych (4 units) Humanities/social sciences elective free elective free elective	CSE elective CSE elective EP 310 Humanities/social sciences elective free elective	CSE 422S, 425S, or 431S CSE elective Humanities/social sciences elective free elective free elective
	<i>Spring</i> CSE 132 CSE 240 Math 233 E Comp 100	CSE 332S CSE elective Science or psych (4 units) Humanities/social sciences elective free elective	CSE elective CSE elective ESE 326 or Math 320 Humanities/social sciences elective free elective	CSE elective CSE elective free elective free elective free elective
Bachelor of Science (B.S.) with a major in Computer Science (starting third semester)	<i>Fall</i> Math 132 Humanities/social sciences elective free elective free elective free elective	CSE 131 Science or psych (4 units) Humanities/social sciences elective free elective E Comp 100	CSE 240 CSE 361S Humanities/social sciences elective free elective free elective	CSE 422S, 425S, or 431S CSE elective CSE elective ESE 326 or Math 320 free elective
	<i>Spring</i> Math 233 Humanities/social sciences elective free elective free elective free elective	CSE 132 CSE 240 Science or psych (4 units) Humanities/social sciences elective	CSE 332S CSE elective CSE elective EP 310 Humanities/social sciences elective	CSE elective CSE elective CSE elective free elective free elective
Bachelor of Science (B.S.) with a major in Computer Science (for a premedical student)	<i>Fall</i> CSE 131 Math 132 Chem 111A Chem 151 Humanities/social sciences elective	CSE 240 Biol 297A Physics 117A E Comp 100 Humanities/social sciences elective	CSE 332S CSE elective Chem 251 Biology elective with lab (5 units)	CSE 422S, 425S, or 431S CSE elective CSE elective EP 310 Humanities/social sciences elective
	<i>Spring</i> CSE 132 Math 233 Chem 112A Chem 152 Biol 296A	CSE 241 Biol 3051 Physics 118A English Literature course (fills a Humanities/social sciences elective)	CSE elective CSE elective CSE elective Chem 252 Chem 257 ESE 326 or Math 320	CSE elective CSE elective CSE elective Humanities/social sciences elective Humanities/social sciences elective

* At least 6 of the 18 units of the humanities/social sciences electives must be a humanities course and at least 6 of the 18 units must be a social sciences course. All elective courses are assumed to be 3 units unless otherwise stated.

Sample Schedules for Computer Engineering Degree Options*

Degree Program	Year 1	Year 2	Year 3	Year 4
Bachelor of Science in Computer Engineering (B.S.Co.E.)	<i>Fall</i> CSE 131 Math 132 Physics 117A Humanities/social sciences elective	ESE 102 CSE 240 Math 217 Chem 111A Chem 151	CSE 362M ESE 232 ESE 326 EP 310 Humanities/social sciences elective	CSE 465M CoE elective CoE elective Humanities/social sciences elective free elective
	<i>Spring</i> CSE 132 CSE 260M Math 233 Physics 118A	CSE 241 CSE 361S ESE 230 ESE 317 E Comp 100	CSE 462M CoE elective CoE elective Humanities/social sciences elective free elective	CoE elective CoE elective Humanities/social sciences elective Humanities/social sciences elective free elective
Dual Degree of B.S.Co.E. and B.S.C.S. (also shows starting the calculus sequence with Math 131)	<i>Fall</i> CSE 131 Math 131 Physics 117A Humanities/social sciences elective	CSE 241 Math 233 Chem 111A Chem 151 E Comp 100	CSE 422S ESE 230 ESE 317 EP 310 Humanities/social sciences elective	CSE 465M CoE/CS elective CoE elective Humanities/social sciences elective Humanities/social sciences elective
	<i>Spring</i> CSE 132 CSE 240 Math 132 Physics 118A	CSE 260M CSE 332S CSE 361S ESE 102 Math 217	CSE 362M CSE 436S ESE 232 ESE 326 CS elective	CSE 462M CoE/ESE elective ESE 326 or Math 320 Humanities/social sciences elective Humanities/social sciences elective free elective
Dual Degree of B.S.Co.E. and B.S.E.E.	<i>Fall</i> CSE 131 Math 132 Physics 117A Humanities/social sciences elective	CSE 260M ESE 230 Math 217 Chem 111A Chem 151	CSE 241 CSE 362M ESE 326 ESE 351 EP 310	CoE/EE elective CoE/EE elective ESE 331 or ESE 488 Humanities/social sciences elective Humanities/social sciences elective
	<i>Spring</i> CSE 132 ESE 102 Math 233 Physics 118A	CSE 240 CSE 361S ESE 232 ESE 317 E Comp 100	CSE 462M CSE 465M ESE 330 Humanities/social sciences elective free elective	ESE 498 CoE elective CoE/EE elective Humanities/social sciences elective Humanities/social sciences elective

* At least 6 of the 18 units of the humanities/social sciences electives must be a humanities course and at least 6 of the 18 units must be a social sciences course. All elective courses are assumed to be 3 units unless otherwise stated. A CoE/CS elective is a course that can be used as both a CoE and CS elective. Likewise, a CoE/EE elective is a course that can be used as both a CoE and EE elective.

Sample Schedules for Joint CS/Graduate Degree Options*

Degree Program	Year 1	Year 2	Year 3	Year 4	Year 5
B.S.-M.S. Program	<i>Fall</i> CSE 131 Math 132 Humanities/social sciences elective free elective	CSE 241 Science/psych (4 units) Humanities/social sciences elective free elective free elective	CSE (B.S.) elective CSE (B.S.) elective EP 310 free elective free elective	CSE (B.S.) elective CSE (B.S./M.S.) elective CSE (M.S.) elective Humanities/social sciences elective free elective	CSE (M.S.) elective CSE (M.S.) elective CSE (M.S.) elective free elective free elective
	<i>Spring</i> CSE 132 CSE 240 Math 233 E Comp 100	CSE 332S CSE (B.S.) elective Science/psych (4 units) Humanities/social sciences elective free elective	CSE (B.S.) elective CSE (B.S.) elective ESE 326 or Math 320 Humanities/social sciences elective free elective	CSE 422S or 431S CSE (B.S./M.S.) elective CSE (M.S.) elective free elective free elective	CSE (M.S.) elective CSE (M.S.) elective CSE (M.S.) elective free elective free elective
B.S.-D.Sc. (first 5 years) In years 6 and 7, three 500-level CSE courses are needed and the rest of the 9 units per semester are doctoral research	<i>Fall</i> CSE 131 Math 132 Humanities/social sciences elective free elective free elective	CSE 241 CSE 361S Physics 117 Humanities/social sciences elective free elective	CSE 422S or 425S CSE 400 (research) EP 310 Humanities/social sciences elective free elective	CSE 500 elective CSE 541T CSE 560M free elective free elective	CSE 500 elective CSE 500 elective doctoral research (only 9 units)
	<i>Spring</i> CSE 132 CSE 240 Math 233 E Comp 100 Humanities/social sciences elective	CSE 332S CSE elective Physics 118 Humanities/social sciences elective free elective	CSE 547T CSE 400 (research) ESE 326 Humanities/social sciences elective free elective	CSE 500 (A) elective CSE 422S or 431S doctoral research free elective free elective	CSE 500 elective CSE 500 elective doctoral research (only 9 units)
B.S.C.S.-M.B.A.	<i>Fall</i> CSE 131 Math 132 Physics 117A Humanities/social sciences elective	CSE 240 Math 217 Chem 111A Chem 151 Humanities/social sciences elective	CSE 332S CSE 407A EP 310 Humanities/social sciences elective free elective	Acct 5011 Fin 5200 Mgt 5311 Mgt 5303 MEC 5400 MEC 5410 Mkt 5500 OB 5600 OMM 5700 (18.5 units)	CSE 441T CSE 436S M.B.A. electives (9 units)
	<i>Spring</i> CSE 132 Math 233 Physics 118A E Comp 100	CSE 241 CSE 361S ESE 317, ESE 309, or Math 309 Humanities/social sciences elective free elective	CSE 332S CSE elective ESE 326 Humanities/social sciences elective free elective	Acct 5012 M.B.A. electives (7.5 units) CSE elective free elective	Mgt 5302 M.B.A. electives (6 units) CSE elective CSE elective

* Either the B.S. with a major in Computer Science or the B.S.C.S. undergraduate degree can be used. For the B.S./M.B.A., all the CSE electives taken in years 4 and 5 must be courses that could be taken by a CS master's student. The Humanities/social sciences requirement is the same as for all the undergraduate CSE degrees.

Dual Degree

An alternative to the second major is the dual-degree program that leads to two undergraduate degrees, one in the School of Engineering and one from another school. For this option you must complete all requirements (including distribution requirements) for both degrees. If Arts & Sciences is the other school, 150 credits are required for two degrees. (Only 120 credits are required for the second major since a single degree is earned.) See the Dual Degree Office (Lopata 204, 935-6130) for details.

Premedical Option within Computer Science

Students may pursue a premedicine curriculum in conjunction with either the B.S. or B.S.C.S. degree options for computer science majors. On page 353 we have provided a sample schedule for a student pursuing the B.S. degree option. The B.S.C.S. option may result in some semesters with an 18-credit-hour load; however, students may reduce this load by taking physics over the summer.

Bachelor of Science with a Major in Computer Science

The most flexible degree option in computer science is the Bachelor of Science (B.S.). The B.S. degree is designed for students who want a solid background for a career in computer science, with additional flexibility to choose a well-rounded variety of courses. Because it has fewer specific course requirements than the B.S.C.S. and does not require the School of Engineering & Applied Science common studies (such as advanced mathematics, physics, chemistry, etc.), the B.S. degree program leaves room for you to select courses according to your particular needs and interests. Also, the B.S. works well if you want to complete another major along with computer science. This program is also well-suited for students planning to enter medical school or law school.

Students working toward a B.S. degree must meet all requirements for a Bachelor of Science Degree (see page 320) and the following course requirements:

1. **Computer Science Core Requirements:** CSE 131, 132, 240, 241, 332S, and either CSE 422S, 431S, or 425S. Each of these core courses must be passed with a grade of C– or better.
2. **Computer Science Electives:** At least 24 units of computer science electives, selected from any computer science course with an S, M, T, or A suffix. Students may use up to 6 units of approved independent work (CS 400, 493-494, CS 499) as part of their computer science electives.
3. **Math Requirement:** Calculus (Math 131-132-233), Probability (ESE 326 or Math 320, or the sequence QBA 120/QBA 121). Upon completing a course in the calculus sequence (Math 131, 132, 233) with a grade of C– or better, you may apply to receive credit for the preceding courses in the calculus sequence.

4. **Additional Requirements:** 8 units in natural sciences or psychology, C+ or better in E Comp 100 (unless waived), EP 310 (or comparable demonstration of technical writing ability), and the humanities and social sciences electives.

Computer science and math courses taken for the above requirements as well as E Comp 100 and EP 310 cannot be taken on a pass/fail basis.

Bachelor of Science in Computer Science

The Bachelor of Science in Computer Science (B.S.C.S.) is the traditional computer science degree in the School of Engineering. It is designed for students planning a career in computer science and desiring a degree with an engineering flavor. Students working toward a B.S.C.S. degree must meet all requirements for a professional degree (see page 320). In addition, there are the following departmental course requirements:

1. **Common Studies Program Requirements** (see page 320): Includes C+ or better in E Comp 100 or 199 (unless waived), Math 131-132-233, Math 217, Physics 117A-118A, Chem 111A-151, EP 310, and humanities and social sciences electives. Upon completing a course in the calculus sequence (Math 131, 132, 233) with a grade of C– or better, you may apply to receive credit for the preceding courses in the calculus sequence.
2. **Computer Science Core Requirements:** CSE 131, 132, 240, 241, 332S, and 436S; either CSE 260M or CSE 361S; and either CSE 422S, 425S, or 431S. Each of these core courses must be passed with a grade of C– or better.
3. **Computer Science Elective Requirements:** At least 18 additional units in computer science or computer science–related courses with an S, M, T, or A suffix of which at least one must be a theory (T) course and at least one must be a systems (S) course and at least one must be a machine (M) or application (A) course. Students may use up to 6 units of approved independent work (CS 400, 493-494, 499) as part of their computer science electives. Such independent work is not classified as S, M, T, or A.
4. **Additional Departmental Requirements:** ESE 317 (or ESE 309 or Math 309) and ESE 326.

All courses taken to meet the above requirements (with the exception of the humanities and social sciences electives) cannot be taken on a pass/fail basis.

Bachelor of Science in Computer Engineering

Students working toward a B.S.Co.E. degree must meet all requirements for a professional degree (see page 320). Required courses and technical electives cannot be taken on a pass/fail basis. In addition, there are the following departmental course requirements:

1. **Common Studies Program Requirements** (see page 320): Includes C+ or better in

E Comp 100 or 199 (unless waived), Math 131-132-233, Math 217, Physics 117A-118A, Chem 111A-151, EP 310, and humanities and social sciences electives. Upon completing a course in the calculus sequence (Math 131, 132, 233) with a grade of C– or better, you may apply to receive credit for the preceding courses in the calculus sequence.

2. **Computer Engineering Core Requirements:** ESE 102, CSE 131, CSE 132, ESE 230, ESE 232, CSE 241, CSE 260M, ESE 317, ESE 326, CSE 361S, CSE 362M, CSE 462M, CSE 465M. Each of these core courses must be passed with a grade of C– or better.
3. **Computer Engineering Technical Electives:** At least 21 units of technical electives, of which at least 15 units must be from the preferred list, and up to 6 units may be from the accepted list. At least 6 units must be “CS” courses (CSE courses with a T, S, or A suffix), and at least 6 units must be “EE” courses (CSE courses with a M suffix or ESE courses).
 - **Preferred List:** CSE 240, ESE 330, CSE 332S, ESE 351, CSE 422S, CSE 425S, CSE 431S, CSE 432S, CSE 436S, CSE 460T, CSE 463M, CSE 464M, CSE 473S, ESE 482
 - **Accepted List:** CSE 220S, CSE 313A, CSE 320S, ESE 331, CSE 333S, ESE 334, ESE 336, ESE 337, ESE 407, CSE 405A/ESE 411, ESE 430, CSE 441T, ESE 441, ESE 432, ESE 436, ESE 438, CSE 450A, CSE 451A, CSE 452A, ESE 471, ESE 488.

Combined Undergraduate and Graduate Study

The Department of Computer Science and Engineering offers in-depth graduate study in many areas, including networking, distributed systems, algorithms, and artificial intelligence. Students entering the graduate programs require a background in computer science fundamentals equivalent to at least the minor in computer science. Washington University undergraduates seeking admission to the graduate degree program to obtain a master’s in computer science or computer engineering do not need to take the Graduate Record Examination (GRE). For more information, contact the department office, 314/935-6160.

The Joint B.S.-M.S.

This five-year program that leads to both the bachelor’s and master’s degrees offers the student an excellent opportunity to combine undergraduate and graduate studies in an integrated curriculum. The combination of the two programs extends the flexibility of the undergraduate curriculum to more advanced studies, thereby enabling students to plan their entire spectrum of computer science studies in a more comprehensive educational framework. Consistent with the general requirements defined by the School of Engineering & Applied Science (see page 320), a minimum of 150 units of academic credit is required for completion of the B.S.-M.S. program. Provided that the 150-unit require-

ment is satisfied, up to 6 units of course work acceptable for the M.S. can be counted toward both the B.S. and M.S. requirements. In addition, courses must be selected so that the department's undergraduate and graduate requirements are both independently met. Students in the B.S.-M.S. program can exploit the program's flexibility by taking graduate courses toward the graduate degree while still completing the undergraduate degree requirements. In the table on page 331 we have provided a sample schedule for the B.S.-M.S. program.

The B.S.-M.S. program offers early admission to the graduate programs in computer science and computer engineering in the junior or senior year and allows you to complete the master's degree in only one additional year of study (instead of the usual three semesters). Each master's-level computer science course that you take at Washington University that is not counted toward your undergraduate degree can be counted toward the 30 units required for the M.S. Taking advantage of this program can also result in a financial advantage, since the total time to completion is shortened and undergraduate tuition is lower than graduate tuition. Also, if you choose to do a master's project or master's thesis, this gives you the flexibility to spread the research work over a longer period.

If you plan to apply to this program, it is recommended that you complete at least an undergraduate minor in computer science, three additional computer science courses at the 400 level, and one at the 500 level during your first four years.

Combined Bachelor's/Master's Program

This program is designed to enable students in other Washington University schools to pursue a coordinated five-year study leading to a bachelor's degree outside of engineering and a master's degree in the School of Engineering & Applied Science. The admissions process and the graduation requirements for this program are identical to those of the B.S.-M.S. program. Such students usually complete a CS minor to obtain the background needed for their M.S. course work. Ideally, students will take CSE 131, CSE 132, CSE 240 (or some discrete mathematics course), CSE 241, CSE 361S, and CSE 332S as part of their undergraduate degree (typically as free electives).

B.S.-M.B.A. Program

The growing importance of computer-based information systems in the business environment has produced a sustained high demand for graduates with master's degrees in business administration and undergraduate majors in computer science and engineering. General requirements for the joint degree program are given on page 318, and a suggested curriculum appears in the table on page 355.

B.S.-D.Sc. Program

The School of Engineering & Applied Science has established a new combined Bache-

lor of Science/Doctor of Science program. This program is designed to enable highly motivated students of exceptional talent to embark on an accelerated course of studies and research leading to a Doctor of Science degree within seven years. The degree requirements for the program are those associated with the B.S. and D.Sc. degree programs. However, graduate courses at the 500 level or above may be counted for both degrees, subject to departmental restrictions. Students may be admitted to the program upon entry to Washington University but no later than the junior year. (See sample program in the table on page 355.)

Research and Industry Experience

If you want to become involved in computer science or computer engineering research or get experience in industry while you are an undergraduate, there are many opportunities to do so. A few of these are listed below.

Co-op: The Cooperative Education Program allows you to get valuable experience working in industry while an undergraduate. Doing a Co-op can help give you another perspective on your education and may lead to full-time employment. A large number of companies participate in this program. More information is available from the Co-op office in Lopata Room 204.

UROP: The Undergraduate Research Opportunities Program in the Department of Computer Science and Engineering helps to match undergraduates with faculty and research groups. Research projects are available either for pay or for credit through CSE 400 (Independent Study). See cse.seas.wustl.edu/urop for details.

Honors Program: If you maintain a 3.5 GPA and complete a thesis describing research that you have performed while an undergraduate, then you will graduate "with distinction" and your thesis title will appear on your transcript. Besides being a valuable experience, completing a thesis can be advantageous if you apply to graduate school. When selecting this option, you should register for CSE 499, Undergraduate Honors Thesis. Students in the Honors Program are encouraged to take several graduate-level courses and to serve as undergraduate teaching assistants for upper-level undergraduate courses.

Computing Facilities

The School of Engineering & Applied Science has numerous undergraduate laboratories that are accessible to all students regardless of their major. In addition, the Department of Computer Science and Engineering maintains specialized instructional laboratories such as those in support of computer engineering classes. The department actively promotes a culture of strong undergraduate participation in research. Many undergraduates work in research labs with state-of-the-art equipment that provides them the opportunity to take part in computer science and computer engineering research. Robots, sensor networks, high-speed routers, specialized FPGA hardware, wireless de-

vices, RF tags, digital cameras, large displays, and multiprocessors are just a few of the hardware devices undergraduates often use in their projects. Opportunities for exploring modern software development techniques and specialized software systems further enrich the range of research options and help undergraduates sharpen their design and programming skills.

Advanced Placement/Proficiency

Students receiving a 4 or 5 on the AB Computer Science AP exam are awarded 3 units of credit equivalent to CSE 126. Students continuing their study of computer science should enroll in CSE 131. Students with unusually strong background beyond the scope of the AP exam can take a CSE 131 placement exam. Any student with a 4 or 5 on the AB Computer Science AP exam who also passes the CSE 131 placement exam will receive 4 units of credit for CSE 131 (instead of the CSE 126 credit). No credit is given for the A Computer Science AP exam.

Upon request, the computer science department will evaluate a student for proficiency for any of our introductory courses. If a student is determined to be proficient in a given course, that course will be waived (without awarding credit) in the student's degree requirements, and the student will be offered guidance in selecting a more advanced course.

Undergraduate Courses

Course requirements for the minor and majors may be fulfilled by CSE 131, CSE 132, CSE 240, CSE 241 and CSE courses with a letter suffix in any of the categories: software systems (S), hardware (M), theory (T), and applications (A). Other CSE courses provide credit toward graduation but not toward the CS elective requirements for the second major, B.S.C.S., B.S.Co.E., or B.S. with a major in Computer Science. Undergraduates are encouraged to consider 500-level courses.

CSE 100B. Introduction to Computing Tools: MATLAB Skills

This course is aimed at the acquisition of MATLAB skills through hands-on familiarization and practice. Students practice the array, vector, and meshgrid representations, use programming and plotting, and apply these skills to solve numerical problems and generate reports. Credit 1 unit.

CSE 100G. Introduction to Computing Tools: General Skills

This course is aimed at the acquisition of essential skills through hands-on familiarization and practice. Students learn to use popular software tools through self-paced labs in a highly supervised setting. These general tools include: browsers, regular expression search and substitution in UNIX, keyboard shortcuts, making charts and graphs in Microsoft Excel, Microsoft Word, and MATLAB, first steps toward programming in UNIX, basic Photoshop and HTML, basic PowerPoint and Microsoft Access. Assumes no experience with computers whatsoever and can be taken concurrently with any of the other CSE 100s. Credit 1 unit.

CSE 100W. Introduction to Computing Tools: Web Skills

This course is aimed at the acquisition of essential Web authoring skills through hands-on familiar-

ization and practice. Students learn to do things with Web pages through self-paced labs in a highly supervised setting. These skills include: reading, interpreting, and altering Web page sources, image editing, file transfer, publishing pages, Web server management and security, image-sensitive maps, transitions, image slicing, and basic Javascript. CSE 100G concurrently, or some experience with computers, is helpful. Credit 1 unit.

CSE 100X. Introduction to Computing Tools: Advanced Skills

This course is aimed at the advancement of important general-purpose computing skills, specifically Microsoft Word, Microsoft Excel, Photoshop, and PowerPoint. Students learn to do things with Web pages through self-paced labs in a highly supervised setting. Students completing this course should have practiced every important aspect of the software through challenging exercises. Basic familiarity with these tools is assumed; CSE 100G can be taken concurrently. Credit 1 unit.

CSE 104. Web Development

Formerly CS 160.

This comprehensive course does not assume prior programming background or Web design experience. Explores elementary principles that go into designing, creating, and publishing an effective Web site. Topics include the production process, design metaphors, interface/information design, page layout concepts, graphics preparation, color theory, development tools, HTML, style sheets, basic scripting techniques, search engine optimization, and site maintenance/marketing strategies. Credit 3 units.

CSE 123. Introduction to Software Concepts

Software is everywhere. Understanding how software is built can be both enlightening and empowering, whatever your career direction may be. Designed for students without programming experience, CSE 123 uses a visual programming tool to provide a gentle introduction to software design and implementation. Tutorials and programming projects provide hands-on exposure to central thought processes and techniques involved in creating software. Projects are completed during class, with group and individual help available. Textbook readings and short written assignments provide a survey of fundamental computer science concepts. Textual Java programming is introduced near the end of the semester. CSE 123 is recommended for students in broadening their education with a general understanding of computer science, as well as for students who are considering a major or minor in computer science and want an overview of the field before beginning the traditional introductory sequence. CSE 131 is the recommended next course. Prerequisites: None. Credit 3 units.

CSE 126. Introduction to Computer Programming

Same as Math 126. Formerly CS 136G.

This is a one-semester introduction to programming and using the object-oriented language Java. A structured approach to programming covers the software life cycle: problem definition, algorithm/program design, and program coding and debugging. Topics include: abstraction, decomposition, classes and inheritance, applets, data structures, recursion, graphics, numerical computation, and simulation. Basic computer hardware and software architectures are briefly presented. The course assumes no previous programming experience. Credit 3 units.

CSE 131. Computer Science I

Same as Ling 101G. Formerly CS 101G.

An introduction to software concepts and implementation, emphasizing problem solving through abstraction and decomposition. Introduces processes and algorithms, procedural abstraction, data abstraction, encapsulation, and inheritance.

Recursion, iteration, and simple data structures are covered. Representation invariants, loop invariants, and exception handling are used as techniques for writing correct and robust programs. The impact of data representation on performance is discussed but not emphasized. Concepts and skills are mastered through programming projects, many of which employ graphics to enhance conceptual understanding. Java, an object-oriented programming language, is the vehicle of exploration. Prerequisites: Comfort with algebra and geometry at the high school level is assumed. Patience and good planning, organization, and problem solving skills will help you to succeed. Prior programming experience is helpful, but not necessary. Credit 4 units.

CSE 132. Computer Science II

Formerly CS 102G.

CSE 132 builds on CSE 131's introduction to software systems as collections of communicating components. CSE 132 emphasizes more sophisticated uses of object-oriented concepts (inheritance, polymorphism, method overloading, and multiple inheritance of interfaces) and techniques for managing communication among software components. An introduction to packages, file I/O, parsing, graphical user interfaces, exception handling, threads, concurrency, synchronization, and network programming is provided. Algorithms and data structures are presented as needed to support discussion of these topics. Concepts and skills are mastered through software projects, many of which employ graphics to enhance conceptual understanding. Java, an object-oriented programming language, is the vehicle of exploration. Prerequisite: CSE 131 or equivalent. Credit 4 units.

CSE 199. Undergraduate Research Seminar

Formerly CS 120.

The CSE 199 undergraduate seminar is intended for freshmen who have completed CSE131 and are interested in learning more about research opportunities in computer science. Faculty presentations of research and hands-on team projects will expose students to major technologies and exciting research directions in several fields of computer science, including algorithm design, networking, and artificial intelligence. Students will get the opportunity to meet researchers at the forefront of their fields, and learn how to become involved with their research. Prerequisite: CSE 131. Credit 1 unit.

CSE 200. *Engineering and Scientific Computing

Formerly CS 265.

This course provides an introduction to numerical methods for scientific computation which are relevant to engineering problems. Topics addressed include interpolation, integration, linear systems, least-squares fitting, nonlinear equations and optimization and initial value problems. Basic procedural programming concepts (procedural and data abstraction, iteration, recursion) will be covered using MATLAB. C will be briefly covered so the students understand that the algorithms and programming concepts apply in both. Corequisite: Math 217. Credit 3 units.

CSE 220S. Software Design and Development Studio

This is a lab course that provides practical experience in designing, implementing, testing, documenting, and supporting a medium-sized software application. Topics to be covered will include application and user interface specification, module and API design, code re-use, code review, software maintenance and support, unit and integration testing, and debugging procedures. Students

will gain experience in the application of common algorithms, design patterns, and data structures to novel problems. Students will have a choice of working in Java or C++ and will work both individually and in groups. Specific application areas will vary by semester. Prerequisites: Sophomore standing and CSE 132. CSE 241 is recommended. Credit 3 units.

CSE 232. Programming Skills Workshop

Formerly CS 242N.

This course provides an overview of practical implementation skills to help beginning C++ programmers. Topics include compilation and linking, memory management, pointers and references, using code libraries, testing and debugging. The course will be offered as a series of four workshops in the first four weeks of the semester. Prerequisites: CSE 132. Credit 1 unit.

CSE 240. Logic and Discrete Mathematics

Formerly CS 201.

Introduces elements of logic and discrete mathematics that allow reasoning about computational structures and processes. Generally, the areas of discrete structures, proof techniques, and computational models are covered. Topics typically include propositional and predicate logic; sets, relations, functions, and graphs; proof by contradiction, induction, and reduction; and finite state machines and regular languages. Prerequisite: CSE 131 or other introductory programming background. Credit 3 units.

CSE 241. Algorithms and Data Structures

Study of fundamental algorithms, data structures, and their effective use in a variety of applications. Emphasizes importance of data structure choice and implementation for obtaining the most efficient algorithm for solving a given problem. A key component of this course is worst-case asymptotic analysis, which provides a quick and simple method for determining the scalability and effectiveness of an algorithm. Other topics covered generally include: divide-and-conquer algorithms, sorting algorithms, decision tree lower bound technique, hashing, binary heaps, skip lists, B-trees, basic graph algorithms. Prerequisites: CSE 131. CSE 240 (or some basic discrete mathematics background) is strongly recommended. Credit 3 units.

CSE 260M. Introduction to Digital Logic and Computer Design

Same as ESE 260.

Introduction to design methods for digital logic and fundamentals of computer architecture. Boolean algebra and logic minimization techniques; sources of delay in combinational circuits and effect on circuit performance; survey of common combinational circuit components; sequential circuit design and analysis; timing analysis of sequential circuits; use of computer-aided design tools for digital logic design (schematic capture, hardware description languages, simulation); design of simple processors and memory subsystems; program execution in simple processors; basic techniques for enhancing processor performance; configurable logic devices. Prerequisites: CSE 131 or 126 or comparable programming experience. Credit 3 units.

CSE 304A. Server-Side and CGI Scripting

Formerly CS 363A.

This course introduces experienced programmers to CGI and other kinds of web programming in several languages: ASP, SQL, PERL/GAWK, PHP. It will investigate input validation and security; search engine, database, and shopping cart applications; using the browser as a generic GUI for applications; customized Web design; and some server management. Javascript, Ruby, and Python will also be discussed. Equal time will be given to UNIX and Windows platforms. The course will

* CSE 200 counts toward the computer science minor but not toward the second major or any CSE degree option.

emphasize practical design through small projects. Prerequisites: programming at a CSE 131, CSE 126, or equivalent level, and Web design at a CSE 104 or equivalent level, some UNIX familiarity beyond CSE 100. Credit 3 units.

CSE 313A. Artificial Intelligence Lab

Project course in artificial intelligence. Students are required to solve AI problems for which there are not existing canonical approaches. Standard approaches are discussed, but the objective is to be creative and to produce working software rather than to master concepts. Projects usually contain elements of computer vision, natural language processing, game playing, heuristic search and heuristic optimization, the application and representation of knowledge and automatic inference. Prerequisites: CSE 132 and 240, familiarity with UNIX. Credit 3 units.

CSE 320S. Software Design and Development Studio

This is a lab course that provides practical experience in designing, implementing, testing, documenting, and supporting a medium-sized software application. Topics to be covered will include application and user interface specification, module and API design, code re-use, code review, software maintenance and support, unit and integration testing, and debugging procedures. Students will gain experience in the application of common algorithms, design patterns, and data structures to novel problems. Students will have a choice of working in Java or C++ and will work both individually and in groups. Specific application areas will vary by semester. Prerequisites: Junior standing and CSE 132. CSE 241 is recommended. Credit 3 units.

CSE 332S. Object-Oriented Software Development Laboratory

Formerly CS 342S.

Intensive focus on practical aspects of designing, implementing, and debugging object-oriented software. Topics covered include developing, documenting, and testing representative applications using object-oriented and generic frameworks and C++. Design and implementation based on frameworks are central themes to enable the construction of reusable, extensible, efficient, and maintainable software. Prerequisites: CSE 132 and 241. Credit 3 units.

CSE 333S. Distributed Applications

A hands-on introduction to distributed algorithms and applications through independent and group projects. Several distributed application paradigms are explored. Possible topics include client-server applications, distributed simulations, computer-supported collaborative work, distributed pipelines, and distributed multiplayer games. No prior experience in distributed computing is assumed. Prerequisite: CSE 132. Credit 3 units.

CSE 361S. Introduction to Systems Software

Formerly CS 306S.

Introduction to the hardware and software foundations of computer processing systems. Examines the process whereby computer systems manage, interpret, and execute applications. Covers fundamental algorithms for numerical computation, memory organization and access, storage allocation, and the sequencing and control of peripheral devices. Weekly laboratories, exercises, and a final laboratory project. Prerequisites: CSE 131 or 126. Credit 3 units.

CSE 362M. Computer Architecture

Same as ESE 362.

Study of interaction and design philosophy of hardware and software for digital computer systems. Processor architecture, Instruction Set Architecture, Assembly Language, Memory hierarchy design, I/O considerations. Comparison of computer architectures. Prerequisite: CSE/EE

260M. Credit 3 units.

CSE 400. Independent Study

Possible topics may be found in the Undergraduate Research Opportunities Program listing, available in the department office and also at <http://www.cs.wustl.edu/cs/urop.html> on the World Wide Web. Prerequisite: junior standing. Credit variable, maximum 3 units.

CSE 401. System Administration

An introduction to the automation of system administration tasks: backups, installation, accounts, upgrading, patching, monitoring systems and networks. Other topics to be covered include firewalls, vendors, inventory, support contracts, licensing, capacity planning, security, central vs. distributed systems, cross platform issues. The course is targeted towards seniors. Students will learn to write some scripts in SH, CSH, Perl and Winbatch. Prerequisites: EP 310, CSE 332S, and CSE 473S. Credit 1 unit.

CSE 402. Mathematical Tools for Computer Science

CSE 402 is a 1 unit class designed to review a variety of math techniques that appear in one or more upper-division computer science classes. This class is not a substitute for math classes but will help students to see the relationships between mathematics and specific problems in computer science. We especially recommend this class for students who want extra practice before tackling graphics, vision, or robotics. Topics reviewed are linear algebra, calculus, and probability and statistics. Prerequisites: Math 233 and SSM 326 or Math 320. Credit 1 unit.

CSE 405A. Numerical Methods

Same as ESE 411.

CSE 406A. Semantics

Same as Ling 4060.

CSE 407A. Management Information Systems I

Formerly CS 467A.

Introduction to the use of computing and information systems in organizations and to problems of analysis, design, implementation, and management of information systems. The role of technology and the organizational forms and processes needed to effectively apply technology in organizations is contrasted with the role of management and staff in directing and guiding information systems activities. The use of advanced systems development technologies such as application generators complements material on systems design, control, database methods, and systems organization. Prerequisites: CSE 131, 126, or M.B.A. standing. Credit 3 units.

CSE 408A. Management Information Systems II

Formerly CS 468A.

CSE 408A develops a technology management perspective about information technology, asking and answering the question: How do we make the best technology decisions in the context of a dynamic business environment? The course is about technology values and risks, and the strategic importance of effective enterprise decision-making about information and information technology infrastructure. Of particular focus is the business aspect of technology decision-making, using case studies and in-class presentations from industry executives and entrepreneurs. Included is technology project analysis, technology leadership considerations, infrastructure management and architectures, electronic commerce issues, the design and implementation of computer-based information systems with emphasis on database and transaction aspects, the basics of database management, architecture of relevant database management systems, design and implementation strategies. Prerequisite: CSE 407A is strongly recommended but not required, with instructor approval. Credit 3 units.

CSE 422S. Operating Systems Organization

Exploration of operating systems as managers of shared resources. Using UNIX and Windows XP as experimental frameworks, students study algorithms and data structures that support essential operating systems services. Concepts are reinforced through programming exercises and comparative studies. Topics include: proportional sharing and real-time scheduling of processes and threads, I/O facilities, memory management, virtual memory, device management, concurrent programming, file system organization, and distributed object computing. Prerequisites: CSE 332S. Credit 3 units.

CSE 425S. Programming Systems and Languages

Formerly CS 455S.

A systematic study of the principles, concepts, and mechanisms of computer programming languages: their syntax, semantics, and pragmatics; the processing and interpretation of computer programs; programming paradigms; and language design. Illustrative examples will be selected from a variety of programming language paradigms. Prerequisites: CSE 132, CSE 240, and CSE 241. Credit 3 units.

CSE 431S. Translation of Computer Languages

The theory of language recognition and translation is introduced in support of compiler construction for modern programming languages. Topics include syntactic and semantic analysis, symbol table management, code generation, and runtime libraries. A variety of parsing methods is covered, including top-down and bottom-up. Machine problems culminate in the course project, for which students construct a working compiler. Prerequisites: CSE 132, CSE 240, and CSE 241. Credit 3 units.

CSE 432S. Pattern-Oriented Software Design and Development

Intensive focus on design and implementation of software using design patterns. Particular emphasis on successive refinement based on identification of unresolved design forces at each step of the design process and on application of patterns to guide design refinement. Design implementations will be conducted in Java and C++ in a team setting, with weekly presentations and critiques of design and implementation decisions and outcomes throughout the course. Prerequisites: CSE 332S or graduate standing and proficiency in Java and C++ software development. Credit 3 units.

CSE 436S. Software Engineering Workshop

Formerly CS 456S.

An introduction and exploration of concepts and issues related to large-scale software systems development. Areas of exploration include technical complexities, organization issues, and communication techniques for large-scale development. Students participate through teams emulating industrial development. The projects cover the principal system development life-cycle phases from requirements analysis, to software design, and to final implementation. Issues relating to real-time control systems, human factors, reliability, performance, operating costs, maintainability, and others are addressed and resolved in a reasonable manner. Prerequisite: CSE 332S. Credit 3 units.

CSE 441T. Advanced Algorithms

Same as CSE 541T.

Provides a broad coverage of fundamental algorithm design techniques with the focus on developing efficient algorithms for solving combinatorial and optimization problems. The topics covered include: greedy algorithms, dynamic programming, linear programming, NP-completeness, approximation algorithms, lower bound techniques, and on-line algorithms. Throughout this course there is an emphasis on correctness proofs and the

ability to apply the techniques taught to design efficient algorithms for problems from a wide variety of application areas. Prerequisites: CSE 240 and CSE 241. Credit 3 units.

CSE 450A. Video Game Programming

This course will teach the core aspects of a video game developer's toolkit including: Microsoft Windows Programming in C++ (OpenGL or DirectX), 3D Graphics Programming, Artificial Intelligence, Specialized Game Algorithms and Data Structures, Game Design Patterns, Physics Programming, Linear Algebra, Code Optimization and Practices, Collision Detection, Rendering, Particle Systems, Integration with Animation Software, Designing and Following Technical Design Documents, and Large Scale Software Architecture. Students who take this course will be prepared to take CS 451A, a course in which students will develop a complete 3D video game in groups of 3-5 students. Prerequisite: by permission of instructor only. Credit 3 units.

CSE 451A. Video Game Programming II

This class is a continuation of Video Game Programming I, CSE450A. Students will work in groups and with a large game software engine to make a full featured video game. Students will have the opportunity to work on topics in graphics, artificial intelligence, networking, physics, user interface design, and other topics. Prerequisites: CSE 450A and permission of instructors. Credit 3 units.

CSE 452A. Computer Graphics

Formerly CS 453A.

Introduction to computer graphics, input, representation, manipulation, and display of geometric information. Two-dimensional display of three-dimensional objects: perspective, hidden surface, shading, animation. Display and input devices. Issues in designing interactive graphics systems. Issues in building three-dimensional renderers. Students develop interactive graphics programs with a standard graphics package and using various graphics input and output devices. Prerequisite: CSE 332S. Credit 3 units.

CSE 460T. Switching Theory

Same as ESE 460.

Advanced topics in switching theory as employed in the synthesis, analysis, and design of information processing systems. Combinational techniques: minimization, multiple output networks, state identification and fault detection, hazards, testability and design for test are examined. Sequential techniques: synchronous circuits, machine minimization, optimal state assignment, asynchronous circuits, and built-in self-test techniques. Prerequisite: CSE 260M or equivalent. Credit 3 units.

CSE 462M. Computer Systems Design

Same as ESE 462.

Introduction to modern design practices, including the use of FPGA design methodologies. Students use a commercial CAE/CAD system for VHDL-based design and simulation while designing a selected computation system. Prerequisites: CSE 361S and 362M. Credit 3 units.

CSE 463M. Digital Integrated Circuit Design and Architecture

Same as ESE 463.

Brief review of device characteristics important to digital circuit operation, followed by detailed evaluation of steady-state and transient behavior of logic circuits. Implications of and design techniques for very large-scale integrated circuits including architecture, timing, and interconnection. Students must complete detailed design and layout of a digital circuit. Major emphasis on MOS digital circuits with some comparisons to other technologies. Prerequisites: ESE 232, and CSE 362M. Credit 3 units. Design credit 1.5 units.

CSE 464M. Digital Systems Engineering

Same as ESE 464.

Design and characterization of digital circuits, reliable and predictable interconnection of digital devices, and information transfer over busses and other connections. Topics include: review of MOSFET operation; CMOS logic gate electrical characteristics; system and single-point noise margin and noise budgets; figures of merit for noise-margin and power-delay product, and trade-off between noise margin and propagation delay; transmission-line driving including reflection, termination, non-zero transition time, lumped and distributed capacitance loads, nonlinear terminations, and applicable conditions for lumped approximations; coupled transmission lines, forward and backward crosstalk, short-line approximations, ground bounce, and simultaneous switching noise; timing, clocking, and clock distribution for digital circuits; prediction of metastability error rates and design for acceptable probability of failure. Examples and design exercises using systems and interconnections selected from current computer engineering practice such as RAMBUS, PCI bus, GTL, LVDS, and others. Prerequisites: ESE 232 and CSE 362M. Credit 3 units.

CSE 465M. Digital Systems Laboratory

Same as ESE 465. Formerly CoE 455.

Procedures for reliable digital design, both combinational and sequential; understanding manufacturers specifications; use of special test equipment; characteristics of common SSI, MSI, and LSI devices; assembling, testing, and simulating design; construction procedures; maintaining signal integrity. Several single-period laboratory exercises, several design projects, and application of a microprocessor in digital design. One lecture and one laboratory period a week. Prerequisites: CSE 260M and CSE 361S. Credit 3 units.

CSE 467S. Embedded Computing Systems

Same as ESE 467. Formerly CS 427M.

Introduces the issues, challenges, and methods for designing embedded computing systems—systems designed to serve a particular application, which incorporate the use of digital processing devices. Examples of embedded systems include PDAs, cellular phones, appliances, game consoles, automobiles, and iPod. Emphasis is given to aspects of design that are distinct to embedded systems. The course examines hardware, software, and system-level design. Hardware topics include microcontrollers, digital signal processors, memory hierarchy, and I/O. Software issues include languages, run-time environments, and program analysis. System-level topics include real-time operating systems, scheduling, power management, and wireless sensor networks. Students will perform a course project on a real wireless sensor network testbed. Prerequisites: CSE 362M. Credit 3 units.

CSE 473S. Introduction to Computer Networks

Formerly CS 423S.

A broad overview of computer networking. Topics include layered models of networking protocols, basics of physical layer, data link layer, flow control, error control; local area networks, e.g., Ethernet; wireless networks, IEEE 802.11 (WiFi), cellular wireless networks; Internet protocols, transport protocols, routing algorithms; network security, network management, ATM networks, and protocols for networking applications, such as World Wide Web, e-mail and file transfer. Prerequisite: CSE 422S or permission of instructor. Credit 3 units.

CSE 497. Senior Project I

Formerly CS 493.

Implementation of a substantive project on an individual basis, involving one or more major areas in computer science. Problems pursued under this framework may be predominantly analytical, involving exploration and extension of theoretical

structures, or may pivot around the design/development of solutions for particular applications drawn from areas throughout the University and/or community. In either case, the project serves as a focal point for crystallizing the concepts, techniques, and methodologies encountered throughout the curriculum. Students intending to take CSE 497-498 must submit a project proposal for approval by the department during the spring semester of the junior year. Prerequisite: senior standing. Credit 3 units.

CSE 498. Senior Project II

Formerly CS 494.

Implementation of a substantive project on an individual basis, involving one or more major areas in computer science. Problems pursued under this framework may be predominantly analytical, involving exploration and extension of theoretical structures, or may pivot around the design/development of solutions for particular applications drawn from areas throughout the University and/or community. In either case, the project serves as a focal point for crystallizing the concepts, techniques, and methodologies encountered throughout the curriculum. Students intending to take CSE 497-498 must submit a project proposal for approval by the department during the spring semester of the junior year. Prerequisite: senior standing. Credit 3 units.

CSE 499. Undergraduate Honors Thesis

Working closely with a faculty member, the student investigates an original idea (algorithm, model technique, etc.), including a study of its possible implications, its potential application, and its relationship to previous related work reported in the literature. Contributions and results from this investigation are synthesized and compiled into a publication-quality research paper presenting the new idea. Prerequisites: a strong academic record and permission of instructor. Credit 3 units.

Graduate Courses

CSE 500. Independent Study

Credit variable, maximum 3 units.

CSE 505A. Data Security

Formerly CS 502A.

In this age of Internet computing, there is indeed no place or time at which security does not matter. Protecting vital data from various attacks is always an important part in data systems. This course provides introduction to both theory and practice of data security. The theory part includes conventional crypto-algorithms, public-key crypto-algorithms, hash functions and digital signatures. The practice part covers important data security tools and applications: Kerberos, SSH, X.509, IP Security, SSL/TLS, and possibly others. This course is self-contained: basic mathematical foundations, e.g., basics of number theory, are covered in the course. Prerequisites: CSE 240 and CSE 332S. Also CSE 473S is strongly recommended. Credit 3 units.

CSE 508A. Advanced User Interface

Formerly CS 501S.

An introduction to various technologies for human-computer interaction through visual, haptic, and audio channels. User interface management systems for GUI (graphic user interface) and advanced user interface such as pen and voice. Object-oriented design and implementation of UI application framework. Adaptable user interfaces. An overview of event-oriented end-user programming for user definable user interfaces. Introduction to visual programming. Firsthand design experience through individualized projects. Prerequisite: CSE 323S. Credit 3 units.

CSE 509A. Digital Image Processing*Formerly CS 554A.*

An introduction to the use of computers in the processing of digital images. Topics to be discussed include: acquisition of digital images, hardware and software for the display of digital images, the role of visual psychophysics in image processing, transform analysis and filtering, image restoration and reconstruction, and pattern recognition. Frequent laboratory exercises will be used to implement processing algorithms and build intuition in evaluating image quality. Prerequisites: CSE 241 and SSM 317. Credit 3 units.

CSE 511A. Introduction to Artificial Intelligence

The discipline of artificial intelligence (AI) is concerned with building systems that think and act like humans or rationally on some absolute scale. This course is an introduction to the field, with special emphasis on sound modern methods. The topics include knowledge representation, problem solving via search, game playing, logical and probabilistic reasoning, planning, machine learning (decision trees, neural nets, reinforcement learning, and genetic algorithms) and machine vision. Programming exercises will concretize the key methods. The course targets graduate students and advanced undergraduates. Evaluation is based on written and programming assignments, a midterm exam, and a final exam. Prerequisite: CSE 132, CSE 240, and CSE 241, or permission of the instructor. Credit 3 units.

CSE 513A. Graduate Artificial Intelligence Project

Students are required to approach real-world problems in teams with appropriate and effective artificial intelligence techniques. Under supervision, students must identify a problem that is not solved by current methods, acquire data and specifications, access expertise on the problem, and search the literature for relevant approaches. They must then commit to an approach, build the required prototypes, simulators, and agents, and then present both working software and a formal report of capabilities. The objective is to have real-world impact. Prerequisites: CSE 132, CSE 511A strongly recommended. Credit 3 units.

CSE 514A. Data Mining*Same as Biol 5506. Formerly CS 529A.*

Many scientific computing problems are, by nature, statistical. Such problems appear in many domains, such as text analysis, data mining on the Web, computational biology and various medical applications. Another source of the statistical nature of such problems is the lack of sufficient information of the problem domains as well as the specific problems at hand. What is available for a typical application is usually a set of data from observation or experiments. The main objective of this course is to gain experience of dealing with statistical data analysis problems by studying various statistical methods that can be used to make sense out of data, by reading and reviewing literature as well as by working on a specific statistical problem in a selected application domain. Prerequisites: CSE 241 and SSM 326A (or Math 320), or their equivalent, or permission of the instructor. Credit 3 units.

CSE 515A. Intelligent Data Analysis

We very often cry for knowledge while immersed with huge amounts of data. Finding models intrinsic to the production of data we collect and patterns characteristic to the nature of observations we make is of fundamental and practical importance. In this course, we study various advanced techniques (e.g., graphical models and spectral graph theory) from computer science, artificial intelligence, and statistics for analyzing large quantity of data. We consider applications in selected domains, such as computational biology and text

mining on the Web. Prerequisites: CSE 241 and either ESE 326 or Math 320. Credit 3 units.

CSE 517A. Machine Learning*Formerly CS 527A.*

The field of machine learning is concerned with the question of how to construct computer programs that automatically improve with experience. Recently, many successful machine learning applications have been developed, ranging from data-mining programs that learn to detect fraudulent credit card transactions, to information-filtering systems that learn users' reading preferences, to autonomous vehicles that learn to drive. There have also been important advances in the theory and algorithms that form the foundation of this field. This course will provide a broad introduction to the field of machine learning. Prerequisites: CSE 241. Credit 3 units.

CSE 518T. Heuristic Search and Constraint Processing

The course has three main parts and covers the main topics of heuristic search and constraint processing. The first part focuses on single-agent heuristic search problems and algorithms. The second part deals with adversary game playing problems, strategies, and algorithms. The third part considers constraint problems and constraint processing techniques. The course will cover basic and advanced search techniques as well as their performance analysis. It will also provide ample examples of real-world problems and applications. The students will have opportunity to write programs to solve some selected search problems. Prerequisites: CSE 241 and CSE 511A. Credit 3 units.

CSE 520S. Real-Time Systems

This course covers software technologies for real-time systems and networking such as distributed multimedia, telecommunication management, automobiles, avionics, and smart manufacturing. Topics include real-time scheduling, distributed embedded middleware, adaptive performance management, and real-time wireless sensor networks. Prior knowledge of embedded and real-time systems is not required. Prerequisites: CSE 422S or equivalent. Credit 3 units.

CSE 521S. Wireless Sensor Networks*Formerly CS 537S.*

Dense collections of smart sensors networked to form self-configuring pervasive computing systems provide a basis for a new computing paradigm that challenges many classical approaches to distributed computing. Naming, wireless networking protocols, data management, and approaches to dependability, real-time, security, and middleware services all fundamentally change when confronted with this new environment. Embedded sensor networks and pervasive computing are among the most exciting research areas with many open research questions. This class will study a large number of research papers that deal with various aspects of wireless sensor networks. Students will perform a project on a real wireless sensor network comprising tiny devices each consisting of sensors, a radio transceiver, and a microcontroller. Prerequisites: CSE 422S or equivalent. Credit 3 units.

CSE 522S. Advanced Operating Systems*Formerly CS 523S.*

This course explores the core OS abstractions, mechanisms, and policies and how they impact support for general purpose, embedded, and real-time operating environments. Resource management is covered in detail including CPU scheduling, I/O scheduling, interprocess communication models (message passing, remote procedure call, and shared memory); virtualization models and techniques; synchronization models and techniques; and resource allocation strategies. Prerequisites: CSE 422S and significant C/C++ programming experience. Credit 3 units.

CSE 526S. Modular Programming*Formerly CS 545S.*

Modular programming and object-oriented programming (OOP) in Java. Java is compared with other modular programming languages such as C++, Smalltalk, and Oberon. Programming paradigms such as OOP, dataflow, and concurrent programming are compared. Through the final project, students learn how to apply the principles of modular programming in constructing medium sized software. Prerequisite: CSE 425S. Credit 3 units.

CSE 528S. Software Project Management*Formerly CS 585S.*

An introduction to the issues and basic methods used in managing software development projects. The course will include factors affecting software projects, life-cycle models, project scheduling, size and staffing, progress tracking, software metrics, managing people, and crisis management. The course will include lectures, hands-on training in selected project management tools, and case studies. In addition, each student will plan and manage a simulated software project. The course is designed to familiarize software engineers and computer scientists with the issues and problems involved in managing software projects. Prerequisite: CSE 436S, significant industrial software development or permission of instructor. Credit 3 units.

CSE 530A. Database Management Systems

A study of data models and the database management systems that support these data models. The design theory for databases is developed and various tools are utilized to apply the theory. General query languages are studied and techniques for query optimization are investigated. Integrity and security requirements are studied in the context of concurrent operations on a database, where the database may be distributed over one or more locations. The unique requirements for engineering design databases, image databases, and long transaction systems are analyzed. Prerequisite: CSE 241. Credit 3 units.

CSE 531S. Theory of Compiling and Language Translation

Algorithms and intermediate representations for automatic program analysis are examined, with an emphasis on practical methods and efficient engineering of program optimization and transformations. The course includes a thorough treatment of monotone data flow frameworks: a mathematical model in which most optimization problems can be specified and solved. The course primarily covers optimizations that are applicable to any target architecture; however, optimizations specific to parallel, distributed, and storage-hierarchical systems are also discussed. Prerequisite: CSE 431S or CSE 425S. Credit 3 units.

CSE 532S. Advanced Multi-Paradigm Software Development*Formerly CS 562S.*

Intensive focus on advanced design and implementation of distributed object computing (DOC) software. Topics covered include reuse of design patterns and software architectures, and developing representative applications using object-oriented and generic frameworks in C++. Design and implementation based on design patterns and frameworks are central themes to enable the construction of reusable, extensible, efficient, and maintainable DOC software. Prerequisites: CSE 332S or graduate standing and familiarity with C++, and CSE 432S, and CSE 422S or CSE 522S. Credit 3 units.

CSE 535T. Programming Language Theory

This course presents the theoretical foundations of programming languages, using formal techniques. We study how to define programming languages in a formal way and how to prove meta-theoretic

properties about them. Type theory, including powerful typing constructs like polymorphic and recursive types, receives particular attention. The work for the course includes theoretical exercises as well as a project in which students implement selected aspects of advanced programming languages. Prerequisites: CSE 240 and CSE 241. Credit 3 units.

CSE 536S. Distributed System Design: Models and Languages

Formerly CS 576S.

Modern computing environments are highly distributed. This has been the result of major advances in networking technology and their rapid assimilation by a society that functions in a highly distributed and decentralized manner. The goal of this course is to familiarize students with basic concepts, models, and languages that shaped recent developments in distributed computing. The focus is on exploring new ways of thinking about computing and communication that made the development of distributed software systems possible. Competing concepts and design strategies will be examined both from a theoretical and a practical perspective. The course starts with a review of a broad range of models of concurrency and gradually shifts attention to specialized areas of growing import to the computing field, e.g., real-time processing, security, and multimedia. The emerging field of mobile computing will receive special coverage throughout the course. Prerequisite: CSE 240 and CSE 241. Credit 3 units.

CSE 537S. Mobile Computing

Formerly CS 569S.

Internet and wireless communication are two technologies that share the common goal of providing ubiquitous access to distant resources. Their impact on the social fabric is immediately observable today. This course is concerned with methods and principles for the development of systems whose components exhibit some form of mobility across networks or within some physical space and require some knowledge about the domain within which the movement takes place. The course material will cluster around several dominant themes: the delivery of connectivity to mobile nodes, languages that provide facilities for code migration, computational models that include the notion of locality, and design methods that support the development of new kinds of network applications. Since much of the work on mobility has its roots in the networking tradition, the class will include topics concerned with communication protocols, application support software, the unique characteristics of the wireless communication medium, security, location aware applications, algorithms for implementing basic system services. Language-related issues will be concerned with constructs, abstractions and software architectures that facilitate the movement of code mostly across existing wired networks. New models of concurrency and proof techniques will be discussed in an attempt to better understand fundamental differences between distributed computing across a fixed graph structure and new paradigms in which components have a location attribute and may travel across a logical or physical space. Prerequisites: senior or graduate standing. Credit 3 units.

CSE 540T. Formal Concepts in Computer Science

An introduction to the mathematical, logical, and linguistic concepts that underlie the formal aspects of computer science. An overview of naive set theory (relations, orderings, Peano's postulates, cardinality, Cantor's theorem), logic (axiomatic systems, proof theory, model theory), and abstract algebra (semigroups, morphisms). Prerequisite: CSE 240. Credit 3 units.

CSE 541T. Advanced Algorithms

Same as CSE 441T.

CSE 542T. Advanced Data Structures and Algorithms

Formerly CS 541T.

This course is concerned with the design and analysis of efficient algorithms, focusing principally on algorithms for combinatorial optimization problems. A key element in the course is the role of data structures in algorithm design and the use of amortized complexity analysis to determine how data structures affect performance. The course is organized around a set of core problems and algorithms, including the classical network optimization algorithms, as well as newer and more efficient algorithms. This core is supplemented by algorithms selected from the recent technical literature. Prerequisite: CSE 241. Credit 3 units.

CSE 545T. Introduction to Automated Theorem Proving

Tools for automatically or semi-automatically proving logical formulas are increasingly important for applications in fields like verification and artificial intelligence. In the first part of this course, we study algorithms for fully automated theorem proving. These include solutions to problems in standard logics including propositional logic, first-order logic, and equational logic. Decision procedures for decidable theories like the first-order theory of the reals are also covered. In the second part of the course, proof assistants for human-aided proof based on higher-order logic are studied. The work for the course consists of theoretical and engineering exercises, as well as a project. Prerequisites: CSE 240 and 241, or equivalents. Credit 3 units.

CSE 546T. Computational Geometry

Formerly CS 506T.

Computational geometry is the algorithmic study of problems that involve simple geometric shapes, such as points, lines, and polygons. Such problems are motivated by applications in computer graphics and vision, robotics and animation, visualization, molecular biology, and electronic design automation. This introductory course covers various algorithmic techniques and data structures that are unique to geometric computing, such as convex hull, voronoi diagram, delaunay triangulation, arrangement, range searching, the post office problem, Kd-trees, and segment trees. Algorithms for polygon triangulation, shortest paths, and ray tracing are also covered. Prerequisite: CSE 241. Credit 3 units.

CSE 547T. Introduction to Formal Languages and Automata

Formerly CS 507T.

An introduction to the mathematical theory of languages and grammars. Topics include deterministic and nondeterministic finite state machines, push-down automata, and Turing machines; regular, context-free, and recursive languages; closure properties of languages; the concepts of computability and undecidability. Prerequisite: CSE 240. Credit 3 units.

CSE 548T. Concurrent Systems: Design and Verification

Formerly CS 563T.

Concurrency presents programmers with unprecedented complexity further exacerbated by our limited ability to reason about concurrent computations. Yet, concurrent algorithms are central to the development of software executing on modern multiprocessors or across computer networks. This course reviews several important classes of concurrent algorithms and presents a formal method for specifying, reasoning about, verifying, and de-

veloping concurrent algorithms. The selected algorithms are judged to have made significant contributions to our understanding of concurrency. Rigorous treatment of the design and programming process is emphasized. Students entering this course must be familiar with predicate calculus and sequential algorithms. Upon completion of this course students will be able to reason completely formally about small concurrent programs and to apply systematically and correctly their formal skills to larger problems. Prerequisites: CSE 240 and CSE 241. Credit 3 units.

CSE 549T. Distributed Algorithms

Formerly CS 564T.

Distributed algorithms are the protocols by which computers in a distributed system cooperate towards the solution of a problem. Such algorithms must cope with unpredictable communication delays and failures of network components. The first half of the course will cover the theory of message passing distributed algorithms. We will cover proof techniques, key concepts, useful building blocks, and impossibility results. The second half of the course will use this conceptual foundation to understand and design algorithms for real systems. Examples from real systems will be used as case studies. Upon completion of this course, students will have a deeper insight into both distributed algorithms and distributed systems; they should be able to translate this insight into designing real-world solutions to problems in distributed computing. Prerequisite: CSE 240 and CSE 441T, or CSE 541T, or mathematical maturity. Credit 3 units.

CSE 550A. Mobile Robotics

An introduction to the design and implementation of intelligent mobile robot systems. This course will cover the fundamental elements of mobile robot systems from a computational standpoint. Issues such as software control architectures, sensor interpretation, map building, and navigation will be covered, drawing from current research in the field. Students will also design and build a small mobile robot and program it to perform simple tasks in real-world environments. Prerequisites: CSE 131, SSM 326A, Math 320, or permission of instructor. Credit 3 units.

CSE 551A. Robotic Manipulators

The programming and control of robot manipulators and robot manufacturing systems. Introduction to system organizations, kinematic models, mathematics of world models. Sensors and sensor interactions. Programming techniques with examples from current robot system languages. Model-based and task-oriented specification of actions. Laboratory work with real or simulated robot systems. Prerequisite: Engineering math (SSM 317 or equivalent) and programming competence, or permission of instructor. Credit 3 units.

CSE 552A. Advanced Computer Graphics

This course covers advanced topics in graphics in the areas of modeling, rendering, volume rendering, image-based rendering, and image processing. Topics include, but are not limited to, subdivision surfaces, splines, mesh simplification, implicit or blobby modeling, radiosity, procedural textures, filtering, BRDFs, and procedural modeling. The class will have several structured programming assignments and an optional final group project. Students will be exposed to the wide variety of techniques available in graphics and will also pick one area to study in depth. Prerequisite: CSE 332S and CSE 452A. Credit 3 units.

CSE 553S. Advanced Mobile Robotics

This course covers advanced topics from the theory and practice of mobile robotics. Students will read, present, and discuss papers from the current research literature. There will be a substantial pro-

gramming project, in which students implement and test ideas from the current research literature on one of the department's research robot platforms. Prerequisites: CSE 550A and strong programming skills (preferably in C++). Credit 3 units.

CSE 555S. Multimedia Signals and Systems
Formerly CS 525M.

An exploration of algorithms, architectures, and compilers for media processing. Introduces algorithms in image, video, audio, and graphics processing. Examines the characteristics of multimedia (e.g. the extensive data parallelism) and how those characteristics facilitate the design of efficient multimedia systems. Contrasts media processors with general-purpose processors, distinguishing specialized media processing features, including subword parallelism and application-specific hardware. Course work includes written assignments, some lab and programming exercises, and a final project. Prerequisites: CSE 361S or equivalent. Credit 3 units.

CSE 558A. Motion Planning
Formerly CS 522A.

This course studies the general motion planning problem: computing a sequence of motions that transforms a given (initial) arrangement of physical objects to another (goal) arrangement of those objects. Many motion planning methods were developed in the realm of robotics research. For example, a typical problem might be to find a sequence of motions (called a path) to move a robot from one position to another without colliding with any objects in its workspace. However, the general motion planning problem that will be studied arises in many other application domains as well. For example, assembly planning (e.g., finding a valid order for adding the parts when building an engine), mechanical CAD studies (e.g., can you remove a certain part from an engine without taking the engine apart), artificial life simulations (e.g., moving a herd of animals from one location to another), and medicine (e.g., can a drug molecule reach a protein molecule). Prerequisite: CSE 241 or equivalent. Credit 3 units.

CSE 559A. Computer Vision
Formerly CS 519A.

This course studies the theory and practice of extracting information from images and video. Topics will include the classical concepts of the geometry of image and video capture, creation of image and video mosaics, and techniques for creating descriptions of 3D objects and scenes. The course will also include an overview of current vision research topics, including video textures, non-Lambertian surface modelling, and multi-camera and catadioptric imaging systems. The course includes a final project, in which individual or small groups of students will define an image analysis task and implement and test it on real image data. Prerequisites: CSE 241 and linear algebra. Credit 3 units.

CSE 560M. Computer Systems Architecture I
Same as SE 560. Formerly CS 521M.

An exploration of the central issues in computer architecture: instruction set design, addressing and register set design, control unit design, microprogramming, memory hierarchies (cache and main memories, mass storage, virtual memory), pipelining, bus organization, RISC (Reduced Instruction Set Computers), and CISC (Complex Instruction Set Computers). Architecture modeling and evaluation using VHDL and/or instruction set simulation. Prerequisites: CSE 361S and CSE 260M. Credit 3 units.

CSE 561M. Computer Systems Architecture II
Same as ESE 561. Formerly CoE 526M.

Advanced techniques in computer system design.

Selected topics from: processor design (multi-threading, VLIW, data flow, chip-multiprocessors, application specific processors, vector units, large MIMD machines), memory systems (topics in locality, prefetching, reconfigurable and special-purpose memories), system specification and validation, and interconnection networks. Prerequisites: CSE 560M or permission of instructor. Credit 3 units.

CSE 562M. Digital System Verification, Testing, and Reliability

Same as ESE 562. Formerly CoE 559M.

Three critical issues for robust digital systems are design errors, manufacturing faults, and failures during operation. This course covers digital system verification, testing, and reliability for both timing and logic, in order to prepare students to deal with these in real designs. Verification will cover formal verification for logic and timing, and contrast with simulation. Methods for generating test vectors, scan testing, and built-in self test will be covered. MTBF will be calculated for several small systems with emphasis on models and their limitations. Prerequisite: CSE 462M. Credit 3 units.

CSE 563M. Advanced VLSI Design

Same as ESE 563.

This course will provide the opportunity for students to integrate information obtained in previous digital courses. Students will select a project, generate a circuit specification, and then develop a design with sufficient detail to allow fabrication as an MOS integrated circuit. Lectures will be given on the theory and application of simulation and verification programs (e.g., design and electrical rule checking). Weekly design reviews will be held where the students and instructors will critique the current state of the specifications, the system design, and its MOS implementation. Selected projects may be fabricated and will be available for testing during the following semester. Prerequisites: ESE 463 and permission of the instructor. Credit 3 units.

CSE 564M. Advanced Digital Systems Engineering

Same as ESE 564. Formerly CoE 555.

This course is CSE 464M augmented by additional lectures, discussions, and homework on advanced digital systems engineering topics. Credit will not be granted for both CSE 464M and CSE 564M. Prerequisites: ESE 232 and CSE 362M. Credit 3 units.

CSE 565M. Acceleration of Algorithms in Reconfigurable Logic

Formerly CS 535M.

As the Internet continues to be used for more applications, computer networks will perform more functions. In order to implement these new functions at full speed, much of the data processing operations will be implemented in hardware. This class explores the techniques of migrating networking algorithms from software to hardware. Machine problems are implemented that cover processing and queuing data in Field Programmable Gate Arrays (FPGAs). Prerequisites: Experience with VHDL synthesis (CSE 260M, 362M, 462M or equivalent) and networking background (CSE 473S, CSE 573S or equivalent). Credit 3 units.

CSE 566M. Reconfigurable System-on-Chip Design

Formerly CS 536M.

Complete computing and networking systems can be implemented within a single integrated circuit. Such a system consists of multiple application modules interconnected by common infrastructure components. This class explores the challenges to

design and test of modules and components for System-on-Chip (SoC). The course focuses on techniques to design components on the system reusable. Exercises are given to synthesize and simulate the components using modern Computer Aided Design (CAD) tools. Resulting systems are prototyped in reprogrammable hardware. Prerequisites: Experience with hardware design and VHDL synthesis CSE 462M or equivalent; experience with computer networks CSE 473S, CSE 573S, or equivalent. Credit 3 units.

CSE 567M. Computer Systems Analysis

Same as ESE 567. Formerly CS 557M.

Introduction to the basic tools of computer and communications systems analysis and evaluation. Deterministic and stochastic modeling concepts are presented. Queuing theory and discrete event (DES) simulation methods are studied with application to a variety of examples drawn from the computer and communications performance evaluation literature. A standard DES language is used in modeling and simulation studies. Topics of current interest such as computer input/output models, mass memory, bus models, and communications network models are discussed. A modeling project is typically required. Prerequisites: CSE 131 or CSE 126, and CSE 260M or their respective equivalents. Credit 3 units.

CSE 569M. Parallel Architectures and Algorithms

Same as ESE 569. Formerly CS 579M.

A number of contemporary parallel computer architectures are reviewed and compared. The problems of process synchronization and load balancing in parallel systems are studied. Several selected applications problems are investigated and parallel algorithms for their solution are considered. Selected parallel algorithms will be implemented in both a shared memory and distributed memory parallel programming environment. Prerequisites: graduate standing and knowledge of the C programming language. Credit 3 units.

CSE 573S. Protocols for Computer Networks
Formerly CS 533S.

An introduction to the design, performance analysis, and implementation of existing and emerging computer network protocols. Protocols include multiple access protocols (e.g., CSMA/CD, token ring), internetworking with the Internet Protocol (IP), transport protocols (e.g., UDP, TCP), high-speed bulk transfer protocols, and routing protocols (e.g., BGP, OSPF). General topics include error control, flow control, packet switching, mechanisms for reliable, ordered and bounded-time packet delivery, host-network interfacing and protocol implementation models. Substantial programming exercises supplement lecture topics. Prerequisite: CSE 473S or permission of the instructor. Credit 3 units.

CSE 574S. Advanced Topics in Networking

Formerly CS 524S.

In-depth up-to-date studies of selected topics in computer networking. The topics vary by semester and include, among others, high-speed networking and switching, next generation networks, routing, congestion control, sensor networks, multicasting, network security, wireless networks, mobility, and hand-off. Prerequisites: CSE 473S or permission of the instructor. Credit 3 units.

CSE 577M. Design and Analysis of Switching Systems

Same as ESE 577.

Switching is a core technology in a wide variety of communication networks, including the Internet, circuit-switched telephone networks and optical fiber transmission networks. The last decade has been a time of rapid development for switch-

ing technology in the Internet. Backbone routers with 10 Gb/s links and aggregate capacities of hundreds of gigabits per second are becoming common, and advances in technology are now making multi-terabit routers practical. This course is concerned with the design of practical switching systems and evaluation of their performance and complexity. Prerequisites: CSE 241, 260M and ESE 326. Credit 3 units.

CSE 578A. Multimedia Computing and Networking

Formerly CS 532A.

This course covers a broad range of topics in the frontier of multimedia computing and networking systems, focusing on transmission techniques and protocols, massive storage architectures and data security. Especially, this course covers RTP/RTCP, rate and flow control, jitter management, error control and loss recovery, video-on-demand, voice-over-IP, wide area caching systems and techniques, encryption and group key management. In the first semester, this course will have extensive readings, presentations and discussions by the students. Prerequisites: CSE 241, CSE 473S, CSE 422S is strongly recommended. Credit 3 units.

CSE 579A. Digital Representation of Signals

Same as ESE 578.

CSE 583A. Topics in Computational Molecular Biology

Same as Biol 5497.

CSE 584A. Algorithms for Biosequence Comparison

Same as Biol 5504. Formerly CS 544A.

This course surveys fundamental algorithms for comparing and organizing biological sequences. Emphasis is placed on techniques that are useful for implementing biosequence databases and comparing long sequences, such as entire genomes. Many of these techniques are also of interest for more general string processing and for building and mining of textual databases. Algorithms will be presented rigorously, including proofs of correctness and running time where feasible. Topics include classical string matching, suffix trees, exclusion methods, multiple alignments and the design of BLAST and related biosequence comparison tools. Students will complete written assignments and will implement advanced comparison algorithms to address problems in bioinformatics. This course does not require a biology background. Prerequisites: CSE 241, graduate standing, or permission of instructor. Credit 3 units.

CSE 587A. Algorithms for Computational Biology

Formerly CS 547T.

This course will focus on how to sequence and analyze a genome, emphasizing computational and algorithmic issues. After taking this course, you should be able to parachute into a genome informatics group, understand what's going on, and do something useful on your first day. Topics covered include: the essential biology, the essential probability theory, base calling and quality clipping, genome assembly (including aspects of sequence alignment), predicting protein-coding genes (including Hidden Markov Models and comparative genomics approaches), predicting gene function by comparing to proteins of known function, and advanced topics in sequence alignment. This course will include a combination of paper-and-pencil homework assignments and programming labs in 'C.' Prerequisites: CSE 241 or CSE 502N or Biol 5495. Credit 3 units.

CSE 588A. Biomedical Signal Processing

Same as BME 433.

CSE 596. Seminar in Imaging Science and Engineering

Same as ESE 596.

CSE 597. Practicum in Imaging Science and Engineering

Same as ESE 597.

Electrical and Systems Engineering

Chair and Eugene and Martha Lohman Professor of Electrical Engineering

Arye Nehorai (2006)

Ph.D., Stanford University, 1983

Signal processing, biomedicine, and communications

Associate Chair and Professor

Hiroaki Mukai (1975)

(Director of the Undergraduate Programs and Director of the Master of Control Engineering Program)

Ph.D., University of California–Berkeley, 1974

Theory and computational methods for optimization, optimal control, systems theory, electric power system operations, and differential games

Endowed Professors

Christopher I. Byrnes (1989)

Edward H. and Florence G. Skinner Professor in Systems Science and Mathematics

Ph.D., University of Massachusetts, 1975

Linear and nonlinear systems, adaptive control, dynamical systems

R. Martin Arthur (1969)

Newton R. and Sarah Louisa Glasgow Wilson Professor in Engineering

Ph.D., University of Pennsylvania, 1968

Ultrasonic imaging, electrocardiography

Ronald S. Indeck (1988)

Das Family Distinguished Professor in Electrical Engineering

Ph.D., University of Minnesota, 1987

Magnetic recording, information storage, thin films, and devices

Alberto Isidori (1989)

Edwin H. Murty Professor of Engineering

Libera Docenza, University of Rome, 1969

Linear and nonlinear systems, stability, dynamical systems

Joseph A. O'Sullivan (1986)

Samuel C. Sachs Professor of Electrical Engineering

Ph.D., Notre Dame University, 1986

Information theory, statistical signal processing, imaging science, data processing for data storage systems, recognition theory and systems, and tomographic, spectral, and optical imaging

Professors

Daniel R. Fuhrmann (1984)

Ph.D., Princeton University, 1984

Statistical signal processing, radar systems, genome sequencing

Bijoy K. Ghosh (1983)

Ph.D., Harvard University, 1983

Computer vision, linear and nonlinear system theory, robotics, signal processing

I. Norman Katz (1967)
Ph.D., Massachusetts Institute of Technology, 1959

Numerical analysis, differential equations, finite element methods, locational equilibrium problems, algorithms for parallel computations

Daniel L. Rode (1980)
Ph.D., Case Western Reserve University, 1968
Optoelectronics and fiber optics, semiconductor materials, processing, and electronic devices

Ervin Y. Rodin (1966)
Ph.D., University of Texas–Austin, 1964
Optimization, differential games, artificial intelligence, mathematical modeling

Barry E. Spielman (1987)
Ph.D., Syracuse University, 1971
High-frequency/high-speed devices, RF & MW integrated circuits, computational electromagnetics

Tzyh Jong Tarn (1969)
D.Sc., Washington University, 1968
Quantum mechanical systems, bilinear and nonlinear systems, robotics and automation

Associate Professors

Paul S. Min (1990)
Ph.D., University of Michigan, 1987
Routing and control of telecommunication networks, fault tolerance and reliability, software systems, network management

Robert E. Morley, Jr. (1978)
D.Sc., Washington University, 1977
Computer and communication systems, VLSI design, digital signal processing

Heinz M. Schättler (1987)
Ph.D., Rutgers University, 1986
Optimal control, nonlinear systems, stochastic calculus

Senior Professors

Marcel W. Muller (1966)
Ph.D., Stanford University, 1957
Solid-state physics, microwave electronics, magnetism, recording physics

William F. Pickard (1966)
Ph.D., Harvard University, 1962
Biological transport, electrobiology, energy engineering

Barbara A. Shrauner (1966)
Ph.D., Harvard University (Radcliffe), 1962
Plasma processing, semiconductor transport, symmetries of nonlinear differential equations

Donald L. Snyder (1969)
Ph.D., Massachusetts Institute of Technology, 1966
Communication theory, random process theory, signal processing, biomedical engineering, image processing, radar

John Zaborszky (1955)
D.Sc., Royal Hungarian Technical University, 1942
Control theory, electric power systems

Affiliate Faculty

Roger D. Chamberlain (1989)
D.Sc., Washington University, 1989
Computer engineering, parallel computation, computer architecture, multiprocessor systems

Jerome R. Cox, Jr. (1955)
D.Sc., Massachusetts Institute of Technology, 1954
Computer visualization, digital communication, biomedical computing

Mark A. Franklin (1970)
Hugo F. and Ina Champ Urbauer Professor in Engineering
Ph.D., Carnegie Mellon University, 1970
Computer engineering, computer architecture, systems analysis and simulation

David S. Gilliam (1989)
Ph.D., University of Utah, 1977
Control of distributed parameter systems, partial differential equations

Anders Lindquist (1989)
Ph.D., Royal Institute of Technology, Sweden, 1972
Optimization and system theory, stochastic realization and control

William D. Richard (1988)
Ph.D., University of Missouri–Rolla, 1988
Computer engineering, machine vision, medical instrumentation

Professors Emeriti

William M. Boothby (1959)
Ph.D., University of Michigan, 1949
Differential geometry and Lie groups, mathematical system theory

Lloyd R. Brown (1949)
D.Sc., Washington University, 1960
Automatic control, electronic instrumentation

David L. Elliott (1971)
Ph.D., University of California–Los Angeles, 1969
Mathematical theory of systems, nonlinear difference, and differential equations

Robert O. Gregory (1955)
D.Sc., Washington University, 1964
Electronic instrumentation, microwave theory, circuit design

Raymond M. Kline (1962)
Ph.D., Purdue University, 1962
Computer engineering, computer-aided design, control systems

Charles M. Wolfe (1975)
Ph.D., University of Illinois, 1965
Semiconductor materials, devices, statistical physics, optimization

Lecturers

Chrysanthe Preza
D.Sc., Washington University (1998)
Computational imaging for microscopy, optics-based models, model-based image and signal processing

Edward J. Richter

MS, Washington University (2001)
VLSI

Jason W. Trobaugh (2001)
D.Sc., Washington University, 2000
Ultrasonic imaging, image and signal processing

About Electrical and Systems Engineering

The mission of our undergraduate programs is to instill in students the knowledge and perspective, appropriate both for a professional career and for the pursuit of advanced degrees, in fields that rely on key electrical engineering and systems principles and practices. Such principles and practices include rigorous quantitative reasoning and robust engineering design. This mission is accomplished by ensuring that students achieve both depth and breadth of knowledge in their studies and by maintaining a high degree of flexibility in the curriculum. Our programs also seek to provide good preparation for life, including the ability to communicate in written and oral form and the desire to continue learning throughout life. In addition, they aim to provide the opportunity and training for students to acquire the skills and attitudes to become leaders.

The department offers courses of study leading to degrees in both electrical engineering and systems science and engineering. Opportunities for study and research currently available in the department include solid-state engineering (semiconductor theory and devices, plasma processing and nonlinear plasma theory, optoelectronics, microwave and magnetic information devices and systems), communication theory and systems, information theory, signal and image processing, linear and nonlinear dynamics and control, scheduling and transportation systems, robotics, automation, discrete-event dynamical systems, identification and estimation, multisensor fusion and navigation, machine vision and control, computational mathematics, finite elements, optimal control, mathematics of large-scale power systems, and intelligent systems. Students are encouraged to participate in research activities as soon as they have received training in the fundamentals appropriate for a given research area.

Electrical engineering is the profession for those intrigued with electrical phenomena and eager to contribute their skills to a society increasingly dependent on electricity and sophisticated electronic devices. It is a profession of broad scope with many specialty careers designed for engineers who seek an endless diversity of career paths on the cutting edge of technology. The Institute of Electrical and Electronics Engineers publishes transactions on about 60 different topics, from aerospace and electronic systems to visualization and computer graphics. This is a breadth so great that no single electrical engineering department can hope to span it. Moreover, those fields themselves encompass still more fascinating specialties. We

give the basics; the future is yours to shape.

Systems science and engineering is based on an approach that views an entire system of components as an entity rather than simply as an assembly of individual parts; each component is designed to fit properly with the other components rather than to function by itself. The engineering and mathematics of systems is a rapidly developing field. It is one of the most modern segments of applied mathematics, as well as an engineering discipline. It is concerned with the identification, modeling, analysis, design, and control of systems that are potentially as large and complex as the U.S. economy or as precise and vital as a space voyage. Its interests run from fundamental theoretical questions to the implementation of operational systems. It draws on the most modern and advanced areas of mathematics. A very important characteristic of the systems field is that it and its practitioners must, of necessity, interact within a wide interdisciplinary environment, not only with various engineers and scientists but also with economists, biologists, or sociologists. Such interaction is both emphasized and practiced in the programs.

Our Department of Electrical and Systems Engineering offers a challenging basic curriculum, a broadly qualified faculty, and modern facilities so that you can receive a contemporary preparation for a career in electrical or systems engineering.

Undergraduate Degree Programs

The Department of Electrical and Systems Engineering (ESE) offers four undergraduate degree programs: two professional degrees and two nonprofessional degrees. The two professional degrees are the Bachelor of Science in Electrical Engineering (B.S.E.E.) and the Bachelor of Science in Systems Science and Engineering (B.S.S.S.E.). These two programs are fully accredited by the Accreditation Board for Engineering and Technology (ABET). The two nonprofessional degrees are the Bachelor of Science in Applied Science (Electrical Engineering) and the Bachelor of Science in Applied Science (Systems Science and Engineering). All programs have flexible curricula as well as specific requirements, and students may elect programs of study tailored to individual interests and professional goals.

In the professional B.S.E.E. curriculum, there are required courses in electrical circuits, signals and systems, digital systems, and electromagnetic fields, along with laboratory and design courses, which provide students with a common core of experience. Subsequently, one may orient the program toward breadth, so that many disciplines within the profession are spanned or toward a specialty with more emphasis on depth in one or more disciplines. Areas of specialization include modern electronics, applied physics, telecommunications, and signal and image processing.

Students in the professional B.S.S.S.E. degree program take required courses in engineering mathematics, signals and systems, operations research, numerical methods, and

automatic control systems, along with laboratory and design courses. This program emphasizes the importance of real-world applications of systems theory, and accordingly students are required to take a concentration of courses in one of the traditional areas of engineering. There are numerous elective courses in control theory and systems, signal processing, optimization, robotics, probability and stochastic processes, and applied mathematics.

Students who seek a broad undergraduate education in electrical engineering or systems science and engineering, but plan on careers outside of engineering, may pursue the nonprofessional degrees: Bachelor of Science in Applied Science (Electrical Engineering) and Bachelor of Science in Applied Science (Systems Science and Engineering). These programs of study are appropriate for students planning to enter a medical, law, or business school, and desire a more technical undergraduate experience than what otherwise may be available to them.

Students enrolled in any of the ESE undergraduate degree programs have a variety of opportunities to augment their educational experience at Washington University. Students may participate in the Premedical Engineering program or in the Cooperative Education program. Some students pursue double majors, in which two sets of degree requirements, either within or outside the ESE department, are satisfied concurrently. The Process Control Systems program is one such double-degree program, involving the degrees Bachelor of Science in Systems Science and Engineering (B.S.S.S.E.) and Bachelor of Science in Chemical Engineering (B.S.Ch.E). Finally, students may earn both an undergraduate and a graduate degree while maintaining undergraduate student status, through the School's five-year B.S.-M.S. program.

The ESE department also offers a variety of educational opportunities for students enrolled in other departments. These include the Second Major in Systems Science, which

Bachelor of Science in Electrical Engineering (Sample Program)

	<i>Units</i>	
	<i>Fall</i>	<i>Spring</i>
First Year		
Calculus II, III (Math 132, 132L, 233).....	4	4
General Physics I, II (Physics 117A, 118A).....	4	4
Computer Science elective (CSE 131).....	3	—
Introduction to Electrical and Computer Engineering (ESE 102)....	—	3
English Composition (E Comp 100/199).....	—	3
Humanities or social sciences elective.....	3	—
Elective (Freshman Seminar Engr 120).....	<u>1</u>	<u>—</u>
	15	14
Second Year		
General Chemistry I (Chem 111A).....	3	—
General Chemistry Laboratory I (Chem 151).....	2	—
Differential Equations (Math 217).....	4	—
Introduction to Electrical Networks (ESE 230).....	3	—
Engineering Mathematics (ESE 317).....	—	4
Introduction to Electronic Circuits (ESE 232).....	—	3
Introduction to Digital Logic and Computer Design (ESE 260).....	—	3
Engineering breadth elective.....	—	3
Humanities or social sciences elective.....	<u>3</u>	<u>3</u>
	15	16
Third Year		
Signals and Systems (ESE 351).....	3	—
Electrical Engineering electives.....	3	6
Probability and Statistics for Engineering (ESE 326).....	3	—
Engineering Electromagnetics Fundamentals (ESE 330).....	—	3
Electrical Engineering laboratory.....	—	3
Engineering breadth elective.....	3	—
Technical Writing (EP 310).....	3	—
Humanities or social sciences elective.....	<u>—</u>	<u>3</u>
	15	15
Fourth Year		
Electrical Engineering electives.....	3	3
Electrical Engineering laboratory.....	3	—
Electrical Engineering Design Projects (ESE 498).....	—	3
Humanities or social sciences electives.....	3	3
Free electives.....	<u>6</u>	<u>6</u>
	15	15

is open to students outside of the School of Engineering such as the College of Arts & Sciences, the Minor in Electrical Engineering, the Minor in Robotics, and the Minor in Manufacturing Engineering.

Bachelor of Science in Electrical Engineering

Educational Objectives of the B.S.E.E. Degree Program

The educational objectives of the B.S.E.E. degree program are to prepare those students with an interest in electrical engineering and closely related fields for a flexible future, whether that future is in a traditional engineering career, in doctoral-level research programs, or in other careers that require quantitative problem-solving skills and a working knowledge of modern electrical engineering. In particular, the graduates will be ready to work in the broad areas of electrical engineering, which encompass networks,

computers, digital and analog electronics, electromagnetic technology and signal analysis. Moreover the graduates will be able to design and analyze more advanced and complex systems in some of the following areas: solid-state devices and circuits; control components and systems; communication systems; digital signal processing; digital image processing; computer architecture, hardware, and software; and electrical power and energy.

This professional degree is accredited by the Accreditation Board for Engineering and Technology (ABET).

B.S.E.E. Degree Requirements

To obtain the degree Bachelor of Science in Electrical Engineering, students must complete a minimum of 120 units consistent with the residency and other applicable requirements of Washington University and the School of Engineering & Applied Science, and subject to the following departmental requirements.

Bachelor of Science in Systems Science and Engineering (Sample Program)

	<i>Units</i>	
	<i>Fall</i>	<i>Spring</i>
First Year		
Calculus II, III (Math 132, 132L, 233).....	4	4
General Physics I, II (Physics 117A, 118A).....	4	4
Matrix Algebra (ESE 309).....	—	3
Computer Science elective from the approved list (CSE 131).....	—	3
Humanities or social sciences electives.....	6	—
Elective (Freshman Seminar Engr 120).....	1	—
	15	14
Second Year		
General Chemistry I (Chem 111A).....	3	—
General Chemistry Laboratory I (Chem 151).....	2	—
Differential Equations (Math 217).....	4	—
Introduction to Systems Science and Engineering (ESE 251).....	3	—
Computer Science elective from the approved list (CSE 241).....	—	3
Engineering Mathematics (ESE 317).....	—	4
Probability and Statistics for Engineering (ESE 326).....	—	3
Humanities or social sciences electives.....	3	3
Engineering breadth elective.....	—	3
	15	16
Third Year		
Signals and Systems (ESE 351).....	3	—
Operations Research (ESE 403).....	3	—
Numerical Methods (ESE 411).....	3	—
Outside concentration.....	3	3
Systems science and engineering elective.....	—	3
Control Systems (ESE 441).....	—	3
Systems Engineering Laboratory (ESE 448).....	—	3
Technical Writing (EP 310).....	3	—
Humanities/social sciences elective.....	—	3
	15	15
Fourth Year		
Systems Design Project (ESE 499).....	3	—
Outside concentration.....	3	3
Humanities/social sciences elective.....	3	—
Elective Laboratory (ESE 447, 449, 488).....	3	—
Systems science and engineering electives.....	3	3
Electives.....	—	9
	15	15

1. Common Studies program of the School of Engineering & Applied Science. This includes courses in engineering, mathematics, chemistry, humanities, social sciences, and technical writing. The required chemistry sequence is Chem 111A-151, although Chem 111A-112A-151-152 is recommended.
2. Departmental breadth requirement: 9 units of courses from the School of Engineering & Applied Science, as follows.
 - A. One of the following two courses in computer science: CSE 126, CSE 131.
 - B. One of the following “traditional” engineering courses: MAE/CE 231, MAE/CE 241, MAE 232, MAE 235, ChE 320, ChE 351.
 - C. A second course from group (B) above, or one of the following: CSE 132, CSE 361S, ESE 251, Physics 217, EP 252, CE 253, MAE 325, Biol 2970.
3. Twenty-eight units of required ESE courses. ESE 102, ESE 230, ESE 232, ESE 260, ESE 317, ESE 326, ESE 330, ESE 351, ESE 498.
4. Two upper-level laboratory courses (6 units) from the following list: ESE 331, ESE 435, ESE 447, ESE 448, ESE 465, ESE 488.
5. Fifteen units of elective ESE courses in electrical engineering subjects, from the following list: ESE 330-399, ESE 400, 402, 405, 407, 409, 425, 430-499, ESE 503-589.
6. Design credits. Each undergraduate course in the School of Engineering & Applied Science has associated with it a certain number of design units, as set forth in the course description. Students must complete a selection of courses for which the accumulated design experience is 15 units. Selected off-campus engineering work experience may be considered for up to 1 unit of design credit upon presentation of an acceptable written report to the department. Such credits apply only to the design requirement and do not carry other credit toward graduation.
7. Limitations. No more than 3 credits of ESE 400, Independent Study, and no more than 3 credits of 500-level courses may be applied toward the B.S.E.E. degree.
8. Limitations. No more than 6 units of the combined units of ESE 400 (independent study) and ESE 497 (undergraduate research) may be applied toward the EE elective requirement (Item 5) of the BSEE degree. The balance of the combined units, if there are any left, is allowed as free electives to satisfy the requirement on the total number of units.
9. The courses taken to satisfy the following BSEE degree requirements must be taken for a letter grade and not on a pass/fail basis: Item 3 (required ESE courses), Item 4 (upper-level laboratory courses) and Item 5 (elective ESE courses).

Bachelor of Science in Systems Science and Engineering

This program educates you in the engineering and science of systems. Graduates are expected to have mathematical competence and knowledge of systems analysis, system design methods, numerical methods, differential equations, dynamic systems theory, automatic control theory, system stability, estimation, optimization, modeling, identification, simulation, and basic computer programming. You will have an engineering outlook and engineer's competence of your own and be able to interact fully with other engineers. You also will possess sufficient proficiency in computer use to design algorithms for simulation, estimation, control, and optimization.

The engineering departments of high-technology industries are staffed by large numbers of engineers with this type of expertise. However, graduates are by no means restricted to careers in traditional industry or in high-technology industries. Within the outlined framework, a salient feature of the program is its flexibility and interdisciplinary nature. It is possible for you to orient study toward preparation for systems science and engineering work in large complex systems such as transportation or power or communications networks or in societal systems such as the economy, ecology, the cities, or biological systems. You may wish to prepare for work along theoretical or professional lines. There is ample room in the program structure to accommodate all these interests and to make your preparation at the B.S. level ideally suited for your future plans and interests.

Educational Objectives of the B.S.S.S.E. Degree Program

The educational objectives of the degree of Bachelor of Science in Systems Science and Engineering are:

To prepare students to practice systems science and engineering in an industrial, government, business, or laboratory environment. This practice generally involves the design, operation, and management of complex systems, as well as the integration of many subsystems into one efficiently operating whole; and

To prepare students for graduate work in systems engineering and related areas. These areas include systems, electrical, mechanical, chemical, computer and civil engineering, and operations research, applied mathematics, economics, medicine, and business.

This professional degree is accredited by the Accreditation Board for Engineering and Technology (ABET).

B.S.S.S.E. Degree Requirements

The course sequence designed to achieve the type of education delineated above requires at least 120 units, satisfies the residency and other applicable requirements of Washington University and the School of Engineering & Applied Science, and meets the following program requirements:

1. Common Studies program of the School of Engineering & Applied Science. This

includes courses in engineering, mathematics, physics, chemistry, humanities, social sciences, and technical writing. The required chemistry sequence is Chem 111A-151.

2. Required courses in systems science and engineering: ESE 251, Introduction to Systems Science and Engineering (3 units); ESE 309, Matrix Algebra (3 units), or Math 429, Linear Algebra (3 units); ESE 317, Engineering Mathematics (4 units); ESE 326, Probability and Statistics for Engineering (3 units); ESE 351, Signals and Systems (3 units); ESE 403, Operations Research (3 units); ESE 411, Numerical Methods (3 units); ESE 441, Control Systems (3 units); ESE 448, Systems Engineering Laboratory (3 units); ESE 449, Digital Process Control Laboratory (3 units); and ESE 499, Systems Design Project (3 units).
3. Two of the following five computer science courses: CSE 131, Computer Science I (4 units); CSE 241, Algorithms and Data Structures (3 units); CSE 132, Computer Science II (4 units); CSE 126, Introduction to Computer Programming (4 units); or CSE 200, Engineering and Scientific Computing (3 units). Students are encouraged to take CSE 131, Computer Science I (4 units) and CSE 241, Algorithms and Data Structures (3 units). The other possible sequences are CSE 126 and CSE 241 or CSE 200 and CSE 126.
4. One of the following three laboratory courses: ESE 447 Robotics Laboratory (3 units), ESE 449 Digital Process Control Laboratory (3 units), ESE 488 Signals and Systems Laboratory (3 units)
5. Twelve units in elective courses in systems science and engineering: ESE 400 through 429; ESE 440 through 459; ESE 470 through 489; ESE 497; ESE 500 through 529; ESE 540 through 559.
6. Twelve units in engineering concentration outside of systems science and engineering. These units must all be taken in one of the following engineering areas: Bio-medical Engineering, Chemical Engineering, Civil Engineering, Computer Science and Engineering, Electrical Engineering (ESE 102; ESE 230 through 239; ESE 260 through 290; ESE 330 through 339; ESE 360 through 390; ESE 430 through 439; ESE 460 through 469; ESE 490 through 496; ESE 498; 530 through 539; ESE 560 through 589), or Mechanical and Aerospace Engineering. Of the 12 units, 9 units must be at the level 200 or higher. Sequences for concentrations in economics, mathematics, physics, premedicine, and other fields can be arranged with special departmental approval in exceptional cases to meet your specific needs. When a non-engineering discipline is chosen as the outside concentration, the student needs to pay special attention to the next requirement, which is required of all students, and make sure that enough engineering and design contents are obtained from the other courses. The use of basic required courses to fulfill the requirement for an outside concentration must be ap-

proved by the department.

7. The entire course sequence for the B.S.S.S.E. containing engineering topics of at least 45 units, including at least 15 units of engineering design experience. Note that each engineering course is assigned engineering topic units and engineering design units
(<http://registrar.seas.wustl.edu/courses/engineeringcourseattributes.htm>).
8. Limitations. No more than 6 units of the combined units of ESE 400 (independent study) and ESE 497 (undergraduate research) may be applied toward the SSE elective requirement (Item 5) of the B.S.S.S.E. degree. The balance of the combined units, if there are any left, is allowed as free electives to satisfy the requirement on the total number of units.
9. The courses taken to satisfy the following B.S.S.S.E. degree requirements must be taken for a letter grade and not on a pass/fail basis: Item 2 (required ESE courses), Item 4 (elective laboratory course) and Item 5 (elective ESE courses).

The program requirements for the B.S. in Systems Science and Engineering allow a double major with another program. Changes in the program to accommodate such double majors may be made with departmental approval.

Bachelor of Science in Applied Science (Electrical Engineering)

Students who do not plan to pursue a career in electrical engineering but seek a strong foundation in the principles of electrical engineering may choose the Bachelor of Science in Applied Science (Electrical Engineering). The program ensures that the student learns the foundations of electrical engineering through breadth requirements. In addition, there is flexibility in selecting upper-level courses to meet the student's individual objectives. This program may also be attractive for students interested in obtaining multiple degrees because the requirements are less strict than for the B.S.E.E. degree. Historically students have matched a degree in electrical engineering with degrees in other engineering disciplines, in the natural sciences, in music, in history, and in business; other combinations are possible. This may also be an attractive option for students planning graduate studies in a variety of disciplines including medicine, law, or business. This nonprofessional degree is not accredited by the Accreditation Board for Engineering and Technology (ABET).

The degree requirements include the residency and general requirements of the University and the School of Engineering & Applied Science and:

	<i>Units</i>
Humanities and social sciences electives ..18	
Mathematics, science, and engineering electives	24
Required courses in electrical engineering*	9

*The required courses are ESE 102, ESE 230, and ESE 232.

Upper-level elective courses in electrical engineering†	21
Free electives	48
	120

The program must include at least 48 units at the 300 level or higher.

Bachelor of Science in Applied Science (Systems Science and Engineering)

This program provides you with the opportunity to prepare your academic career with maximum flexibility, but with enough organization to assure substantive, consistent training in systems science methodology and outlook. This program is recommended if you wish to pursue a course of study that does not follow conventional lines. It is an especially advantageous component for a double major in association with mathematics, physics, economics, or another engineering discipline. The program can be planned to provide a desirable background for graduate work in biological, medical, or management fields. This nonprofessional degree is not accredited by the Accreditation Board for Engineering and Technology (ABET).

The degree requirements include the residency and general requirements of the University and the School of Engineering & Applied Science and:

	<i>Units</i>
Humanities and social sciences electives ..	18
Mathematics, science, and engineering electives, including at least 24 units of courses in systems science and engineering‡	48
Free electives	54
	120

The program must include at least 48 units at the 300 level or higher.

A Second Major in Systems Science

A second major is ideal for study in many areas such as physics, chemistry, economics, and computational biology. Students in undergraduate divisions other than engineering now have the opportunity to pursue a second major in the Department of Electrical and Systems Engineering in the School of Engineering & Applied Science.

The requirements for a second major in systems science are: (1) ESE 251 (Introduction to Systems Science and Engineering), (2) ESE 309 (Matrix Algebra), (3) ESE 351 (Signals and Systems), (4) ESE 403 (Operations Research), (5) one of the following: ESE 317 (Engineering Mathematics), ESE 326 (Probability and Statistics for Engineering), or ESE 441 (Control Systems Design), (6) eight 3-unit ESE courses in the Systems area chosen from ESE 400 through 429; ESE 440 through 459; ESE 470 through 489; 500 through 529; ESE 540 through 559.

†The upper-level elective courses in electrical engineering are ESE 260, ESE 326, ESE 330-399, ESE 400, 402, 405, 407, 409, 425, 430-499, ESE 503-589.

‡The systems science courses are ESE 251; ESE 309; ESE 317; ESE 326; ESE 351; ESE 400 through 429; ESE 440 through 459; ESE 470 through 489; 500 through 529; ESE 540 through 559.

Students may petition to substitute systems-oriented courses from other disciplines for two of these eight courses (for example, courses in computational physics, mathematical economics, or computational mathematics).

Within this second major in systems science, areas of concentration are possible in: robotics, control systems, and operations research.

This totals from 34 to 40 units of systems science, depending on students' use of the substitution option for upper-level electives. To design a customized program, contact the departmental chair or the director of the undergraduate programs.

Minor in Electrical Engineering

Students who complete 15 units of course work in electrical engineering subjects at Washington University as specified below may be awarded a Minor in Electrical Engineering. The required courses for the minor are: ESE 102, Introduction to Electrical and Computer Engineering; ESE 230, Introduction to Electrical Networks; ESE 330, Engineering Electromagnetics I; and ESE 351, Signals and Systems. Students may select one electrical engineering elective course from the following list: ESE 232, ESE 260, ESE 330-399, and ESE 430-499, with the exception of ESE 431.

Minor in Robotics

Robotic systems have wide application in modern technology and manufacturing. Robots can vary in complexity and use, from microrobots for surgical procedures to moderate-size robots common in manufacturing and undersea exploration to macrorobots used for disposal of nuclear wastes and as arms on space-station modules.

The program designed for a minor in robotics provides a fundamental understanding of robotic operation and preliminary training in design and use of robots.

Prerequisites for the required courses are: Calculus, Math 217 (Differential Equations), Physics 117A, 118A (General Physics I, II), and CSE 131 (Computer Science I) or CSE 126 (Introduction to Computer Programming) or CSE 200 (Engineering and Scientific Computing) or MAE 265 (Mechanical Engineering Computations) or equivalent.

A total of six courses are required, including the following four courses:

MAE 232. Engineering Mechanics II

ESE 351. Signals and Systems

or

MAE 417. Dynamic Response of Physical Systems

ESE 446. Robotics: Dynamics and Control

ESE 447. Robotics Laboratory

and two courses chosen with the approval of the director of the program for a minor in robotics. Suggested courses are:

CSE 313A. Artificial Intelligence Laboratory

CSE 452A. Computer Graphics

CSE 546T. Computational Geometry

MAE 322A. Mechanical Design and Machine Elements

ESE 441. Control Systems

or

MAE 431. Control Systems I

or

MAE 433. Aircraft Flight Dynamics and Controls

ESE 407. Analysis and Simulation of Discrete Event Systems

ESE 435. Electrical Energy Laboratory

To find out more about this minor, contact the department chair or the director of the program for a minor in robotics.

Minor in Manufacturing Engineering

The Minor in Manufacturing Engineering is offered jointly through the Departments of Mechanical and Aerospace Engineering and Electrical and Systems Engineering. It is available to undergraduate students pursuing an ABET-accredited B.S. degree in engineering. Students develop a solid, broad-based background in engineering, arts, humanities, and social sciences with an emphasis in manufacturing engineering. The main areas of the manufacturing engineering minor are:

- **Manufacturing:** Plant layout, inventory, materials handling, automation, fabrication, work flow, quality control, and cost control.
- **Operations Research:** Decision-making, economics, information systems, and mathematical models and simulations in manufacturing and distribution.
- **Human Factors:** Psychology, physiology, biomechanics, human-machine interface, and their effects on productivity and worker safety.

The curriculum emphasizes manufacturing processes and automation, quality control and operations research, modeling and simulation, economics and psychology, ergonomics and human factors. Students have the opportunity to gain experience with the fundamentals of manufacturing through a manufacturing processes practicum, MAE 204, Introduction to Manufacturing Processes, in the freshman or sophomore year. The first two years of the curriculum comprise fundamental engineering courses, math, physics, arts, humanities, and social sciences. In addition, students are introduced to manufacturing through courses in manufacturing processes, industrial and organizational psychology, and human factors. During the junior and senior years, students learn cutting-edge technology such as robotics, computer-aided design, and manufacturing.

A minimum of 18 units of courses selected from the following schedule are required for the minor. Fifteen of the units for the minor must be at least 200-level courses from the School of Engineering & Applied Science.

Required course:

MAE 204. Introduction to Manufacturing Processes

Elective courses (select at least two from the following list):

ESE 403. Operations Research

ESE 405. Reliability and Quality Control

MAE 424. Manufacturing Processes

Elective courses (select the remaining courses, for a minimum of six courses, from the above list and/or from the following two lists. Five of the six courses must be at least 200-level School of Engineering & Applied Science courses.)

ESE 407. Analysis and Simulation of Discrete Event Systems

ESE 415. Optimization

ESE 446. Robotics: Dynamics and Control

ESE 447. Robotics Laboratory

CE/EP 474. Economic Decisions in Engineering

MAE 529. Flexible Manufacturing Automation

MAE 550. Computer-Integrated Manufacturing

MAE 551. Computer-Controlled Manufacturing Processes

MAE 553. Facilities Design

MAE 556. Optimization Methods in Engineering

All professional engineering Bachelor of Science degrees require 18 units of humanities and social sciences (H & SS). Three units of H & SS from the list below can count directly toward the Minor in Manufacturing Engineering. A student accrues additional benefit from the minor by focusing on an H & SS concentration in economics or psychology.

Econ 103B. Microeconomics

Econ 104B. Macroeconomics

Psych 214. Industrial and Organizational Psychology I

Psych 314. Industrial and Organizational Psychology II

Psych 430. Psychology and Technology

Psych 440. Psychology of People and Ordinary Objects

CE/EP 456. Law and Society

B.S.-M.S. Programs in Electrical and Systems Engineering

Students enrolled in any of the professional undergraduate degree programs in the School of Engineering & Applied Science may choose to extend their educational experience, while maintaining undergraduate student status, by enrolling in the five-year B.S.-M.S. program. The degrees Master of Science in Electrical Engineering (M.S.E.E.), Master of Science in Systems Science and Mathematics (M.S.S.S.M.), and Master of Control Engineering (M.C.E.) are all participating graduate degrees, and these may be combined with any undergraduate

degree that provides the appropriate background.

Common Requirements for the B.S.-M.S. Programs

General requirements for the B.S.-M.S. program include the residency and other applicable requirements of the University and the School of Engineering & Applied Science, which are found elsewhere in this catalog. One such requirement states that the grade point average based on all the courses taken under the B.S.-M.S. program (including those courses applied to the B.S. degree) must meet the minimum value required for the M.S. degree. In summary, students must complete all the degree requirements for both the undergraduate and graduate degrees (at least 120 units plus 30 units, 150 units) but are not required to complete all the undergraduate degree requirements first.

Requirements for the B.S.-M.S.E.E. Degree

The requirements for the M.S.E.E. degree include a total of 30 units, with 15 units being in graduate-level electrical engineering courses (ESE 513, ESE 516, ESE 520-589), and the other 15 units being in technical electives (not necessarily from the ESE department but approved by the ESE department) at the senior level or above. A maximum of one 500-level cross-listed ESE course, whose home department is outside of ESE, may be applied toward the 15-credit graduate-level course requirement. At least 15 units of the 30 total units applied toward the M.S.E.E. degree must be in ESE courses which, if cross-listed, have as the home department the Department of Electrical and Systems Engineering. Both a thesis option and a course option are available.

Requirements for the B.S.-M.S.S.S.M. Program

Students in the joint B.S.-M.S. program seeking the degree of the M.S. in Systems Science and Mathematics are required to fulfill the following additional requirements: a total of 30 units, with at least 15 units at the graduate level, and the remaining units at the senior level or above. Required courses (15 units) for the M.S. degree include: ESE 520, 551, 552, 553, and either ESE 415, 516, or 556. The remaining courses in the program may be selected from senior or graduate level courses in Electrical and Systems Engineering or elsewhere in the University. Courses outside of Electrical and Systems Engineering must be in technical subjects relevant to systems science and mathematics and require the department's approval.

Requirements for the B.S.-M.C.E. Program

Students in the joint B.S.-M.C.E. program seeking the degree of the Master of Control Engineering are required to fulfill the following additional requirements: a total of 30 units, with at least 15 units at the graduate level and the remaining units at the senior level or above. Required courses (15 units)

for the M.C.E. degree include: ESE 525, 541, 543, 548, and at least one of the following courses: ESE 551, 552, 553. The elective courses (15 units) must be selected from the following: ESE 407, 411, 415, 442, 446, ESE 500, 501, 502, 511, 512, and 520.

Additional information is available from the department or the online graduate bulletin of the School of Engineering & Applied Science.

Undergraduate Courses

ESE 100. Independent Study

Credit 0 units.

ESE 102. Introduction to Electrical and Systems Engineering

A comprehensive introduction to the theory and practice of electrical and computer engineering. An application area such as multimedia communication systems is used as a theme throughout to motivate the diverse elements of the course. Many fundamental aspects of engineering are covered, including physics and physical devices, mathematical modeling, analytical problem-solving, engineering design, and laboratory experimentation. Course topics and skills are integrated in design projects covering contemporary applications of interest to the instructor and student. Prerequisite: Phys 117A, and Math131 or 141. Corequisite: CSE 131 or 126, plus MATLAB programming. Open only to freshmen and sophomores. Credit 3 units.

ESE 141. Introductory Robotics

A hands-on introduction to robotics. Project-oriented course where students build and program a robot guided by upper-division students. Friendly competition at the end of semester. Students will gain electrical lab experience, programming experience, and a guided introduction into the field of robotics. Open only to freshmen and sophomores. Credit 1 unit.

ESE 145. Computer Control of a Robot

This course is designed for engineering freshmen. Students learn to control a robot via a personal computer in the Systems Engineering Laboratory. Specifically, they learn the basics of programming, the interface between the computer and the robot, the use of the special software for controlling the interface, and ultimately the real-time control of the robot. The course emphasizes team projects in which a group of students develop computer programs for controlling a robot. Credit 2 units.

ESE 204. Introduction to Manufacturing Processes

Same as MAE 204.

ESE 230. Introduction to Electrical Networks

Elements, sources, and interconnects. Ohm's and Kirchhoff's laws, superposition and Thevenin's theorem; the resistive circuit, transient analysis, sinusoidal analysis, and frequency response. Prerequisite: Phys 118A. Corequisite: Math 217. Credit 3 units.

ESE 232. Introduction to Electronic Circuits

Introduction to contemporary electronic devices and their circuit applications. Terminal characteristics of active semiconductor devices. Incremental and D-C models of junction diodes, bipolar transistors (BJTs), and metal-oxide semiconductor field effect transistors (MOSFETs) are developed and used to design single- and multistage amplifiers. Models of the BJT and MOSFET in cutoff and saturation regions are used to design digital circuits. Prerequisite: ESE 230. Credit 3 units.

ESE 233. Electrical and Electronics Laboratory

Lectures and laboratory exercises related to sophomore topics in introductory networks and basic

electronics. Prerequisite: ESE 230. Credit 3 units.

ESE 251. Introduction to Systems Science and Engineering

Introduction to the methodology of systems engineering: mathematical modeling, time- and frequency-responses, system identification, control system design. Each lecture, which provides a theoretical overview of a different phase of control system design, is followed by hands-on laboratory work, which emphasizes the use of software for both analysis and design and the actual implementation of each design on the laboratory hardware. (Not open to seniors or graduate students.) Prerequisite: Math 233. Corequisite: Math 217. Credit 3 units.

ESE 260. Introduction to Digital Logic and Computer Design

Same as CSE 260M.

ESE 309. Matrix Algebra

Same as Math 309.

ESE 317. Engineering Mathematics

The Laplace transform and applications; series solutions of differential equations, Bessel's equation, Legendre's equation, special functions; matrices, eigenvalues, and eigenfunctions; vector analysis and applications; boundary value problems and spectral representations; Fourier series and Fourier integrals; solution of partial differential equations of mathematical physics. Prerequisite: Math 217 or equivalent. Credit 4 units.

ESE 326. Probability and Statistics for Engineering

Study of probability and statistics together with engineering applications. Probability and statistics: random variables, distribution functions, density functions, expectations, means, variances, combinatorial probability, geometric probability, normal random variables, joint distribution, independence, correlation, conditional probability, Bayes theorem, the law of large numbers, the central limit theorem. Applications: reliability, quality control, acceptance sampling, linear regression, design and analysis of experiments, estimation, hypothesis testing. Examples are taken from engineering applications. Prerequisite: Math 233 or equivalent. Credit 3 units.

ESE 330. Engineering Electromagnetics Principles

Electromagnetic theory as applied to electrical engineering: vector calculus; electrostatics and magnetostatics; Maxwell's equations, including Poynting's theorem and boundary conditions; uniform plane-wave propagation; transmission lines, TEM modes, including treatment of general lossless lines, and pulse propagation; introduction to guided waves; introduction to radiation and scattering concepts. Prerequisite: ESE 317, or equivalent. Credit 3 units.

ESE 331. Electronics Laboratory

Laboratory exercises for juniors covering topics in computer-aided measurements, computer simulation, and electronic circuits. Prerequisite: ESE 102, 232. Credit 3 units.

ESE 332. Power, Energy, and Polyphase Circuits

Fundamental concepts of power and energy; electrical measurements; physical and electrical arrangement of electrical power systems; polyphase circuit theory and calculations; principal elements of electrical systems such as transformers, rotating machines, control, and protective devices, their description and characteristics; elements of industrial power system design. Prerequisite: ESE 230. Credit 3 units.

ESE 334. Network Analysis

Theoretical and practical aspects of electrical networks. Loop and nodal analysis of multiport net-

works. Transfer functions, admittance and impedance functions, and matrices. Magnitude and phase relations. Butterworth, Chebyshev, and other useful network response functions. Network theorems. Computer-aided design. Synthesis of passive (LC, RC, RLC) networks and of active (RC) networks. Prerequisite: ESE 260/CSE 260M. Credit 3 units.

ESE 336. Principles of Electronic Devices

Introduction to the solid-state physics of electronic materials and devices, including semiconductors, metals, insulators, diodes, and transistors. Crystal growth technology and fundamental properties of crystals. Electronic properties and band structure of electronic materials, and electron transport in semiconductor materials. Fabrication of pn junction diodes, metal-semiconductor junctions, and transistors and integrated-circuit chips. Fundamental electrical properties of rectifying diodes and light-emitting diodes, bipolar transistors, and field-effect transistors. Device physics of diodes and transistors, large-signal electrical behavior, and high-frequency properties. Prerequisite: Phys 118A. Credit 3 units.

ESE 337. Electronic Devices and Circuits

Introduction to semiconductor electronic devices: transistors and diodes. Device electrical DC and high-frequency characteristics. Bipolar transistors, field-effect transistors, and MOS transistors for analog electronics applications. Transistor fabrication as discrete devices and as integrated-circuit chips. Large-signal analysis of transistor amplifiers: voltage gain, distortion, input resistance and output resistance. Analysis of multitransistor amplifiers: Darlington, Cascode, and coupled-pair configurations. Half-circuit concepts, differential-mode gain, common-mode gain, and differential-to-single-ended conversion. Transistor current sources, active loads, and power-amplifier stages. Applications to operational amplifiers and feedback circuits. Prerequisite: ESE 232. Credit 3 units.

ESE 351. Signals and Systems

Introduction to concepts and methodology of linear dynamic systems in relation to discrete- and continuous-time signals. Representation of systems and signals. Fourier, Laplace, and Z-transforms and convolution. Input-output description of linear systems: impulse response, transfer function. State-space description of linear systems: differential and difference equation description, transition matrix. Time-domain and frequency-domain system analysis: transient and steady-state responses, system modes, stability, frequency spectrum. System design: filter, modulation. Continuity is emphasized from analysis to synthesis and implementation. Use of MATLAB. Prerequisite: Math 217, Physics 117A-118A. Corequisite: ESE 317. Credit 3 units.

ESE 362. Computer Architecture

Same as CSE 362M.

ESE 400. Independent Study

Opportunities to acquire experience outside the classroom setting and to work closely with individual members of the faculty. A final report must be submitted to the department. Not open to first-year or graduate students. Consult adviser. Hours and credit to be arranged. Credit variable, maximum 3 units.

ESE 402. Computer-Aided Design Systems

Introduction to computer-aided techniques in the solution of network and electronic design problems, including filters; analysis of linear and nonlinear circuits; methods for numerical integration, evaluation of the Fourier integral; numerical methods for solving differential equations, automated methods for design; sparse matrix techniques. Use of problem-oriented languages such as SPICE. Methods for the analysis and design of digital cir-

cuits and systems. Prerequisite: ESE 232, 351. Credit 3 units.

ESE 403. Operations Research

Same as ESE 503.

Introduction to the mathematical aspects of various areas of operations research, with additional emphasis on problem formulation. This is a course of broad scope, emphasizing both the fundamental mathematical concepts involved, and also aspects of the translation of real-world problems to an appropriate mathematical model. Subjects to be covered include linear and integer programming, network problems, and dynamic programming. For graduate credit, a term project is required. Prerequisite: Math 217 and familiarity with matrix or linear algebra, or permission of instructor. Credit 3-units.

ESE 404. Applied Operations Research

Application of deterministic and stochastic operations research techniques to real-world problems. Emphasis is given to linear programming and simulation. The nature of the problems ranges from logistics and planning to operations management. The systems to be examined are transportation systems, supply chain systems, medical care delivery systems, urban service systems, management systems, manufacturing systems. Emphasis is placed on the problem formulation of real-world problems, the use of computer software and the analysis of the solutions. Prerequisite: ESE 326 and ESE 403 or equivalent. Credit 3 units.

ESE 405. Reliability and Quality Control

Same as ESE 505.

An integrated analysis of reliability and quality control function in manufacturing. Statistical process control, acceptance sampling, process capability analysis, reliability prediction, design, testing, failure analysis and prevention, maintainability, availability, and safety are discussed and related. Qualitative and quantitative aspects of statistical quality control and reliability are introduced in the context of manufacturing. For graduate credit, a term project is required. Prerequisite: ESE 326 or equivalent. Credit 3 units.

ESE 407. Analysis and Simulation of Discrete Event Systems

Study of the dynamic behavior of discrete event systems and techniques for analyzing and optimizing the performance of such systems. Covers both classical and recent approaches. Classical topics include Markov chains, queueing theory, networks of queues, related algorithms, and simulation methods. Recent approaches include decomposition and aggregation, approximation, and perturbation analysis of nonclassical systems. Applications are drawn from various areas, including production systems. Prerequisite: Math 217, ESE 326 or equivalent, CSE 126 or equivalent. Credit 3 units.

ESE 408. Optimal Control of Renewable Resources

Formulation and analysis of mathematical models for optimal management of renewable resources. Dynamics of populations. Economic and biological considerations. Elements of optimal control and dynamic system theory. Continuous and discrete-time deterministic systems, including considerations of growth, aging, effects of discount rates, and problems of interacting populations. Optimal policies and their implementation. Prerequisite: ESE 317. Prerequisite: senior standing. Credit 3 units.

ESE 409. Patents and Other Ways to Protect Inventions

Analysis of the practical and legal steps with which an electrical engineer should be familiar regarding patent protection for electrical and electronic inventions. The course focuses primarily on

the patent protection provided under the U.S. patent laws. Recent U.S. patents relating to electrical and electronic inventions are examined to better understand patents and the protection provided by patents. Copyrights, trademarks, trade secret, unfair competition and mask work protection are also discussed. The protection and marketing of ideas is also considered. The course provides a pragmatic review of intellectual property from an electrical engineering perspective to prepare for the issues commonly faced in industry and business today. Prerequisite: senior standing. Credit 3 units.

ESE 411. Numerical Methods

Same as ESE 511, CSE 405A.

An introduction to current numerical methods: root finding, direct solution of linear systems, iterative solution of linear systems, interpolation, data fitting, numerical differentiation and integration, application to physical and engineering problems. For graduate credit, a term project is required. Prerequisite: Math 217, CSE 131, 126 or 200 or equivalent, and sophomore standing. Credit 3 units.

ESE 414. Calculus of Variations

Same as ESE 514.

Introduction to the theory and applications of the calculus of variations. Theory of functionals; variational problems for an unknown function; Euler's equation; variable end-point problems; variational problems with subsidiary conditions; sufficient conditions for extrema: applications to optimum control and/or to other fields. For graduate credit, a term project is required. Prerequisite: ESE 317 or equivalent. Credit 3 units.

ESE 415. Optimization

Same as ESE 515.

Optimization problems with and without constraints. The projection theorem. Convexity, separating hyperplane theorems; Lagrange multipliers, Kuhn-Tucker-type conditions, duality; computational procedures. Optimal control of linear dynamic systems; maximum principles. Use of optimization techniques in engineering design. For graduate credit, a term project is required. Prerequisite: ESE 309 or permission of instructor. Credit 3 units.

ESE 416. Complex Variables

Analytic functions, line integrals, the Cauchy integral formula, power series, residues, poles, conformal mapping, and applications. Prerequisite: Engineering ESE 317, Math 318, or Math 411. Credit 3 units.

ESE 425. Random Processes and Kalman Filtering

Same as ESE 525.

Probability and random variables; random processes; linear dynamic systems and random inputs; autocorrelation; spectral density; the discrete Kalman filter; applications; the extended Kalman filter for nonlinear dynamic systems. Kalman filter design using a computer package, mean square estimation; maximum likelihood; Wiener filtering and special factorization, LQG/LTR control. For graduate credit, a term project is required. Prerequisite: ESE 326 or equivalent. Credit 3 units.

ESE 428. Probability

Same as Math 493.

ESE 430. Engineering Electromagnetics Applications

Study of important applications of electromagnetic theory. Solution of electrostatic and magnetostatic problems involving Laplace and Poisson's equations subject to boundary conditions. Maxwell's equations, including boundary conditions for dielectrics and conductors, reflection and transmission characteristics with effects due to losses. Study of guided waves in rectangular and optical

wave guides, including effects of dispersion. S-parameters and transmission networks, including S-matrix properties, relation to impedance, reflection coefficient, VSWR, and Smith chart. Study of antennas, including exposure to terminology and thin-wire antennas. Prerequisite: ESE 330. Credit 3 units.

ESE 431. Quantum Electronics

Same as Physics 471.

ESE 432. Advanced Analog Electronics

Design and analysis of analog electronic circuits and operational amplifiers for use in control systems, instrumentation and telecommunications. Large-signal analysis of high-power circuits including transfer characteristics, distortion, power efficiency, impedance, and high-frequency behavior. Frequency response, stability and frequency-compensation of multistage feedback amplifiers. Fundamental treatment of electronic noise in circuits including thermal noise, shot noise, and 1/f noise. Review of general-purpose op-amps, wide-band video op-amps, and high-performance precision operational amplifiers and chip layout. Linear and nonlinear analog applications, including power-booster amplifiers, precision rectifiers, differentiators, integrators, phase-locked loops, high-frequency analog multipliers, and mixers. Prerequisite: ESE 337. Credit 3 units.

ESE 433. Radio Frequency and Microwave Technology for Wireless Systems

Same as ESE 533.

Focus is on the components and associated techniques employed to implement analog and digital radio frequency (RF) and microwave (MW) transceivers for wireless applications, including: cell phones; pagers; wireless local area networks; global positioning satellite based devices; and RF identification systems. A brief overview of system-level considerations is provided, including modulation and detection approaches for analog and digital systems; multiple-access techniques and wireless standards; and transceiver architectures. Focus is on RF and MW: transmission lines; filter design; active component modeling; matching and biasing networks; amplifier design; mixer design. Prerequisite: ESE 330. Credit 3 units.

ESE 434. Solid-State Power Circuits and Applications

Study of the strategies and applications power control using solid-state semiconductor devices. Survey of generic power electronic converters. Applications to power supplies, motor drives, and consumer electronics. Introduction to power diodes, thyristors, and MOSFETs. Prerequisite: ESE 232, 351. Credit 3 units.

ESE 435. Electrical Energy Laboratory

Experimental studies of principles important in modern electrical energy systems. Topics include: power measurements, single-phase transformers, batteries, three-phase circuits and transformers, static frequency converters, thermoelectric cooling, solar cells, electrical lighting, induction commutator, and brushless motors, synchronous machines. Corequisite: ESE 332. Credit 3 units.

ESE 436. Advanced Electronic Devices

The physics of state-of-the-art electronic devices. Devices to be studied include novel diode structures (light-emitting diodes, semiconductor laser diodes), high-power devices (SCRs, TRIACs, and power transistors), and high-speed devices. High-speed devices include heterojunction bipolar (HBT), heterojunction field-effect (HFET), and high electron mobility (HEMT) transistors used in very high-speed systems (up to 100 GHz). Advanced bipolar transistors (poly-Si), used in high-speed microprocessors, examined; also materials properties, transport mechanisms, band structure, and physics of these devices. Prerequisite: ESE

336. Credit 3 units.

ESE 438. Applied Optics

Topics relevant to the engineering and physics of conventional as well as experimental optical systems and applications explored. Items addressed include geometrical optics, Fourier optics such as diffraction and holography, polarization, and optical birefringence such as liquid crystals, and nonlinear optical phenomena and devices. Prerequisite: ESE 330 or equivalent. Credit 3 units.

ESE 441. Control Systems

Same as ESE 541, ChE 431, MAE 431.

Introduction to theory and practice of automatic control for continuous-time systems. Representations of the system: transfer function, block diagram, signal flow graph, differential state equation and output equation. Analysis of control system components. Transient and steady-state performance. System analysis: Routh-Hurwitz, root-locus, Nyquist, Bode plots. System design: PID controller, lead-lag compensators, pole placement via state feedback, observer, stability margins in Nyquist and Bode plots. Emphasis on design principles and their implementation. Design exercises with MATLAB for specific engineering problems. Same as ESE 541 which requires a project. Prerequisite: ESE 351 or MAE 417. Credit 3 units.

ESE 442. Digital Control Systems

The control of physical systems with digital computer, microprocessor, or special-purpose digital hardware is becoming very common. Course continues ESE 441 to develop models and mathematical tools needed to analyze and design these digital, feedback-control systems. Linear, discrete dynamic systems. The Z-transform. Discrete equivalents to continuous transfer functions. Sampled-data control systems. Digital control systems design using transfer and state-space methods. Systems composed of digital and continuous subsystems. Quantization effects. System identification. Multivariable and optimum control. Prerequisites: ESE 351 and ESE 441, or MAE 431 or permission of instructor. Credit 3 units.3

ESE 443. Control Systems Design by State-Space Methods

Same as ESE 543.

Advanced design and analysis of control systems by state-space methods: review of linear algebra (vector space, change of basis, diagonal, and Jordan forms), linear dynamic systems (modes, stability, controllability, state feedback, observability, observers, canonical forms, output feedback, separation principle, and decoupling), nonlinear dynamic systems (stability, Lyapunov methods), approximate linearization, feedback linearization. Design exercises with CAD (computer-aided design) packages for engineering problems. Prerequisite: MAE 417, ESE 351, or permission of instructor. ESE 543 requires a project. Credit 3 units.

ESE 446. Robotics: Dynamics and Control

Homogeneous coordinates and transformation matrices. Kinematic equations and the inverse kinematic solutions for manipulators, the manipulator Jacobian, and the inverse Jacobian. General model for robot arm dynamics, complete dynamic coefficients for six-link manipulator. Synthesis of manipulation control, motion trajectories, control of single- and multiple-link manipulators, linear optimal regulator. Model reference adaptive control, feedback control law for the perturbation equations along a desired motion trajectory. Design of the control system for robotics. Prerequisite: ESE 317, 351, or 441, and knowledge of a programming language. Credit 3 units.

ESE 447. Robotics Laboratory

Introduces the students to various concepts such as modeling, identification, model validation and

control of robotic systems. The course focuses on the implementation of identification and control algorithms on a two-link robotic manipulator (the so-called pendubot) that will be used as an experimental testbed. Topics include: Introduction to the mathematical modeling of robotic systems; nonlinear model, linearized model; Identification of the linearized model: input-output and state-space techniques; Introduction to the identification of the nonlinear model: energy-based techniques; model validation and simulation; stabilization using linear control techniques; a closer look at the dynamics; stabilization using nonlinear control techniques. Prerequisite: ESE 351 or MAE 417. Credit 3 units.

ESE 448. Systems Engineering Laboratory
Experimental study of real and simulated systems and their control. Identification, input-output analysis, design and implementation of control systems. Noise effects. Design and implementation of control laws for specific engineering problems. Corequisite: ESE 441 and knowledge of a programming language. Credit 3 units.

ESE 449. Digital Process Control Laboratory
Same as ChE 433.

ESE 460. Switching Theory
Same as CSE 460T.

ESE 462. Computer Systems Design
Same as CSE 462M.

ESE 463. Digital Integrated Circuit Design and Architecture
Same as CSE 463M.

ESE 464. Digital Systems Engineering
Same as CSE 464M.

ESE 465. Digital Systems Laboratory
Same as CSE 465M.

ESE 467. Embedded Computing Systems
Same as CSE 467S.

ESE 471. Communications Theory and Systems
Introduction to the concepts of transmission of information via communication channels. Amplitude and angle modulation for the transmission of continuous-time signals. Analog-to-digital conversion and pulse code modulation. Transmission of digital data. Introduction to random signals and noise and their effects on communication. Optimum detection systems in the presence of noise. Elementary information theory. Overview of various communication technologies such as radio, television, telephone networks, data communication, satellites, optical fiber, and cellular radio. Prerequisite: ESE 351 and ESE 326. Credit 3 units.

ESE 482. Digital Signal Processing
Introduction to analysis and synthesis of discrete-time linear time-invariant (LTI) systems. Discrete-time convolution, discrete-time Fourier transform, z-transform, rational function descriptions of discrete-time LTI systems. Sampling, analog-to-digital conversion, and digital processing of analog signals. Techniques for the design of finite impulse response (FIR) and infinite impulse response (IIR) digital filters. Hardware implementation of digital filters and finite-register effects. The Discrete Fourier Transform and the Fast Fourier Transform (FFT) algorithms. Prerequisite: ESE 351. Credit 3 units.

ESE 483. Medical Imaging
Same as BME 494, ESE 583.
Introduction to the mathematical, physical, and engineering principles underlying modern medical imaging systems including x-ray computed tomography, ultrasonic imaging, and magnetic resonance imaging. Mathematical tools including Fourier analysis and the sampling theorem; the Radon transform and related transforms; reconstruction algorithms for computed tomography; to-

mographic imaging with diffracting sources; Bloch equations; free induction decay, spin echoes and gradient echoes; one-dimensional Fourier magnetic resonance imaging; three-dimensional magnetic resonance imaging and slice excitation. ESE583 requires a project. Prerequisite: ESE 351 Credit 3 units.

ESE 488. Signals and Systems Laboratory
A laboratory course designed to complement the traditional EE course offerings in signal processing, communication theory, and automatic control. Signals and systems fundamentals: continuous-time and discrete-time linear time-invariant systems, impulse and step response, frequency response, A/D and D/A conversion. Digital signal processing: FIR and IIR digital filter design, implementation and application of the Fast Fourier Transform. Communication theory: baseband, digital communication, amplitude modulation, frequency modulation, bandpass digital communication. Automatic control: system modeling, feedback control systems, closed-loop transient and frequency response. Laboratory experiments involve analog and digital electronics, and mechanical systems. Computer workstations and modern computational software used extensively for system simulation, real-time signal processing, and discrete-time automatic control. Prerequisite: ESE 351. Corequisite: ESE 482. Credit 3 units.

ESE 497. Undergraduate Research
Undergraduate research under the supervision of a faculty member. The scope and the depth of the research must be approved by the faculty member prior to enrollment. A written final report and a Web page describing the research are required. Credit variable, maximum 3 units.

ESE 498. Electrical Engineering Design Projects
Working in teams, students address design tasks assigned by faculty. Each student participates in one or more design projects in a semester. Projects are chosen to emphasize the design process, with the designers choosing one of several paths to a possible result. Collaboration with industry and all divisions of the University is encouraged. A written report, a Web page, and oral presentations are required. Prerequisite: senior standing. Credit 3 units.

ESE 499. Systems Design Project
Term design project, directed by a faculty adviser, requiring use of systems theory, techniques, engineering, and concepts. This project is carried out in cooperation with either local industry or university laboratories. The solution of a real technological or societal problem is carried through completely, starting from the stage of initial specification, proceeding with the application of systems engineering methods, and terminating with an actual solution. Required documents are a written proposal and a final report on the project. An oral presentation of the project and a Web page also are required. Prerequisite: SSE senior standing. Credit 3 units.

Graduate Courses

ESE 500. Independent Study

ESE 501. Mathematics of Modern Engineering I

ESE 502. Mathematics of Modern Engineering II

ESE 503. Operations Research
Same as ESE 403.

ESE 505. Reliability and Quality Control
Same as ESE 405.

ESE 508. Dynamic Systems Modeling

ESE 510. Matrix Analysis and Applications

ESE 511. Numerical Methods

Same as ESE 411.

ESE 512. Advanced Numerical Analysis

ESE 513. Nonlinear Methods in Engineering

ESE 514. Calculus of Variations
Same as ESE 414.

ESE 515. Optimization
Same as ESE 415.

ESE 516. Optimization in Function Space

ESE 517. Partial Differential Equations

ESE 520. Probability and Stochastic Processes

ESE 521. Random Variables and Stochastic Processes I

ESE 522. Random Variables and Stochastic Processes II

ESE 523. Information Theory

ESE 524. Detection and Estimation Theory

ESE 525. Random Processes and Kalman Filtering
Same as ESE 425.

ESE 529. Special Topics in Information Theory and Applied Probability

ESE 532. Advanced Analog Electronics

ESE 533. Radio Frequency and Microwave Technology for Wireless Systems
Same as ESE 433.

ESE 535. Magnetic Recording Technology

ESE 536. Plasma Applications

ESE 537. Advanced Electromagnetic Theory

ESE 538. Advanced Electromagnetic Engineering

ESE 541. Control Systems
Same as ESE 441.

ESE 543. Control Systems Design by State Space Methods
Same as ESE 443.

ESE 544. Optimization and Optimal Control

ESE 545. Visionics, Dynamics, and Control

ESE 548. Instruments and Components for Automatic Control

ESE 549. Special Topics in Control

ESE 551. Linear Dynamic Systems I

ESE 552. Linear Dynamic Systems II

ESE 553. Nonlinear Dynamic Systems

ESE 554. Advanced Nonlinear Dynamic Systems

ESE 556. Computational Methods in Systems

ESE 559. Special Topics in Systems

ESE 560. Computer Systems Architecture I
Same as CSE 560M.

ESE 561. Computer Systems Architecture II
Same as CSE 561M.

ESE 562. Digital System Verification, Testing, and Reliability
Same as CSE 562M.

ESE 563. Advanced VLSI Design
Same as CSE 563M.

ESE 564. Advanced Digital Systems Engineering
Same as CSE 564M.

ESE 565. Acceleration of Algorithms in Reconfigurable Logic
Same as CSE 565M

ESE 566. Reconfigurable System-on-chip Design
Same as CSE 566M.

ESE 567. Computer Systems Analysis
Same as CSE 567M.

ESE 569. Parallel Architectures and Algorithms
Same as CSE 569M.

ESE 570. Coding Theory

ESE 571. Transmission Systems and Multiplexing

ESE 572. Signaling and Control in Communication Networks

ESE 574. Digital Communications

ESE 575. Fiber-Optic Communications

ESE 577. Design and Analysis of Switching Systems
Same as CSE 577M.

ESE 578. Digital Representation of Signals
Same as CSE 579A.

ESE 579. Special Topics in Signal and Image Processing

ESE 580. Adaptive Filtering

ESE 581. Radar Systems

ESE 583. Medical Imaging
Same as ESE 483.

ESE 584. Statistical Signal Processing for Sensor Arrays

ESE 585. Optical Imaging

ESE 586. Tomographic Systems

ESE 587. Ultrasonic Imaging

ESE 588. Quantitative Image Processing

ESE 592. Seminar in Artificial Intelligence in Control

ESE 596. Seminar in Imaging Science and Engineering
Same as CSE 596, BME 506.

ESE 597. Practicum in Imaging Science and Engineering
Same as BME 507, CSE 597.

ESE 599. Master's Research
Credit variable, maximum.

ESE 600. Doctoral Research
Credit variable, maximum.

Minor in Environmental Engineering Science

Coordinating Committee

Pratim Biswas, Director
(Chemical Engineering, Civil Engineering)

Largus Angenent
(Chemical Engineering)

Richard L. Axelbaum
(Mechanical and Aerospace Engineering)

Da-Ren Chen
(Mechanical and Aerospace Engineering)

Milorad P. Duduković
(Chemical Engineering)

Daniel Giammar
(Civil Engineering)

Rudolf B. Husar
(Mechanical and Aerospace Engineering)

Maxine I. Lipeles
(School of Law)

Jay R. Turner
(Chemical Engineering, Civil Engineering)

Brian A. Wrenn
(Civil Engineering)

A Jointly Sponsored Undergraduate Minor

Engineers have always played a pivotal role in environmental protection and waste management. Environmental problems and their solutions are interdisciplinary in nature. Engineers working on environmental problems need to draw on a variety of engineering and nonengineering disciplines. Many engineers with backgrounds in the traditional engineering disciplines focus their careers on the environment.

As a result of the interdisciplinary character of environmental problems, the School of Engineering & Applied Science offers its environmental engineering curriculum not through one particular department, but through a program created jointly by four departments: Chemical Engineering, Civil Engineering, Mechanical and Aerospace Engineering, and the School of Law. The environmental engineering program involves both the undergraduate minor in environmental engineering science and the master's and doctoral graduate degrees in environmental engineering.

Students who are awarded the minor will receive formal recognition that they have acquired the education necessary for entry-level careers as environmental scientists, engineers, and analysts. They will also have a solid foundation to undertake graduate study in environmental engineering and science.

The Minor in Environmental Engineering Science spans the most common fields of study in which engineers who work on environmental problems must be prepared: basic and engineering science, engineering design, environmental regulation, environmental risk assessment, and environmental laboratory analysis. The minor entails 18 units of

course work (six courses); many of these count as electives for the major degree. Students may also work on a research project with faculty in the program (section V, option D) and obtain course credit toward the minor.

The Minor in Environmental Engineering Science may be earned by students receiving any of the Bachelor of Science degrees offered by the School of Engineering & Applied Science, or the environmental studies degree offered by the College of Arts & Sciences. For more details, please visit www.env.wustl.edu/envdeg.htm.

The Curriculum

A six-course series leads to the Minor in Environmental Engineering Science. The minor exposes students to critical issues and practices concerning environmental systems.

I. Introduction to Environmental Engineering (CE 262) (3 units).* The objective of this course is to introduce students to the field of environmental engineering. The course emphasizes basic principles of mass and energy conservation, which govern physical, chemical, and biological processes. Applications include the estimation of contaminant concentrations and the design of environmental controls.

II. Environmental Engineering Science (3–4 units—choose one)

Option A: Air Pollution (Env/ChE/MAE 344). Generation, transport, and fate of pollutants. Pollutant characterization, meteorology and air quality, dispersion models. Transporting, sampling, monitoring, and removing of gaseous and particulate pollutants. Photochemical smog formation and source apportionment.

Option B: Water and Wastewater Treatment (Env/CE 352A). Theoretical aspects of unit operations and processes for water and wastewater treatment with design applications. Quantities and characteristics of water and wastewater; water quality criteria; physical, chemical, and biological treatment of water and wastewater; and handling and disposal of sludge. Estimation of design parameters from bench-scale testing is demonstrated in biweekly laboratory sessions. Credit 4 units. Design credit 2 units.

III. Environmental Chemistry (Env/ChE 443) (3 units). Introduction to the chemistry of air, water, soil, and geosphere. Toxicology and hazardous wastes. Pollution sources, dynamics, and ultimate fates. Sampling, control strategies, and regulations.

IV. Environmental Engineering Elective (3 units—choose one)

Option A: Aerosol Science and Engineering (Env/ChE/CE 518). Characterization of fine particles and their transport: Brownian diffusion, inertia, convective

*Students can also take ChE 351, Engineering Analysis of Chemical Systems or ME 370, Fluid Mechanics in lieu of CE 262.

diffusion, external force fields; aerosol dynamics, applications—combustion processes; environmentally benign processing, materials synthesis.

Option B: Environmental Reaction Engineering (Env/ChE 505). To introduce students to the basic reaction engineering principles with application to environmental systems. Topics include: chemical and biochemical kinetics, ideal reactor concepts, transport effects in reaction rates, mixing, nonideal flow patterns, multi-phase reactors.

Option C: Environmental Engineering Laboratory—Water/Soil: ChE/CE 408; or Air: Env/ChE/CE/MAE 409. Laboratory experiments to illustrate the application of engineering fundamentals to environmental systems. Characterization and control of gaseous and particulate air pollutants. Introduction to relevant analytical instrumentation and laboratory techniques. Laboratory work supported by theoretical analysis and modeling as appropriate.

Option D: Sustainable Air Quality (Env/MAE 449). Introduction to sustainability and sustainable air quality. Systems science as an organizing principle for air-quality management. Setting of air-quality goals. Observing the status and trends. Establishing causal factors: energy use and chemical processing. Natural sources and variability. Corrective actions to reach air-quality goals. Process design for emission reductions. Adoptive response to air pollution episodes.

V. Environmental Engineering Design (3 units—choose one)

Option A: Pollution Abatement and Waste Minimization (Env/ChE 345). Strategies and methods for waste minimization and pollutant emission reduction. A unit operations perspective. Air pollution abatement: principles and technology for removal of particulates from gas streams (cyclones, filters, precipitators). Removal of gaseous pollutants from effluents via adsorption, absorption, etc. Hazardous waste abatement via incineration, bioremediation. Case studies of waste minimization technology.

Option B: Design of Water Quality Control Facilities (Env/CE 482A). Application of environmental engineering principles to design of water and wastewater treatment facilities. Critical review of process design issues associated with physical, chemical, and biological treatment processes. Definition of problems and objectives, evaluation of alternatives, and use of these concepts in process design. Design-oriented class/group project.

Option C: Combustion and Environment (Env/MAE 448A). Introduction to fire and its application in combustion devices. Chemical thermodynamics and kinetics. Ignition and explosion. Deflagration and detonation waves. Transport phenomena and the governing equations for heat and mass transfer in chemically

reacting flows. Laminar and turbulent flame propagation, nonpremixed flames. The emission of combustion-generated pollutants and subsequent devices.

Option D: Environmental Senior Project (CE 590). Students work under the guidance of an environmental faculty member on an open-ended design or research project. Students make an oral presentation and prepare a written report at the end of the project.

VI. Risk Assessment, Regulation, and Law and Policy (3 units—choose one)

Option A: Industrial Ecology (Env/ChE 539). Industrial/technical solutions to environmental concerns are crucial if the world is to achieve sustainable development. This course defines a new way of thinking about economy-environment interactions. An appreciation for the interactions between industrial activities, environmental processes, and societal needs is developed. Links between current environmental concerns and industrial/societal activities are explored. Ecological cycles, full cost accounting, life cycle analysis, sustainable development, and design for the environment methods are used to evaluate current industrial activities.

Option B: Introduction to Environmental Law and Policy (Env/CE 461). Survey of the most prominent federal laws governing environmental compliance and pollution control. Examines laws applicable to environmental impact statements, air pollution, water pollution, and hazardous waste. Addresses policy concerning the relative merits of using technological capabilities as compared with health risks in setting environmental standards. Discusses the need for environmental regulations to protect societal resources.

Option C: Interdisciplinary Environmental Clinic (Env/CE 539). Course constitutes the technical component of interdisciplinary environmental clinic based at the School of Law. Engineering and environmental studies students participate in interdisciplinary teams with law students, handling environmental projects for public interest, environmental or community organizations, or individuals. Projects may involve the following activities: representing clients in state and local administrative proceedings; supporting litigation filed by nonclinic counsel; drafting proposed legislation; commenting on proposed regulations, permits, environmental impact statements or assessments, and similar documents; and evaluating matters for potential future action. The goal for each project is that students will have primary responsibility for handling the matter and faculty will play a secondary, supervisory role. Environmental studies students may provide such technical support as investigating unknown facts, evaluating facts presented by other parties (such as in government reports), and working with law students to develop and present facts relevant to an understanding and resolution of the matter.

Mechanical and Aerospace Engineering

Chair

David A. Peters (1975)
McDonnell Douglas Professor of Engineering
Ph.D., Stanford University, 1974
Aeroelasticity, vibrations, helicopter dynamics

Assistant Chair

Kenneth L. Jerina (1981)
Earl E. and Myrtle E. Walker Professor of Engineering
D.Sc., Washington University, 1974
Materials, design, solid mechanics, fatigue and fracture

Director of Aerospace Engineering Program

Ramesh K. Agarwal (2001)
William Palm Professor of Engineering
Ph.D., Stanford University, 1975
Computational fluid dynamics and computational physics

Endowed Professors

Philip V. Bayly (1993)
Lilyan and Lisle Hughes Professor of Mechanical Engineering
Ph.D., Duke University, 1993
Dynamics, vibrations

Mark J. Jakiela (1996)
Lee Hunter Professor of Mechanical Design
Ph.D., University of Michigan, 1988
Mechanical design, design for manufacturing, optimization, evolutionary computation

Shankar M. L. Sastry (1992)
Catherine M. and Christopher I. Byrnes Professor of Engineering
Ph.D., University of Toronto, 1974
Materials science, physical metallurgy

Professors

Eliot Fried (2002)
Ph.D., California Institute of Technology, 1991
Mechanics of polymeric or granular materials

Raimo J. Hakkinen (1991)
Ph.D., California Institute of Technology, 1954
Aerodynamics, experimental methods in fluid dynamics

Rudolf B. Husar (1973)
Ph.D., University of Minnesota, 1971
Air pollution, aerosol dynamics

Associate Professors

Richard L. Axelbaum (1990)
Ph.D., University of California–Davis, 1988
Combustion, fluid mechanics, thermal sciences

Da-Ren Chen (2001)
Ph.D., University of Minnesota, 1997
Particle identification and control, aerosol instrumentation

Assistant Professors

Guy M. Genin (1999)
Ph.D., Harvard University, 1997
Solid mechanics, fracture mechanics

Ruth Okamoto (1997)
D.Sc., Washington University, 1997
Biomechanics, solid mechanics

Amy Q. Shen (2002)
Ph.D., University of Illinois, 2000
Nanostucture of complex fluids, geophysical fluid dynamics

Michael Swartwout (2000)
Ph.D., Stanford University, 2000
Design and control, spacecraft operations

Affiliate Professors

Harold J. Brandon (1980)
D.Sc., Washington University, 1969
Energetics, thermal systems

Adjunct Professors

Ricardo Actis (1994)
D.Sc., Washington University, 1991
Mechanics, strength of materials

Xavier Avula (2003)
Ph.D., Iowa State, 1966
Design, Micro-electrical-mechanical systems

Andrew Cary (2005)
Ph.D., University of Michigan, 1997
Computational fluid dynamics

Jerry Craig (1984)
M.S., Kansas State University, 1972
Engineering graphics

Richard Dyer (2004)
Ph.D., Washington University, 2001
Propulsion, thermodynamics, fluids

Mario P. Gomez (1978)
Ph.D., Stanford University, 1964
Materials science and metallurgy, fracture mechanics, engineering design

Richard R. Janis (2004)
M.S., Washington University, 1976
Building systems design

D. C. Look (2003)
Ph.D., University of Oklahoma, 1969
Thermodynamics

Dale M. Pitt (1982)
D.Sc., Washington University, 1980
Aeroelasticity

Gary D. Renieri (1989)
Ph.D., Virginia Polytechnic Institute and State University, 1976
Structural applications, composite materials

Frederick Roos (1999)
Ph.D., University of Michigan, 1968
Aerodynamics, fluid mechanics

Michael C. Wendl (1999)
D.Sc., Washington University 1994
Fluids heat transfer

Senior Professors

Richard A. Gardner (1969)
Ph.D., Purdue University, 1969
Fluid mechanics, heat transfer, magneto-fluid-mechanics

Paul C. Paris (1976)
Ph.D., Lehigh University, 1962
Classical mechanics, solid mechanics, dynamics, fracture mechanics, stochastic processes

B.S. in Mechanical Engineering Curriculum¹

First Year—Fall Semester

	<i>Units</i>
Math 132 Calculus II	3
Physics 117A Physics I (or Physics 197)	4
MAE 141D Introduction to Design (or MAE 141C)	2
Engineering elective ²	2–3
Humanities and social sciences elective ²	3
	14–15

Second Year—Fall Semester

Chem 111A Chemistry	3
Chem 151 Laboratory	2
Math 217 Differential Equations	4
MAE 231 Mechanics I	3
ESE 230 or ESE 326	3
	15

Third Year—Fall Semester

MAE 241 Deformable Bodies	3
MAE 320 Thermodynamics	3
MAE 370 Fluid Mechanics I	3
MAE 325 Materials	4
Humanities and social sciences elective ³	3
	16

Fourth Year—Fall Semester

MAE 417 Vibrations	4
MAE 372B Thermal Sciences Lab	1
MAE 404P ME Design Project	5
MAE elective ⁵	3
MAE elective ⁵	3
	16

First Year—Spring Semester

	<i>Units</i>
Math 233 Calculus III	4
Physics 118A Physics II (or Physics 198)	4
MAE 141C CAD (or MAE 141D)	2
Humanities and social sciences elective ³	3
Humanities and social sciences elective ³	3
	16

Second Year—Spring Semester

Chem 112A Chemistry	3
MAE 232 Mechanics II	3
MAE 265 Mechanical Engineering Computing	3
ESE 317 Engineering Mathematics	4
ESE 326 or ESE 230	3
	16

Third Year—Spring Semester

MAE 322A Mechanical Design and Machine Elements	4
MAE 321 Energetics	3
MAE 371 Heat Transfer	3
MAE 372A Fluids Laboratory	1
EP 310 Technical Writing	3
Humanities and social sciences elective ³	3
	17

Fourth Year—Spring Semester

MAE 433 Aircraft Flight Dynamics and Control	3
ESE Elective ⁴	3
MAE 404T Current Design Topics	1
MAE elective ⁵	3
MAE elective ⁵	3
Humanities and social sciences elective ³	3
	16

¹A minimum of 126 units are required for the B.S.M.E. degree.

²MAE 201 or MAE 204 are recommended.

³Eighteen units of humanities and social sciences electives are required. See page 297.

⁴ESE 102, ESE 232, ESE 330, or ESE 332 are allowed.

⁵300 level or above, 12 hours are required.

Barna A. Szabo (1968)
Ph.D., State University of
New York–Buffalo, 1968
Numerical simulation of mechanical
systems, finite-element methods

Professors Emeriti

Wallace B. Diboll, Jr. (1954)
M.S.M.E., Rensselaer Polytechnic Institute,
1951
Dynamics, vibrations, engineering design

John C. Georgian (1949)
M.S., Cornell University, 1941
Engineering design, dynamics of machinery,
vibrations, turbomachinery

Leonard B. Gulbransen (1954)
Ph.D., University of Utah, 1949
Physical metallurgy, materials science,
solid state

**Mechanical and Aerospace
Engineering at Washington
University**

Mechanical engineers have traditionally
been concerned with a great variety of tech-
nologies, such as energy conversion, ma-

chine design, instrumentation and control of
physical processes, and control of the envi-
ronment. It is natural to find mechanical en-
gineers filling essential roles in the entire
spectrum of industrial enterprises, including
even such apparently “nonmechanical” ones
as the aerospace, chemical, computer, bio-
medical, and electrical power industries.
Some new and exciting problems currently
attracting the attention of mechanical en-
gineers are the design of artificial organs
(hearts, lungs, kidneys) and prosthetic joints,
the development of high-performance com-
posite materials, flexible manufacturing, me-
chanical design automation, and the control
of industrial environmental pollution.

Aerospace engineering deals with the
analysis, design, and performance of flight
vehicles such as transport and military air-
craft, helicopters, missiles and launch vehi-
cles (rockets), and spacecraft such as the
space shuttle. To understand the principles
of flight, it requires a strong background in
mathematics and physics. Aerospace engi-
neering comprises several disciplines,
namely, aerodynamics, flight dynamics and
control, avionics and navigation, aerospace
propulsion, aerospace structures and materi-

als, and aerospace manufacturing, among
others. The knowledge of aerodynamics is
needed to understand why and how an air-
craft lifts itself and flies. The knowledge of
aircraft structures and materials is required
to build the wings, fuselage, tails, and other
parts of the aircraft and put them together.
The knowledge of the science of propulsion
is needed to build aircraft engines to propel
the aircraft into the atmosphere. The under-
standing of aircraft dynamics and stability is
needed for the design of control systems to
guide it along a desired flight path. The
aerospace engineers apply their knowledge
and skills to the design of aircraft compo-
nents (e.g., wings and fuselages) or systems
(e.g., control systems) or spacecraft compo-
nents and systems.

**Bachelor of Science Degree in
Mechanical Engineering**

The mission of the undergraduate program
in mechanical engineering is to prepare
students for professional practice within
the traditionally broad and steadily growing
purview of mechanical engineering. This
preparation is aimed at instilling in the

B.S. in Aerospace Engineering Curriculum¹

First Year—Fall Semester	Units
Math 132 Calculus II	3
Physics 117A Physics I (or Physics 197)	4
MAE 141D Introduction to Design (or MAE 141C)	2
Humanities and social sciences elective ²	3
Humanities and social sciences elective	3
	15

Second Year—Fall Semester	Units
Chem 111A Chemistry	3
Chem 151 Laboratory	2
Math 217 Differential Equations	4
MAE 231 Mechanics I	3
ESE 230 or ESE 326	3
	15

Third Year—Fall Semester	Units
MAE 241 Deformable Bodies	3
MAE 320 Thermodynamics	3
MAE 370 Fluid Mechanics I	3
MAE 325 Materials	4
Humanities and social sciences elective ³	3
	16

Fourth Year—Fall Semester	Units
MAE 417 Vibrations	4
MAE 372B Thermal Sciences Lab	1
MAE 404P ME/Aerospace Design Project	5
MAE 489 Aerospace Structures	3
Humanities and social sciences elective ³	3
	16

First Year—Spring Semester	Units
Math 233 Calculus III	4
Physics 118A Physics II (or Physics 198)	4
MAE 141C CAD (or MAE 141D)	2
MAE 201 Introduction to Aerospace Vehicles ²	2
Humanities and social sciences elective	3
	15

Second Year—Spring Semester	Units
Chem 112A Chemistry	3
MAE 232 Mechanics II	3
MAE 265 Mechanical Engineering Computing	3
ESE 317 Engineering Mathematics	4
ESE 326 or ESE 230	3
	16

Third Year—Spring Semester	Units
MAE 380 Aerodynamics	3
MAE 301 Spacecraft Design	4
MAE 488A Propulsion	3
MAE 371 Heat Transfer	3
MAE 372A Fluids Lab	1
EP 310 Technical Writing	3
	17

Fourth Year—Spring Semester	Units
ESE Elective ⁴	3
MAE 404T Current Design Topics	1
MAE 433 Aircraft Flight Dynamics and Control	3
MAE elective ⁵	3
MAE elective ⁵	3
Humanities and social sciences elective	3
	16

¹A minimum of 126 units are required for the B.S.A.E. degree.
²MAE 201 is recommended but not required.
³Eighteen units of humanities and social sciences electives are required. See page 312.
⁴ESE 102, ESE 232, ESE 330, or ESE 332 are allowed.
⁵300 level or above, 6 hours are required.

students an appreciation of and capacity for creative design through critical and analytical thinking, providing them with the intellectual tools that are essential to postgraduate study as well as independent, lifelong learning and professional development, and teaching them to communicate their ideas clearly and to conduct themselves in a manner that is ethical and socially responsible.

The curriculum of the department is a four-year program leading to the first professional degree, Bachelor of Science in Mechanical Engineering, which is accredited by the Accreditation Board for Engineering and Technology (ABET).

The modern mechanical engineering curriculum prepares the student for professional practice in a broad spectrum of activities. Today's mechanical engineer needs to be soundly educated in the mechanics of solids and fluids, in thermodynamics and heat transfer, in the science of materials, in dynamics and controls, and in the principles and techniques of mechanical engineering design.

The undergraduate program outlined on page 376 provides the necessary foundations in these disciplines while retaining enough flexibility to permit specialization in one of several areas, depending on your particular interests. This specialization is accomplished by judicious choice of engineering and science electives, of which a minimum of 12 credit units are to be taken in 300- and 400-level mechanical and aerospace engineering courses approved by the faculty. At the end of the four-year program, this education and training puts the graduate on a path to professional status as a practicing engineer.

Undergraduates in the Department of Mechanical and Aerospace Engineering must develop and demonstrate proficiency in engineering graphics skills early in their program with a thorough working knowledge of orthographic and isometric views, hidden lines, dimensioning, tolerances, and sectioning. This requirement is fulfilled by taking Introduction to Engineering Design: CAD (MAE 141C) and Introduction to Engineering Design: Project (MAE 141D) in the first or second semester of academic work.

Mission Statement

The mission of this undergraduate program is to prepare students for professional practice with a solid, scientifically grounded foundation in the major stems of mechanical engineering: mechanics, mechanisms and mechanical design, dynamics and control, fluid mechanics and thermal science, and materials science.

Program Objectives

The mechanical engineering program objectives are to produce students who can, or are able to:

- Apply fundamental scientific and engineering concepts involving dynamics and systems, material science, mechanics and solids, and the thermal-fluid sciences in order to identify, formulate, and solve a variety of mechanical engineering problems.
- Design, modify, conduct, and analyze

experiments and experimental data in the areas of thermal-fluid sciences, solid mechanics, and dynamical systems.

- Directly perform system, process, and component selection in order to satisfy specific engineering-related needs through the application of mechanical design philosophy in engineering practice.

- Communicate in oral and written presentations using graphic and/or visual media appropriate for an engineering business environment.

- Operate productively in individual or multidisciplinary, team-oriented projects.

- Be exposed to modern developments, products, and tools as they relate to engineering practice.

- Be exposed to practicing engineers and their jobs and be taught the importance of high ethical and professional standards.

- Obtain the broad-based education necessary to understand the impact of engineering solutions in their global and societal contexts.

- Recognize the need for (and obtain the tools necessary to engage in) lifelong learning.

Bachelor of Science Degree in Aerospace Engineering

The B.S. in Aerospace Engineering is offered by the Department of Mechanical and Aerospace Engineering. It is available to undergraduate students interested in an ABET-accredited B.S. degree in engineering. First approved in 2003, ABET accreditation will be sought in 2006 when the first students graduate from the program. Students develop a solid, broad-based background in engineering, arts, humanities, and social sciences with an emphasis in aerospace engineering, which includes the study of aerospace sciences such as aerodynamics, flight dynamics and control, aerospace structures, aerospace propulsion, and the design of air and space vehicles. The major areas of study are:

Aerodynamics: Thin airfoil theory, lifting-line theory for finite wings, slender body theory, linearized compressible flow and Prandtl-Glauert rule, supersonic thin airfoil theory, introduction to performance, and concepts of airfoil design.

Flight Dynamics and Control: Aircraft dynamics, aircraft stability, flight control, flying qualities, and the application of control theory to control system design.

Aerospace Propulsion: Introduction to propeller, jet, ramjet, and rocket propulsion, 1-D analysis of gas turbine engine performance, analysis and performance of airbreathing propulsion system, analysis and design of gas turbine engine components (e.g., inlets, nozzles, compressors, turbines, turbofan and turbopropeller, and combustors).

Aerospace Structures: Key features of aerospace structures, basic properties of aerospace materials, principles of stressed skin construction, bending, shear, and torsion of open and closed thin-walled cross-section beams, structural idealization, loads on flight vehicles, applications to wings and fuselages.

Aerospace Design: Detailed design of an

aircraft component (e.g., wing, fuselage, etc.) or a system (e.g., control system) or a spacecraft component or system. Emphasis on engineering teamwork, ethics, and professionalism.

Spacecraft Design: Design of spacecraft involve a range of engineering disciplines, from structures to controls to electronics to project management. Advanced design and analysis tools for each major subsystem are introduced. New technologies being developed for space missions are introduced, with particular emphasis on orbital mechanics, attitude control, systems engineering, and aerospace project management. Students pursue advanced subsystem design and system-level spacecraft design projects.

Mission Statement

The mission of the undergraduate aerospace engineering program is to prepare qualified students for the profession of aerospace engineering. This is sought to be accomplished through rigorous education in fundamental disciplines of aeronautics, namely, aerodynamics, structures and materials, flight mechanics and control, and propulsion, and exposure to some key disciplines of astronautics, namely, orbital mechanics, attitude control, and space propulsion, with emphasis on aircraft and spacecraft design.

Program Objectives

The aerospace engineering program objectives are to produce graduates who:

- Have fundamental knowledge of basic disciplines of aeronautics (aerodynamics, structures and materials, flight dynamics and control, propulsion) and their role in aircraft design.

- Have fundamental knowledge of some key disciplines of astronautics (orbital mechanics, attitude control, and space propulsion) and their role in spacecraft design.

- Are exposed to modern developments and computational tools.

- Are prepared to pursue graduate studies.

- Have both written and oral communication skills.

- Can operate and contribute effectively in a team environment.

- Develop leadership qualities.

- Understand the importance of professional ethics and impact of engineering decisions in societal context.

- Recognize the need for lifelong learning.

Joint Degree Programs

For engineers interested in management, there is a five-year program leading to the Bachelor of Science in Engineering and Master of Business Administration degrees. See page 318 for more details on the B.S.-M.B.A. program.

The department also offers a five-year program (150 units) leading to both the Bachelor of Science and Master of Science in Mechanical Engineering or Aerospace Engineering degrees. One advantage of this combined degree program is that a student's undergraduate financial aid package can usually be extended to the fifth year. Application to the B.S.-M.S. program is made in the second semester of the junior year.

It is also possible to earn a second degree from another engineering department by careful planning, coordination, and selection of electives. For example, it is possible to satisfy the requirements for both a B.S. in Mechanical Engineering and a B.S. in Bio-medical Engineering with a total of 141 units.

Premedical Option

Research as well as practice in the biological and medical sciences is becoming increasingly dependent on advanced mechanical and electrical technology. For those interested in preparing for a career in the biological and medical sciences, the premedical option in mechanical engineering makes it possible to obtain an accredited Bachelor of Science in Mechanical Engineering and simultaneously meet the admission requirements of most medical and dental schools. The program also provides a foundation for graduate study and research in biomedical engineering.

The essential requirements of this premed option are two semesters of general biology (Biol 296A, 297A), two semesters of organic chemistry (Chem 251, 252), and two additional semesters of laboratory (Chem 152, 257). Organic chemistry is counted as an upper-level elective, so one must include a minimum of 6 units of upper-level mechanical engineering electives in the program instead of 12. Because of the large number of required units, this option is easier for those who have a high school background in biology or, by reason of advanced placement, have reduced requirements in the Common Studies portion of the curriculum. Consult the department for complete details.

Minor in Aerospace Engineering

Whether you are an aviation “buff” or enthusiast about “flying machines,” a minor in aerospace engineering can satisfy your scientific curiosity and be very rewarding in providing you knowledge and understanding that might help you decide on a career path. The Minor in Aerospace Engineering is available to all undergraduates but is most attractive to those pursuing a degree in mechanical engineering. It requires a minimum of 16 units of courses selected from lists “A” and “B” at right, and it is possible to earn the minor in aerospace engineering without increasing the number of units (126) required for the B.S. degree in mechanical engineering.

Aerospace engineering deals with the analysis, design, and performance of flight vehicles such as transport and military aircraft, helicopters, missiles and launch vehicles (rockets), and spacecraft such as the space shuttle. Understanding the principles of flight requires a strong background in mathematics and physics. Aerospace engineering combines the disciplines of aerodynamics, flight dynamics and control, avionics and navigation, aerospace propulsion, aerospace structures and materials, and aerospace manufacturing. Knowledge of aerodynamics is needed to understand why and

how an aircraft lifts itself and flies. Knowledge of aircraft structures and materials is required in order to build the wings, fuselage, tails, and so forth of the aircraft and put them together. Knowledge of the science of propulsion is needed to build aircraft engines to propel the craft into the atmosphere. An understanding of aircraft dynamics and stability is needed for the design of control systems to guide an aircraft along a desired flight path. Aerospace engineers apply their knowledge and skills to the design of aircraft components (e.g., wings and fuselages) or systems (e.g., control systems) or spacecraft components and systems.

After introducing aerospace engineering through an introductory course, the students learn about aerospace engineering by taking courses in aerodynamics, aircraft flight dynamics and control, aerospace propulsion, aerospace structures, and aerospace vehicle design. Students may also have the opportunity to gain experience in aerospace engineering design through collaborative programs with local industries such as Boeing. Current Boeing aerospace engineers participate in teaching several courses at Washington University, and most of the faculty who teach in the program have extensive aerospace industry experience.

List A

Required courses:

MAE 201. Introduction to Aerospace Vehicles (2 credits)

MAE 380. Aerodynamics (3 credits)

MAE 404P. Aerospace Engineering Design Project (5 credits)

MAE 433. Aircraft Flight Dynamics and Control (3 credits)

List B

Select one of the following electives:

MAE 488A. Aerospace Propulsion (3 credits), or

MAE 489. Aerospace Structures (3 credits), or

MAE 505. Analysis of Rotary-Wing Systems (3 credits)

To find out more about this minor, contact the department chair or the adviser for the minor in aerospace engineering.

Minor in Environmental Engineering Science

The Department of Mechanical and Aerospace Engineering, along with four other departments, sponsors an undergraduate minor in environmental engineering science. The 18-unit program can be combined with the regular MAE or AE curriculum by a careful choice of upper-level electives, and both an accredited B.S. in MAE or AE and an Environmental Engineering Science Minor can be earned for 136–139 units. A detailed description of the program’s requirements is given on pages 374–375.

Minor in Manufacturing Engineering

The Minor in Manufacturing Engineering is offered jointly through the departments of Mechanical and Aerospace Engineering and

Electrical and Systems Engineering. It is available to undergraduate students pursuing an ABET-accredited B.S. degree in engineering. Students develop a solid, broad-based background in engineering, arts, humanities, and social sciences with an emphasis in manufacturing engineering. The major areas of the manufacturing engineering minor are:

- Manufacturing:** Plant layout, inventory, materials handling, automation, fabrication, work flow, quality control, and cost control.

- Operations Research:** Decision-making, economics, information systems, and mathematical models and simulations in manufacturing and distribution.

- Human Factors:** Psychology, physiology, biomechanics, human-machine interface, and their effect on productivity and worker safety.

The curriculum emphasizes manufacturing processes and automation, quality control and operations research, modeling and simulation, economics and psychology, ergonomics and human factors. Students have the opportunity to gain experience with the fundamentals of manufacturing through a manufacturing processes practicum, MAE 204, Introduction to Manufacturing Processes, in the freshman or sophomore year.

The first two years of undergraduate engineering comprise a curriculum of fundamental engineering courses, math, physics, arts, humanities, and social sciences. In addition, the student is introduced to manufacturing through courses in manufacturing processes, industrial and organizational psychology, and human factors. During the junior and senior years, the students learn cutting-edge technology such as robotics, computer-aided design, and manufacturing.

A minimum of 18 units of courses selected from the following schedule are required for the minor. Fifteen of the units for the minor must be at least 200-level courses from the School of Engineering & Applied Science.

Required course:

MAE 204. Introduction to Manufacturing Processes

Elective courses (select at least two from the following list):

MAE 424. Manufacturing Processes

ESE 405. Reliability and Quality Control

ESE 481. Operations Research

Elective courses (select the remaining courses, for a minimum of six courses, from the above lists and/or from the following lists. Five of the six courses must be at least 200-level School of Engineering & Applied Science courses.)

MAE 525. Materials Selection in Engineering Design

MAE 529. Flexible Manufacturing Automation

MAE 550. Computer-Integrated Manufacturing

MAE 551. Computer-Controlled

Manufacturing Processes**MAE 553. Facilities Design****MAE 556. Optimization Methods in Engineering****ESE 407. Analysis and Simulation of Discrete Event Systems****ESE 446. Robotics: Dynamics and Control****ESE 415. Optimization****ESE 447. Robotics Laboratory****CE/EP 474. Economic Decisions in Engineering**

All engineering Bachelor of Science degrees require 18 units of humanities and social sciences (H & SS). Three units of H & SS from the list below can count directly toward the minor in manufacturing engineering. A student accrues additional benefit from the minor by focusing an H & SS concentration in economics or psychology.

Econ 103. Microeconomics**Econ 104. Macroeconomics****Psych 214. Introduction to Industrial and Organizational Psychology I****Psych 314. Industrial and Organizational Psychology II****Psych 430. Psychology and Technology****Psych 440. Psychology of People and Ordinary Objects****CE/EP 456. Law and Society****Minor in Nanotechnology**

Nanotechnology is increasingly being recognized as the next technological frontier with potential of enormous benefits to the society. Both federal and state agencies are therefore promoting research and education initiatives as well as encouraging all sectors of industry that can benefit from the development and utilization of this technology. This situation is already creating a demand for trained technical workforce with background in nanotechnology, e.g. Boeing, Monsanto, Sigma-Aldrich, MEMC, AP Materials, Kereos, and several other smaller companies in the St. Louis area are very interested in hiring technicians and engineers with nanotechnology background. With this in mind, the School of Engineering & Applied Science created a minor in nanotechnology.

The aim of this minor is to introduce to students, through a series of courses and labs, the general meaning, terminology, ideas, and concepts behind nanotechnology and its potential application in various industries. The required courses include topics such as nanoparticles—properties, synthesis and applications, carbon nanotubes—properties, synthesis and applications, ordered and disordered nanostructured materials and their applications, quantum wells, wires and dots, catalysis and self-assembly, polymers and biological materials, nanomanufacturing and functional nano-devices, health effects and nanotoxicity, etc. The courses include several laboratory demonstrations, measurement techniques and instrumentation. A total of 17 credit hours are required to obtain the minor; however the minor does not require additional credit hours to complete the bachelor's

degree in any discipline of engineering. Students are required to take all four courses shown in List A and two electives from List B. It should be noted that there is flexibility in choosing the two electives; students should consult their academic adviser and the adviser of the nanotechnology minor, Professor Ramesh Agarwal.

List A

Required courses:

MAE 163. Introduction to Nanotechnology (2 credits)**MAE 263. Intermediate Nanotechnology (3 credits)****MAE/ChE/CE. 563 Measurement Techniques for Particle Characterization (3 credits)****MAE/ChE/CE. 564 Topics in Nanotechnology (3 credits)***List B*

Select two of the following electives (or consult director of minor):

MAE 5902. Micro-Electro-Mechanical Systems (MEMS) I (3 credits)**MAE 5903. Micro-Electro-Mechanical Systems (MEMS) II (3 credits)****Minor in Robotics**

Robotic systems have wide application in modern technology and manufacturing. Robots can vary in complexity and use, from microrobots for surgical procedures to moderately sized robots common in manufacturing and undersea exploration to macrorobots used for disposal of nuclear wastes and as arms on space-station modules.

The program designed for a minor in robotics provides a fundamental understanding of robotic operation, preliminary design, and use of robots.

Prerequisites for this minor are: Calculus, Math 217 (Differential Equations), Physics 117A, 118A (General Physics I, II), and CSE 131 (Computer Science I) or CSE 126 (Introduction to Computer Programming) or CSE 200 (Scientific Computing) or MAE 265 (Mechanical Engineering Computing) or equivalent.

A total of six courses are required, including the following four courses:

MAE 232. Engineering Mechanics II**ESE 351. Signals and Systems***or***MAE 417. Dynamic Response of Physical Systems****ESE 446. Robotics: Dynamics and Control****ESE 447. Robotics Laboratory**

and two courses chosen with the approval of the director of the program for a minor in robotics.

Suggested courses are:

CSE 313A. Artificial Intelligence Lab**CSE 452A. Computer Graphics****MAE 322A. Mechanical Design and Machine Elements****ESE 407. Analysis and Simulation of Discrete Event Systems****ESE 435. Electrical Energy Laboratory****ESE 441. Control Systems****MAE 433. Aircraft Flight Dynamics and Control**

To find out more about this minor, contact the department chair or the adviser of the minor in robotics.

Graduate Programs

The department offers programs for graduate study at both the master's and doctoral levels. All programs are designed to direct advanced study into an area of specialization and original research that includes the most recent scientific and technological advances.

A growing number of mechanical and aerospace engineers are finding it advantageous and rewarding to pursue graduate study. For some, this takes the form of part-time study for the Master of Science degree, while others undertake full-time programs of study and research for the master's degree, the doctorate, or both. Engineers interested in academic teaching and research or in industrial research should plan to obtain the Doctor of Science. The undergraduate curriculum provides an excellent foundation for graduate study, and a careful selection of electives in the third and fourth years will facilitate the transition to graduate work.

Students following the B.S.-M.S. program must be admitted to the graduate program in mechanical or aerospace engineering and fulfill all requirements for both the Bachelor of Science and Master of Science degrees. The total number of units required for both degrees is 156. However, two graduate-level mechanical or aerospace engineering courses can be counted toward both the 30 units of master's credits and the required mechanical or aerospace engineering senior electives, reducing the total for both degrees to a 150-unit curriculum. Application for admission to this program must be made during the sixth semester (second semester of the junior year) of residence.

For more information on any of these graduate or undergraduate programs, contact the Department of Mechanical and Aerospace Engineering at: 314-935-6047, me-info@mece.wustl.edu, or the Web site at www.me.wustl.edu.

Undergraduate Courses**MAE 140. Independent Study**
Credit 0-3 units.**MAE 141C. Introduction to Engineering Design: CAD**

An introduction to engineering design in the context of mechanical engineering. Students learn the fundamentals of spatial reasoning and graphical representation. Freehand sketching skills, including pictorial and orthographic views, are applied to the design process. Computer modeling techniques provide accuracy, analysis, and visualization tools necessary for the design of devices and machines. Topics in detailing design for production, including fasteners, dimensioning, tolerancing, and creation of part and assembly drawings are also included. Credit 2 units.

MAE 141D. Introduction to Engineering Design: Project

An introduction to engineering design in the context of mechanical engineering. Students first complete a series of experiments that introduce

physical phenomena related to mechanical engineering. Understanding is achieved by designing and building simple devices and machines. The course proceeds to a design contest in which the students design and build from a kit of parts a more significant machine that competes in a contest held at the end of the course. The course is open to all and is appropriate for anyone interested in mechanical devices, design, and the design process. Credit 2 units.

MAE 143A. Machine Shop Practicum

Operation of basic machine tools, including lathe, drill press, grinder, mill. One three-hour period a week, elective for any level student. Successful completion satisfies requirements to use the student-faculty shop. Credit 2 units.

MAE 145A. Engineering Graphics

Same as CE 145A.

MAE 149. Aircraft Pilot Ground School

This course is taught by an FAA-certified instructor. It will include an introduction to aviation systems, airplane components, airplane systems, basic aerodynamics, operational safety, radar and radio services for pilots, stage checks of aircraft, regulations, weather theory, navigation and flight planning. The course will culminate with an opportunity to take the FAA ground school examination. Credit 2 units.

MAE 163. Introduction to Nanotechnology

The aim of this course is to introduce to students the general meaning, terminology, and ideas behind nanotechnology and its potential applications in various industries. Students will also find the answers to the following questions commonly raised: What is this technology and what are its special characteristics? What are the likely potential benefits of this technology in various industries and to the improvement of human life? What is included in this technology? What are the applications of this technology? What are the recent activities in this area? What are the skills needed to become professional in this technology? Only the introductory material will be covered in this course. Students with background in general physics, chemistry, and biology should be able to comprehend the material. Credit 2 units.

MAE 190. Special Topics in Aircraft/Spacecraft Engineering

A hands-on introduction to air and space engineering. Students will work in multidisciplinary teams on one of several ongoing space engineering projects. Example projects include Space Shuttle-based Get-Away Special Canisters carrying microgravity and space environment experiments. Other examples include microsattellites, microprobes, and launch vehicles. Credit 1 unit.

MAE 201. Introduction to Aerospace Vehicles

Aerospace vehicles (i.e., aircraft and spacecraft) involve a range of engineering disciplines, from structures to controls to electronics to project management. This course introduces the elements of aerospace vehicles as well as the analytic and testing tools used by aerospace engineers. Throughout the course, specific aircraft, rotorcraft and spacecraft will be used as instructive examples. As a final project, teams of students will perform case studies of the design and performance of an aerospace vehicle. This course is suitable for nonengineering majors. Corequisite: Math 131 (Calculus I). Credit 2 units.

MAE 204. Introduction to Manufacturing Processes

Same as ESE 204.

Production processes are emphasized as they are found in the industry of manufacturing. The processes used to transform materials to manufacture products are described in lectures, observed in field trips to manufacturing plants, and practiced

in a machine shop practicum. Students develop an understanding of assembly, precision measurement, forming, machining, casting, welding, and heat treatment processes that support production. The theory of a mechanical device is introduced. Student teams design the device, simulate performance with computer models, produce working drawings, fabricate the device, and participate in a final design and performance competition. The course includes lectures on design and manufacturing processes, a machine shop practicum, and field trips. Contact hours are 2.5 per week for lectures and field trips and 4.5 hours per week for the machine shop practicum. Lectures cover topics from the text, the instructor's experience, video-cassettes, motion pictures, and sample objects. Field trips provide the students with an opportunity to witness full-scale manufacturing and assembly processes as well as providing a forum for discussion. Each student team completes a project which involves design, manufacturing processes, and performance evaluation. An example of such a project is the design, fabrication, assembly, and performance evaluation of a Stirling engine. Credit 3 units.

MAE 231. Engineering Mechanics I

Same as CE 231.

MAE 232. Engineering Mechanics II

Review of vector algebra and calculus. Kinematics of a particle, Newton's laws and the kinetics of a particle. Work and energy. Impulse and momentum. Kinematics of rigid bodies. General theorems for systems of particles. Kinetics of rigid bodies. The inertia tensor. Prerequisites: MAE 231, Phys 117A. Corequisite: Math 217. Open to first-year students with permission of instructor. Credit 3 units.

MAE 241. Mechanics of Deformable Bodies

Same as CE 241.

Stress and strain: equilibrium, compatibility, transformations. Hooke's law. Elastic energy. Stresses in beams, columns, and torsional members. Yield and fracture. Elastic deflection of beams. Statically indeterminate systems. Concept of stability. Prerequisites: Math 217, MAE 231. Credit 3 units.

MAE 263. Intermediate Nanotechnology

The aim of this course is to introduce to students the fundamental principles in physics, chemistry, and biology needed to study nanotechnology and its applications. Some computational aspects of nanotechnology will also be covered in this class. The details of the computational methods are beyond the scope of the class: the idea is to simply familiarize the students with modeling and simulation and to show them some animations from the literature. Credit 3 units.

MAE 265. Mechanical Engineering Computing

This course provides mechanical and aerospace engineering students with the computational tools that will be needed in order to solve mechanical and aerospace engineering problems both in the upper-level MAE curricula and in many industrial applications that they may see upon graduation. These applications will include problems applicable to thermodynamics, fluid mechanics, heat transfer, automatic control, structural and stress analysis, and dynamics and vibrations. The primary computational tool will be MATLAB. MATLAB basics will be treated including: matrices, data input/output, program flow control, functions, and graphics. Numerical tools to be covered are: systems of equations, interpolation and curve fitting, nonlinear equations and optimization, finite-difference and numerical integration, eigenvalues and initial-value problems. Each topic will be treated in four stages. First, each mechanical or aerospace engineering problem will be introduced (along with the appropriate solution methodology). Second, the appropriate MATLAB com-

mands will be illustrated by applications to that problem. Third, students will be given hands-on exercises in class to work on those problems themselves. Fourth, homework will be assigned for the students to do outside of class. Credit 3 units.

MAE 301. Spacecraft Design

Design of spacecraft involve a range of engineering disciplines, from structures to controls to electronics to project management. This course builds on the work presented in MAE 201, introducing advanced design and analysis tools for each major subsystem. New technologies being developed for space missions will be introduced, and particular emphasis is placed on orbital mechanics, attitude control, systems engineering, and aerospace project management. Students will participate in the design, fabrication, and/or operations of ongoing space projects in the School of Engineering. Prerequisite: MAE 201 or consent of the instructor. Credit 4 units.

MAE 320. Thermodynamics

Classical thermodynamics, thermodynamic properties, work and heat, first and second laws. Entropy, irreversibility, availability. Application to engineering systems. Prerequisites: Chem 111A, Math 132, Phys 117A. Credit 3 units.

MAE 321. Energetics for Mechanical Engineers

Thermodynamic cycle analysis: vapor power, internal combustion, gas turbine, refrigeration. Maxwell relations and generalized property relationships for nonideal gases. Mixtures of ideal gases, psychrometrics, ideal solutions. Combustion processes, first and second law applications to reacting systems. Chemical equilibrium. Compressible flow in nozzles and diffusers. Prerequisite: MAE 320A. Credit 3 units.

MAE 322A. Mechanical Design and Machine Elements

This course provides a thorough overview of the steps in the engineering design process and introduces analytical/quantitative techniques applicable to each step. Topics include recognition of need, specification formulation, concept generation, concept selection, embodiment, and detail design. Includes an introduction to several classes of machine elements such as bearings, gears, belts, brakes, and springs. Underlying analytical models of the machine elements are presented along with guidelines about designing and choosing such elements for practical applications. A case study from industry will emphasize how the steps of the design process were done as well as the rationale for choosing particular machine elements. This course is required for subsequent design project courses. Prerequisite: MAE 141C, 141D, 241 and ESE 317. Credit 4 units. Design credit 4 units.

MAE 325. Material Science

Introduces the chemistry and physics of engineering materials. Emphasis on atomic and molecular interpretation of physical and chemical properties, the relationships between physical and chemical properties, and performance of an engineering material. Prerequisite: Chem 111A. Credit 4 units.

MAE 344. Air Pollution

Same as CHE 344.

MAE 361A. Materials Engineering

This course deals with the application of fundamental materials science principles in various engineering disciplines. Topics covered include design of new materials having unique property combinations, selection of materials for use in specific service environment, prediction of materials performance under service conditions, and development of processes to produce materials with improved properties. The structural as well as functional use of metals, polymers, ceramics, and composites will be discussed. Credit 3 units.

MAE 370. Fluid Dynamics*Same as Env 370, CE 370.*

Fundamental concepts of fluids as continua. Viscosity. Flow fields: velocity, vorticity, streamlines. Fluid statics: hydrostatic forces, manometers. Conservation of mass and momentum. Incompressible inviscid flow. Dimensional analysis and similitude. Flow in pipes and ducts. Flow measurement. Boundary-layer concepts. Flow in open channels. Prerequisites: SSM 317, MAE 232. Credit 3 units.

MAE 371. Principles of Heat Transfer

Introductory treatment of the principles of heat transfer by conduction, convection, or radiation. Mathematical analysis of steady and unsteady conduction along with numerical methods. Analytical and semiempirical methods of forced and natural convection systems. Heat exchangers: LMTD and e-NTU analysis. Boiling and condensation heat transfer. Radiation between black-body and real surfaces. Radiation network analysis. Prerequisites: MAE 320, 370, SSM 317. Credit 3 units.

MAE 372A. Fluid Mechanics Laboratory

Physical laboratory exercises focusing on fluid properties and flow phenomena covered in MAE 370. Calibration and use of a variety of equipment; acquisition, processing, and analysis of data by manual as well as automated methods; training in formal report writing. Prerequisite: MAE 370. Open only to Co-op students graduating in December. Credit 1 unit.

MAE 372B. Heat Transfer Laboratory

Physical laboratory exercises, including some numerical simulations and computational exercises, focusing on heat-transfer phenomena covered in MAE 371. Calibration and use of a variety of laboratory instrumentation; acquisition, processing, and analysis of data by manual as well as automated methods; training in formal report writing. Prerequisites: MAE 371, 372A. Credit 1 unit.

MAE 380. Aerodynamics

Fundamental concepts of aerodynamics, equations of compressible flows, irrotational flows and potential flow theory, singularity solutions, circulation and vorticity, Kutta-Joukowski theorem, thin airfoil theory, finite wing theory, slender body theory, subsonic compressible flow and Prandtl-Glauert rule, supersonic thin airfoil theory, introduction to performance, basic concepts of airfoil design Prerequisite: MAE 370. Credit 3 units.

MAE 400. Independent Study

Independent investigation on topic of special interest. Prerequisites: junior or senior standing and permission of department chair. Credit variable, maximum 6 units.

MAE 404P. Mechanical Engineering Design Project

Working individually, students initially perform a feasibility study for a mechanical design project. Projects consist of an open-ended, original design or a creative redesign of a mechanical component or system requiring the application of those engineering science principles inherent to mechanical engineering. Feasibility is considered subject to economic, safety, legal, environmental, ethical, aesthetic, and other constraints in a competitive manufacturing environment. Feasible projects are then selected by teams of three to five students who perform the detailed design and optimization of the design concept developed in the feasibility study. The designs are carried out to detailed shop drawings and a mockup or prototype is built. Periodic oral presentations and written reports give the students practice in engineering and business communication. Guidance and consultation for the design projects are provided by the course and department faculty. Credit 5 units. Design credit 5 units.

MAE 404T. Current Topics in Engineering Design

Case studies of engineering failures, class discussion and short written papers are used to illustrate and stress the importance of engineering teamwork, ethics, and professional standards within the mechanical engineering discipline. Working in teams, students develop and present a case study on a topic of their choice. Guest lecturers introduce contemporary topics such as product liability, environmental regulations, green design, appropriate technologies, and concurrent engineering. One 1.5-hour meeting per week. Credit 1 unit.

MAE 408. Environmental Engineering Lab-Water/Soil*Same as ChE 408.***MAE 408A. Environmental Engineering Lab***Same as ChE 408A.***MAE 416. Advanced Mechanics of Deformable bodies**

Selected topics in the mechanics of deformable solids, presented at a level intermediate between introductory strength of materials and advanced continuum mechanics. Lectures will discuss structural stability, inelastic material behavior (plasticity, viscoelasticity), one-dimensional structures (cables, arches, curved beams), two-dimensional structures (plates, membranes, shells), and energy methods. Credit 3 units.

MAE 416B. Introductory Elasticity*Same as CE 416B.***MAE 417. Dynamic Response of Physical Systems**

Free and forced vibration of mechanical systems with lumped inertia, springs, and dampers. Methods of Laplace transform, complex harmonic balance, and Fourier series. Electrical analogs. Introduction to Lagrange's equations of motion and matrix formulations. Transient response of continuous systems by partial differential equations, by Rayleigh method, and by lumped parameters. Laboratory experiments. Prerequisites: MAE 232, SSM 317. Credit 4 units. Design credit 1 unit.

MAE 424. Manufacturing Processes

Production processes and machinery are explained and described. The analytical tools of machine science, heat transfer, vibrations, and control theory are applied to the solution of manufacturing problems. An emphasis is placed on the analytical development and application of engineering theory to manufacturing problems. Machine tools and automated production equipment are analyzed in terms of performance, design, drives, structure, and controls. Credit 3 units.

MAE 433. Aircraft Flight Dynamics and Control

An understanding of flight stability and control plays an important role in the ultimate success of the aircraft designs. Both military and civilian aircraft rely heavily on automatic control systems to provide stabilization and autopilots to aid in navigation and landing aircraft in adverse weather conditions. An integrated treatment of aircraft stability, flight control, aircraft dynamics, flying qualities, and the application of control theory to the synthesis of automatic flight control systems such as autopilot design is presented in this course. Prerequisites: SSM 317, MAE 370. Credit 3 units.

MAE 448A. Combustion and the Environment*Same as Env 448A, EnSt 448A.*

Introduction to fire and its application in combustion devices. Chemical thermodynamics and kinetics. Ignition and explosion. Deflagration and detonation waves. Transport phenomena and the governing equations for heat and mass transfer in chemically reacting flows. Laminar and turbulent

flame propagation, nonpremixed flames. The emission of combustion-generated pollutants and subsequent interaction with the environment. Toxic-waste incineration. Practical combustion devices. Prerequisites: MAE 321, MAE 371 or equivalent. Credit 3 units. Design credit 0.5 units.

MAE 449. Sustainable Air Quality*Same as Env 449.*

Introduction to sustainability and sustainable air quality. Systems science as an organizing principle for air quality management. Setting of air quality goals. Observing the status and trends. Establishing causal factors: energy use and chemical processing. Natural sources and variability. Corrective actions to reach air quality goals. Process design for emission reductions. Adoptive response to air pollution episodes. A Web-based class project will be conducted through the semester. Credit 3 units.

MAE 458. Structural Stability*Same as CE 458.***MAE 476. Properties of Materials***Same as ChE 476.***MAE 488A. Aerospace Propulsion**

Aerospace propulsion can be classified into four categories: propeller, jet, ramjet, and rocket propulsion. Among them gas turbine engines and jet propulsion are the essentials for modern aircraft. In this course, the fundamentals of different propulsion systems will be first introduced. Then the course focus will be on gas turbine engines. The material can be divided into four parts: (1) review of thermodynamics and compressible flow; (2) one-dimensional gas dynamics analysis of gas engine performance; (3) analysis and performance of air-breathing propulsion system; and (4) the analysis and design of gas turbine engine components, e.g. inlets, nozzles, turbomachinery (compressors, turbines, turbofan, turbopropeller) and combustors. Further, the fundamentals of ramjet and rocket propulsion will be also discussed in this course. Credit 3 units.

MAE 489. Aerospace Structures

Basic theory of elasticity, basic properties of aerospace materials: fatigue, creep, fracture, principles of stressed skin construction; bending, shear, and torsion of open and closed thin-walled cross-section beams including shear center, structural idealization, loads on flight vehicles: load factors, maneuver loads, V-n diagrams, gust loads etc.; joints and fittings, application to wings and fuselages, introduction to matrix method of structural analysis. Prerequisite: MAE 241. Credit 3 units. Design credit 1 unit.

Graduate Courses**MAE 500. Independent Study**

Credit variable, maximum 6 units.

MAE 502. Advanced Analytical Mechanics

Lagrange's equations and their applications to holonomic and non-holonomic systems; ignorable coordinates and reduction of degrees of freedom by first integrals, variational principles, Hamilton-Jacobi theory, and general transformation theory of dynamics. Engineering emphasis on applications such as theory of vibrations (about steady motions) and stability of motion, but with major emphasis on use of mathematical discipline to develop principles to resolve difficult nonlinear problems. Prerequisite: Senior or graduate standing in mechanical engineering or permission of instructor. Credit 3 units.

MAE 504. Advanced Space Mission Design

Working in teams, students will perform a complete "Phase A" study of a space mission, culminating in an overall system description, preliminary design and subsystem-level requirements, as well as a feasibility study for developing this mission at Washington University. The proposed mis-

sion will relate to near-term research interests of the instructor and other faculty with the intent of developing a real spacecraft. Students will be responsible for developing requirements and performing trade studies, preliminary sizing and mission analysis for all necessary subsystems (structures, power, thermal control, communications, command and data handling, attitude control, and/or navigation). Where possible, hardware prototypes and simulations will be created. Prerequisites: MAE 301 Spacecraft Design, CSE 200 Engineering and Scientific Computing, ESE 317 Engineering Mathematics (recommended), MAE 433 Aerospace Control Systems (recommended). Credit 3 units. Design credit 3 units.

MAE 505. Analysis of Rotary-Wing Systems

This course introduces the basic physical principles that govern the dynamics and aerodynamics of helicopters, fans, and wind turbines. Simplified equations are developed to illustrate these principles, and the student is introduced to the fundamental analysis tools required for their solution (e.g., harmonic balance, Floquet theory, perturbation methods, etc.). Credit 3 units.

MAE 507. Classical Mechanics

Same as Physics 507.

MAE 510. Dynamics of Air Pollution

Same as ChE 510.

MAE 512. General Thermodynamics

General foundations of thermodynamics valid for small and large systems, and for equilibrium and nonequilibrium states. Definitions of state, work, energy, entropy, temperature, heat interaction, and energy interaction in that order. Applications to simple systems, phase rule, perfect and semi-perfect gas, bulk-flow systems, combustion. Emphasizes application of energy and (particularly) entropy balances, and availability analysis to thermo-mechanical power generation, industrial applications and innovative energy-conversion schemes. Prerequisite: Senior or graduate standing. Credit 3 units.

MAE 515. Elasticity

Same as CE 515.

Elastic constitutive relations for isotropic and anisotropic materials. Formulation of boundary-value problems. Application to torsion, flexure, plane stress, plane strain, and generalized plane stress problems. Solution of three-dimensional problems in terms of displacement potentials and stress functions. Solution of two-dimensional problems using complex variables and conformal mapping techniques. Variational and minimum theorems. Credit 3 units.

MAE 517. Experimental Methods in Fluid Dynamics

Same as ChE 517.

Experimental approach to problem solving and validation of theoretical/computational methods. Uncertainties in measurement. Review of fundamental equations of fluid dynamics, properties of gases and liquids, similarity laws. Wind tunnels, water channels, simulation of phenomena in processing equipment. Pressure sensors, including optically reactive surface paint. Measurement of skin friction by direct force sensors, Preston and Stanton-tubes, diffusion analogies, liquid crystals. Flow visualization with laser light sheet; Schlieren, shadowgraph, and interferometric methods. Future trends; flow control, impact of micro-electronic sensors and actuators. Laboratory demonstrations and exercises using available instrumentation in Mechanical and Chemical Engineering Departments. Credit 3 units.

MAE 518. Aerosol Science and Technology

Same as ChE 518.

MAE 519. Inelastic Behavior of Materials

Theories of plasticity: yield surfaces, flow rules, elastic-plastic work-hardening solids. Slip-line fields. Limit theorems. History-dependent effects. Application of these theories to plastic forming processes and engineering structures. Solution of boundary-value problems using integral transforms. Credit 3 units.

MAE 520. Fracture Mechanics

Classical fracture and fatigue analysis and their limitations. Griffith-Irwin, linear-elastic fracture-mechanics analysis, historical aspects, formulation of stability criteria, sub-critical crack growth, anisotropic and inhomogeneous effects, fracture-control analysis, with applications to fracture-safety analysis relating to nuclear reactors, aircraft, rotating machinery, etc. Recent developments in elastic-plastic fracture-mechanics analysis and future prospects and applications. Credit 3 units.

MAE 521. Mechanical Behavior of Materials

This course is a materials science-based study of mechanical behavior of materials with emphasis on mechanical behavior as affected by processes taking place at the microscopic and/or atomic level. The response of solids to external or internal forces as influenced by inter-atomic bonding, crystal/molecular structure, crystalline/noncrystalline defects, and material microstructure will be studied. The similarities and differences in the response of different kinds of materials viz., metals and alloys, ceramics, polymers, and composites will be discussed. Topics covered include physical basis of elastic, visco elastic, and plastic deformation of solids; strengthening of crystalline materials; visco elastic deformation of polymers as influenced by molecular structure and morphology of amorphous, crystalline, and fibrous polymers; deformation and fracture of composite materials; mechanisms of creep, fracture, and fatigue; high strain-rate deformation of crystalline materials; and deformation of noncrystalline materials. Credit 3 units.

MAE 522. Theory of Vibrations

Analytical methods in vibrations. Review of Duhamel's integral, Laplace and Fourier transforms, and Fourier series with applications to transient response, forced response, and vibration isolation. Introduction to Lagrange's equations for linear, discrete systems including concepts of degrees of freedom, reducible coordinates, holonomic constraints, and virtual work. Matrix methods and state variable approach with applications to frequencies and modes, stability, and dynamic response in terms of real and complex modal expansions. Dynamic response of continuous systems by theory of partial differential equations, by Rayleigh-Ritz and Galerkin energy methods, and by finite difference and finite element algorithms. Credit 3 units.

MAE 522A. Nonlinear Vibrations

The general aims of the course are 1) to introduce students to concepts in nonlinear dynamics and vibration; and 2) to apply these concepts to nonlinear engineering problems. Specific topics will include: modeling of lumped and continuous nonlinear systems (strings, beams, and plates); vibrations of buckled structures; perturbation and other approximate analytical methods; the use and limitations of local linearization; properties of nonlinear behavior, such as dimension and Lyapunov exponents; stability of limit cycles; bifurcations; chaos and chaotic vibrations; experimental methods and data analysis for nonlinear systems. Concepts will be reinforced with a number of examples from recently published research. Applications will include aeroelastic flutter, impact dynamics, machine-tool vibrations, cardiac arrhythmias, and control of chaotic behavior. Credit 3 units.

MAE 525. Materials Selection in Engineering Design

Analysis of the scientific bases of material behavior in the light of research contributions of the last 20 years. Development of a rational approach to the selection of materials to meet a wide range of design requirements for conventional and advanced applications. Although emphasis will be placed on mechanical properties, other properties of interest in design will be discussed, e.g., acoustical, optical, and thermal. Prerequisite: senior or graduate standing or permission of instructor. Credit 3 units.

MAE 528. Mechanical Design Automation

Mechanical design methodology. Function structures. The design process as a nonlinear programming problem. Design modules. Module structure and interactions. Design databases. Generative databases. Generation of design modules. Solid modeling. Execution algorithms. Heuristic and exhaustive processes. Computer-designer interaction. Prerequisite: Senior or graduate standing or permission of the instructor. Credit 3 units. Design credit 3 units.

MAE 529. Flexible Manufacturing Automation

Survey of the application of robots in the automation of manufacturing industries. Use of robots to increase productivity, to improve quality or to improve safety. Special studies of applications of robots in painting, welding, inspection, and assembly. Prerequisites: Senior or graduate standing in mechanical engineering or permission of the instructor. Credit 3 units.

MAE 530. Conduction and Convection Heat Transfer

Analytical solutions to homogeneous and nonhomogeneous conduction heat transfer problems in Cartesian, cylindrical, and spherical coordinate systems are presented using the separation of variables and integral transform techniques. Conservation of mass, momentum, and energy equations for convective heat transfer problems are presented with analytical and semi-empirical solutions to free and forced convection in the laminar and turbulent regimes. Credit 3 units.

MAE 533. Fluid Dynamics I

Formulation of the basic concepts and equations governing a Newtonian, viscous, conducting, compressible fluid. Transport coefficients and the elements of kinetic theory of gases. Kinematics of vorticity; its production, transport, and diffusion. Incompressible potential flow; singular solutions, flow over bodies and lifting surfaces. Similarity methods in engineering. Viscous flow; the boundary layer, low Reynolds number flows. Laminar and turbulent flows. Emphasis is placed on physical content. Credit 3 units.

MAE 534. Fluid Dynamics II

Review of governing equations and thermodynamics relations for compressible flow. Elements of kinetic theory of gases. Steady, one-dimensional flows with friction and heat transfer. Shock waves; Rankine-Hugoniot relations, oblique shocks, reflections from walls and flow interfaces. Expansion waver; Prandtl-Meyer flow. Flows in nozzles, diffusers, and inlets. Two- and three-dimensional flows; perturbation methods, similarity rules. Compressible laminar and turbulent boundary layers, transition. Basic concepts of acoustic phenomena. Emphasis is placed on physical content relevant to air vehicle and test facility design. Credit 3 units.

MAE 535. Computational Fluid Dynamics

General remarks on the discipline and impact of computational fluid dynamics on engineering analysis and design. Fundamentals of finite-difference, finite-volume, and finite-element methods. Numerical algorithms for parabolic, elliptic, and

hyperbolic equations. Convergence, stability, and consistency of numerical algorithms, application of numerical algorithms to selected model equations relevant to fluid flow. Grid-generation techniques. Convergence acceleration schemes. Prerequisites: Senior or graduate standing in mechanical engineering or permission of the instructor. Credit 3 units.

MAE 537A. Conduction Heat Transfer

Homogeneous and nonhomogeneous boundary-value problems in Cartesian, polar, and spherical coordinate systems in one, two, or three dimensions, using integral transform techniques and separation of variables. Special topics include analogy methods, transient charts, Duhamel's method, Green's functions, adjoint solutions in composite materials, numerical methods and heat conduction in anisotropic solids. Credit 3 units.

MAE 538A. Convection Heat Transfer

Conservation of mass, momentum, and energy. Analytical solutions and semi-empirical analyses of free and forced convection in the laminar and turbulent regimes. Development of momentum-heat transfer analogies, mixing length and eddy-diffusivity concepts. Specific topics include liquid metal heat transfer, combined free and forced convection, and MHD heat-transfer concepts. Credit 3 units.

MAE 539. Radiation Heat Transfer

Formulation of the governing equations of radiation heat transfer. Electromagnetic theory of radiation. Properties of ideal and real surfaces. Techniques for solutions of heat transfer between gray surfaces, both diffuse and specular. Radiation in absorbing, emitting, and scattering media. Credit 3 units.

MAE 544. Solar Energy Thermal Processes I

Extraterrestrial solar radiation, solar radiation on earth's surface, and weather bureau data. Review of selected topics in heat transfer. Methods of solar energy collection including flat plate and concentrating collectors. Solar energy storage. Transient and long-term solar system performance. Prerequisites: MAE 320, 370, 371 or equivalent. Credit 3 units.

MAE 546. Finite Element Analysis

Same as CE 546.
Basic concepts. Generalized formulations. Construction of finite element spaces. Extensions. Shape functions, parametric mappings, numerical integration. Mass matrices, stiffness matrices, and load vectors. Boundary conditions. Modeling techniques. Computation of stresses, stress resultants, and natural frequencies. Control of the errors of approximation. Term paper: students are required to solve at least one significant engineering problem by the finite element method and submit a term paper at the end of the course. Prerequisite: CE-MAE 241 or equivalent. Credit 3 units.

MAE 550. Computer Integrated Manufacturing

Analysis and design of computer-integrated systems for discrete parts and assemblies manufacturing. Process planning, control, manufacturing decision support systems, microcomputers and networks. Programming of spatially oriented tasks, code generation, system integration. CIM-Lab assignments. Credit 3 units.

MAE 553. Facilities Design

The goal of the course is to provide the student with the information and analytical tools necessary to take a product design into production and for the design of an efficient manufacturing facility that will make the production feasible. Quantitative methods in the design of manufacturing facilities. Space allocation, assembly line design, material-handling systems, utilities, and environmental design for manufacturing facilities. Facil-

ity-location selection. Plant-layout development. Building, organization, communications, and support systems design. Material-handling equipment, flow and packaging. Automated storage and retrieval systems design. Computer-aided design of manufacturing facilities. Environmental requirements and design. Utilities design. In a major project, students will be required to analyze the design of a product and plan the manufacturing facility for its production. Credit 3 units. Design credit 3 units.

MAE 554. Engineering Project Management

Basic fundamentals and advanced concepts of engineering project management applicable to projects and programs, both large and small. Project management skills, techniques, systems, software and application of management science principles will be covered and related to research, engineering, architectural, and construction projects from initial evaluations through approval, design, procurement, construction, and startup. Credit 3 units.

MAE 555. Fundamentals of Material Fatigue

A survey of principles of cyclic deformation, crack initiation and crack growth by fatigue covering both microscopic and continuum aspects. Basic concepts are extended to practical engineering situations. An integrated treatment of fatigue is presented for different broad classes of materials while emphasizing the significant role of microstructure in influencing cyclic deformation and fracture. A balanced perspective of the various approaches to fatigue is presented. Examples of practical design considerations and case studies are included. Credit 3 units.

MAE 556. Optimization Methods in Engineering

Same as CE 556.
Mathematical methods including linear and nonlinear programming, optimality criteria, and fully stressed techniques for the design of structures and machine components. Two- and three-dimensional truss and frame systems. Static and seismic response with displacement, drift stress, and frequency constraints. Cross-sectional and topological optimization. Optimization problems of the type encountered in mechanical design such as drive shaft, brakes, and gears. Computer-aided design using optimization. Prerequisite: CS 265 or equivalent. Credit 3 units.

MAE 562. Nanocrystalline Materials

This course will discuss the current state of investigations into nanocrystalline materials. Topics to be covered will include the effect of the nanocrystalline state on the microstructure and the mechanical, thermo-physical, optical, and magnetic properties of metals, alloys, and solid-phase compounds; synthesis, production, and characterization of isolated nanoparticles, thin films, ultra fine powders, and dense nanocrystalline materials; the dimensional effects in isolated nanoparticles and high-density nanocrystalline materials; the important role of the interface in the formation of the structure and properties of dense nanocrystalline materials and the applications of nanocrystalline materials. Credit 3 units.

MAE 563. Measurement Techniques for Particle Characterization

Same as Env 563.
The purpose of this course is to introduce students to the principles and techniques of particle measurement and characterization. Practical applications of particle technology include air pollution measurement, clean manufacturing of semiconductors, air filtration, indoor air quality, particulate emission from combustion sources and so on. The course will focus on (1) integral moment measurement techniques, (2) particle sizing and size distribution measuring techniques, and (3) particle composition measurement techniques. The related

issues such as particle sampling and transportation, the instrument calibration, and particle standards will also be covered. Credit 3 units.

MAE 564. Topics in Nanotechnology

Same as ChE 526, CE 564A, Env 564.

This course will center on a discussion of topics in nanotechnology, with a focus on nanoparticles and their application in a variety of fields—materials science, chemical engineering, mechanical engineering, environmental engineering, and medicine. Credit 3 units. Design credit 2 units.

MAE 570. Advanced Machine Design

Stress, strain, and strain energy in one dimension; applications to oil well sucker rods, turbine, compressor, propeller, and helicopter blades. Advanced beam theory applied to tie rods, beams on elastic foundation, hooks, and curved bars. Helical, spiral, and leaf springs. Design of thick cylinders, shrink fits, and high-speed rotating disks. Analysis and design of circular and rectangular plates; effect of ribs. Torsion of shafting. Lubrication theory applied to bearings. High-speed ball bearings. Assigned problems. Credit 3 units.

MAE 572. Dynamics and Vibrations of Machines I

Kinetics of vibration. Fourier series. Free, forced, and transient vibration of lumped mechanical systems with masses or inertias, linear or torsion springs, and viscous damping. Solutions using differential equations, Laplace transforms, and phase-plane techniques. Distributed systems: method of Rayleigh, Stodola, and Galerkin. Critical speeds of shafts. Vibration isolation. Torsional vibration of reciprocating machinery. Balancing of rotors and engines. Vibration of taut wires, longitudinal, torsional, and lateral vibration of bars and beams. Vibration of membranes, plates, and shells: Rayleigh-Ritz, Galerkin, and Galerkin's counterpart methods. Nonlinear and self-excited vibrations. Matrix and iterative methods. Credit 3 units.

MAE 575. Analysis and Design of Fluid Power Systems

Design of hydraulic and pneumatic control and power systems using advanced concepts and analytical tools. Analysis of fluid flow through small orifices and between parallel and inclined planes. Theory of spool and flapper valves. Overview and definitions: feasibility, synthesis, analysis, and applications of fluid systems. Physical configuration of practical components: pumps, motors (rotary and linear, fixed and variable delivery), fluid lines and valves, accumulators and storage devices, etc. Integration of components into practical systems: ordinary power systems, servo-systems, hydrostatic transmissions, etc. Development of realistic performance diagrams using MATLAB Symulink. Application of performance diagrams in design and analysis of fluid power systems. Note: Symulink will be introduced at the beginning of the semester. Credit 3 units.

MAE 580. Building Environmental Systems Parameters

Sustainable design of building lighting and HVAC systems considering performance, life-cycle cost, and downstream environmental impact. Criteria, codes, and standards for comfort, air quality, noise/vibration, and illumination. Life cycle and other investment methods to integrate energy consumption/conservation, utility rates, initial cost, system/component longevity, maintenance cost, and building productivity. Direct and secondary contributions to acid rain, global warming, and ozone depletion. Credit 3 units.

MAE 581. Heating, Ventilating, and Air-Conditioning Analysis and Design I

Combustion and energy-conversion systems. Re-

frigeration equipment. Heating and cooling load calculations. Ventilation and air filtration. Heat-transfer equipment design. Air-handling equipment. Room air distribution. Air-conditioning systems: liquid and air, duct design and balancing; special space requirements and design of systems for unique structures. Part load system performance and economic evaluations. Credit 3 units. Design credit 0.5 units.

MAE 582. Heating, Ventilating, and Air-Conditioning Analysis and Design II

Combustion and energy-conversion systems. Refrigeration equipment. Heating and cooling load calculations. Ventilation and air filtration. Heat-transfer equipment design. Air-handling equipment. Room air distribution. Air-conditioning systems: liquid and air, duct design and balancing; special space requirements and design of systems for unique structures. Part load system performance and economic evaluations. Credit 3 units.

MAE 5902. Micro-Electro-Mechanical Systems (MEMS) I

This is the first semester of a two-semester course in MEMS. Topics will include: electronic micro-sensors (thermocouples, thermopiles, diodes, capacitors, and transistors), transducer principles (virtual work, electro-mechanical analysis, testing, dynamical macro-models), material properties, fabrication, and micro-machining. Design principles will also be explored including design systems, conceptual design, simulation, and final design. A case study will be used to illustrate these principles. The course will introduce and use IntelliCAD software. Prerequisites: undergraduate courses in materials and circuits and senior or graduate standing (or permission of the instructor). Credit 3 units.

MAE 5903. Micro-Electro-Mechanical Systems (MEMS) II

This course is the second in the sequence of MEMS courses designed to introduce one of the emerging technologies of 21st century. The course is intended to round off a modern curriculum for upper-level undergraduate and graduate students in mechanical, electrical, environmental, chemical, and biomedical engineering fields. The topics include: Advanced physical microsystems: pressure sensors, accelerometers, microfluids and micro-scale thermal phenomena, electroosmotic flows; microvalves, micropumps, optical MEMS; MEMS-based active flow control; system and packaging constraints on microsystem design. Compliant mechanisms in MEMS. Microfabricated electrochemical sensors. Bio-MEMS; advanced topics in MEMS from current literature and case studies. Application of MEMS for homeland security. Introduction to nanotechnology. Prerequisites: MAE 5902 MEMS-I or instructor's consent. Credit 3 units.

MAE 5904. Aircraft Control and Simulation

A comprehensive course on the fundamental principles and theory of aircraft control and simulation. Topics covered include aerodynamics, aircraft configurations, static stability, modeling, dynamic analysis, stability evaluation, classical control theory, multivariable control theory, and computer-aided design techniques. Concepts in introductory control theory are reviewed and extended to MIMO design techniques, robustness theory, and nonlinear design. Examples of actual designs from the aircraft industry are discussed. Appropriate for students with a background in introductory control theory. Credit 3 units.

MAE 652A. Structure and Rheology of Complex Fluids

Complex fluids are a broad class of materials that have a microstructure that is much smaller than the macroscopic scale but much larger than molecular size. These materials are central to a wide range of industrial, environmental, and biomedical applications. This course will cover basic rheological and structural measurements and data interpretation of complex fluids. We will study structure, dynamics, and flow properties of polymers, colloids, liquid crystals, and other substances with both liquid and solid-like characteristics. Selected topics include: Rheology of polymer solutions, colloidal suspensions, constitutive equations, self-assembling fluids such as surfactants, liquid crystals, block copolymers, and their roles in nanotechnology; geophysical flows (granular flow, lava flow, etc.); microfluidics (blood flow, cells in microchannels). Credit 3 units.

MAE 655. Non-Metallics

Structure, mechanical, and physical properties of ceramics and cermets, with particular emphasis on the use of these materials for space, missile, rocket, high-speed aircraft, nuclear, and solid-state applications. Credit 3 units.

MAE 657. Materials Characterization Techniques I

An introduction to the basic theory and instrumentation used in transmission electron, scanning electron, and optical microscopy. Practical laboratory experience in equipment operations, experimental procedures, and actual material characterization. Credit 3 units.

MAE 658. Materials Characterization Techniques II

Introduction to crystallography and elements of X-ray physics. Diffraction theory and application to materials science, including reciprocal lattice concept, crystal-structure analysis, including Laue methods, rotating crystal methods, powder method, including laboratory methods of crystal analysis. Credit 3 units.

Process Control Systems

Coordinating Committee

Milorad P. Dudukovic
(Chemical Engineering)

I. Norman Katz
(Electrical and Systems Engineering)

Gregory K. McMillan
(Chemical Engineering)

Hiroaki Mukai
(Electrical and Systems Engineering)

A Jointly Sponsored Undergraduate Program

Process Control Systems is a program intended to provide students with a broad background in chemical and systems engineering, with emphasis on the science and technology of process automation. Through a careful selection of courses in chemical engineering and systems engineering, a unified approach is developed to the analysis, design, operation and control of chemical and other manufacturing processes. Electives in systems engineering allow further in-depth specialization in applied mathematics, discrete-event systems, robotics, quality control, optimization, and dynamical systems.

In addition to the traditional laboratory work in chemistry, physics, and chemical engineering, a laboratory course in digital process control is offered based on computers and advanced commercial distributed-control equipment. Familiarity with computers and with process modeling, data acquisition, and control software is an essential component of the training. In the senior year, you can elect to complete a major design project either in chemical processing systems (chemical engineering) or in technological or engineering systems (systems engineering).

Upon successful completion, you receive both the Bachelor of Science in Chemical Engineering and the Bachelor of Science in Systems Science and Engineering.

The Process Control Systems program satisfies an increasing demand by manufacturing and petrochemical companies for professionals trained in advanced automation to improve product quality, to reduce costs, to improve capital productivity, and to improve safety and environmental quality. This interdisciplinary program provides the background necessary to combine traditional engineering skills with new systems-engineering techniques and meet these challenges. The program is staffed by faculty members from both departments and is supervised by a coordinating committee. You are assigned an adviser who is a member of the committee.

To satisfy the core requirements of the School of Engineering & Applied Science, the following courses are required:

	Units
Physics 117A, 118A	8
Chem 111A, 112A, 151, 152	10
Math 132, 132L, 233, 217	12
Humanities/social sciences electives	18

To complete the core requirements of both chemical engineering and systems engineering, the following additional requirements apply:

	Units
Chem 251, 257	5
ChE 325	4
ESE 317	4
EP 310	3
CSE 200	3
Biol 2960	4

The balance of the curriculum is carefully structured to satisfy the combined degree requirements and to meet the objectives of the program. The general degree requirements include the residency and other applicable requirements of the University and the School of Engineering & Applied Science.

The curriculum meets the requirements of both degrees and can be completed in four years. The total number of units required is 149. The semester course load exceeds the usual school-wide average of 15 units per semester, so you must be highly

motivated to accomplish this objective in eight semesters. The course load in individual semesters may be lightened by attending summer school or by adding an additional semester. A number of courses (e.g., ChE 320; CSE 200; EP 310; MAE 320; ESE 309, 317, 326, 351, 411; and humanities and social sciences courses) are usually offered in the summer as well.

Further information about the program can be obtained from the coordinating committee through either of the cooperating departments.

The Process Control Systems Program

	Units	
	Fall	Spring
First Year		
Calculus II, III (Math 132, 132L, 233).....	4	4
General Physics I, II (Physics 117A, 118A).....	4	4
General Chemistry I, II (Chem 111A, 112A).....	3	3
General Chemistry Laboratory I, II (Chem 151, 152).....	2	2
Matrix Algebra (ESE 309).....	—	3
Humanities or social sciences electives.....	<u>3</u>	<u>3</u>
	16	19
Second Year		
Organic Chemistry I (Chem 251).....	3	—
Organic Chemistry Laboratory I (Chem 257).....	—	2
Fundamentals of Biology (Biol 2960).....	—	4
Differential Equations (Math 217).....	4	—
Introduction to Systems Science and Engineering (ESE 251).....	3	—
Engineering and Scientific Computing (CSE 200).....	3	—
Engineering Mathematics (ESE 317).....	—	4
Probability and Statistics for Engineering (ESE 326).....	—	3
Thermodynamics (ChE 320).....	3	—
Engineering Analysis of Chemical Systems (ChE 351).....	3	—
Humanities or social sciences elective.....	<u>—</u>	<u>3</u>
	19	16
Third Year		
Signals and Systems (ESE 351).....	3	—
Operations Research (ESE 403).....	3	—
Numerical Methods (ESE 411).....	3	—
Transport Phenomena I, II (ChE 367, 368).....	3	3
New Product and Process Development (ChE 450).....	—	3
Mass Transfer Operations (ChE 357).....	—	3
Systems science and engineering elective.....	—	3
Materials Science (ChE 325).....	—	3
Technical Writing (EP 310).....	3	—
Humanities/social sciences elective.....	<u>3</u>	<u>3</u>
	18	18
Fourth Year		
Control Systems or Chemical Process Dynamics and Control (ESE 441 or ChE 462).....	3	—
Systems Design Project or Process Design (ESE 499 or ChE 478A).....	—	3
Chemical Reaction Engineering (ChE 471).....	3	—
Chemical Engineering Laboratory (ChE 473A).....	4	—
Principles of Surface and Colloid Science (ChE 480).....	—	3
Computer Science elective from the approved list.....	3	—
Humanities/social sciences elective.....	—	3
Digital Process Control Laboratory (ESE 449 or ChE 433).....	—	3
Systems science and engineering elective.....	<u>3</u>	<u>6</u>
	16	18

Professional Degree Programs

Associate Dean, Professional Degree Programs

Thomas A. Browdy (1983)
(Information Management)
Ph.D., Washington University, 1993
Project management, organizational dynamics of technology assimilation, system development methodologies

Senior Professor

H. Gerard Schwartz, Jr.
Ph.D., California Institute of Technology, 1966
Civil/environmental engineering

Associate Professor

James C. Ballard (1976)
(Technical Communications)
M.A., Washington University, 1976
Written, graphic, and oral technical communication; instructional design; hazard communications

Adjunct Professor

Tim Brooks (1997)
M.I.M./M.T.M., Washington University, 2000
Information systems, security

Adjunct Professors

John F. Bade (2000)
Ph.D., University of Missouri–Rolla, 1998
Strategic planning and management

Richard D. Beck (1985)
D.Sc., Washington University, 2004
Database design and systems

R. Michael Bickel (1994)
M.B.A., Southern Illinois University, 1981
Information systems

James Blair (1991)
Ph.D., Purdue University, 1971
Managerial computing, project management

Michele Bourdeau (1991)
M.D.P., Washington University, 1987
Information technology tools and applications

Allen H. Brown (1993)
M.D.P., Washington University, 1980
Information engineering, analysis and design

Michael D. Cannon (1993)
M.I.M., Washington University, 1994
Management of information systems

Vincent Ciarpella (1992)
Mgt.D., Webster University, 2002
Productivity and quality control

Robert J. Coambes (1985)
M.D.P., Washington University, 1978
Microcomputing technologies

William A. Coplin (1996)
J.D., Saint Louis University, 1994
Information systems

Christopher Curtis (1993)
B.S., Illinois State University, 1977
Programming languages

Christopher D. Dalton (1985)
B.S., Southeast Missouri State University, 1985
Information systems development

William J. Darte (1991)
M.B.A., Southern Illinois University–Edwardsville, 1984
LANS, network management, Internet technology

Vincent T. DeBlaze (1998)
M.S., Saint Louis University, 1965
Managing engineers and scientists in technology-based organizations

Paul Feaga
B.S., Saint Louis University, 1967
Systems development and integration

Barry Fox (2002)
Ph.D., University of Missouri–Rolla, 1987
Web development languages

Chris Gillham (2001)
M.T.M., Washington University, 2000
Internet infrastructure

Steven T. Grimes (1985)
B.S., Washington University, 1983
Information systems technology

Dave Groff
M.I.M., Washington University,
Information systems development

Linda Henman
Ph.D., Fielding Graduate Institute, 1998
Project management

Andrea J. Heugatter (1990)
B.A., Texas A&M University, 1979
Online documentation, software manuals, engineering documentation

Mark Holdenried (1995)
M.B.A., Washington University, 1987
Fourth generation languages

Edward Hopkins (1995)
M.B.A., Lindenwood University, 1981
Managing information technology

Erica Hubbard (2006)
M.B.A., Maryville University, 2003
Management information systems

David Imler
M.I.M., Washington University, 1985
Information management

Douglas Jaspering (2001)
M.S., Washington University, 2000
Lean manufacturing and management

Joe M. Jimerson (2000)
M.S., Arkansas State University, 1979
Network and systems security

William A. Kamman (1971)
B.S., Washington University, 1958
Managing information technology

Dennis C. Kleine (1999)
M.I.M., Washington University, 1997
Applied information technologies

Terry L. Klocke (1981)
M.B.A., Washington University, 1974
Accounting and management practices as applied to construction and technology management

Thomas Kramer (1988)
Ph.D., Michigan State University, 1970
Managing technical professionals

Tom Kulik
B.S., University of Minnesota, 1977
Strategic management of technology

Norman Lambert (1988)
M.E.M., Washington University, 1991
Engineering communications

Harold L. Mack (1982)
M.S., Washington University, 1971
Information technology implementation, computer systems software and hardware

Daniel J. Magoc (1995)
M.B.A., Saint Louis University, 1991
Information systems analysis

Gene U. Mariani (1975)
Ph.D., University of Missouri–Rolla, 1997
Production planning and control

Michael W. McDermid (1989)
M.I.M., Washington University, 1989
Network design and wireless communications technology

Larry Mickey (1989)
M.B.A., Harvard University, 1969
Technology marketing

Michael Murphy (2002)
M.B.A., Washington University, 1991
Impact of technological development on the business cycle and economic decisions

Richard A. Navarro (2000)
M.S., University of Missouri–Rolla, 1975
Information technology and architectures

Jeffrey W. Neumann (2001)
M.S., Washington University, 1992
Lean manufacturing and management

Brenda D. Newberry (1987)
M.B.A., Webster University, 1979
Telecommunications, computer software operating systems

Thomas O'Hanlon (1996)
M.I.M., Washington University, 1995
Information systems engineering design and construction

Alan Paradise (2000)
B.S., Washington University, 1983
Information systems development

Steven G. Parsons (1996)
Ph.D., University of California–Santa Barbara, 1982
Telecommunications regulation and public policy

Thomas R. Podlesny (1998)
M.B.A., DePaul University, 1988
Financial management for technological entrepreneurs

W. Scott Radeker (2004)
M.E.M., Washington University, 2003
Operations management

Cheryl Roth (2004)
B.S., University of Akron, 1979
Database technology, networking and programming

Gilbert J. Schmitt (1998)

M.S., Washington University, 1990
Wireless communications technology

Daniel J. Schoenekase (1977)

M.D.P., Washington University, 1978
Management of information systems

Randy Southmayd (2003)

M.E.M., University of Missouri–Rolla, 1988
Engineering management

Brian Spinzig (2005)

M.B.A./M.I.M., Washington University, 2005
Application development

David J. Sudbeck (1995)

D.Sc., Washington University, 2004
E-commerce, database applications

Stephen Todd

B.S., Eastern New Mexico University, 1985

Peter Tonies (2000)

M.E.M., Washington University, 1999
Engineering management

Glen E. Vest (1994)

M.S., University of Northern Colorado, 1981
Applied statistics, operations research, analytical methods for engineering and policy

Steven G. Westlund (1998)

M.I.M., Washington University, 1992
Information systems and software development

Bryan K. Wheelock (2001)

J.D., Washington University, 1982
Engineering law

Anne Williams (2001)

M.S., University of Akron–Ohio, 1985
Analysis of information technology

John Zaloudek (1993)

M.B.A., Saint Louis University (1989)
Technology transfer

Lecturers**Technical Communications****Deborah Allen** (2004)

M.S., University of Oklahoma,
Science writing and editing

Elizabeth A. Frick (1999)

M.S., Washington University, 1966
Technical writing

Sandra Matteucci (2003)

B.A., University of Texas–Austin, 1991
Technical writing

Eric Ratinoff (2003)

B.A., Washington University, 1993
Technical writing

Jo Louise Seltzer (2001)

Ph.D., Washington University, 1969
Technical writing

Senior Academic Advisers and Student Services Coordinators**Christine M. Merritt**

B.S., Southwest Missouri State University

Ann B. Rehme

M.A., Saint Louis University

About the Professional Degree Programs

Washington University's tradition of part-time education was established at the time of its founding in 1853. The first students admitted to Washington University were part-time students, who attended classes at the O'Fallon Evening School. William Greenleaf Eliot—one of the University's two founders—placed his greatest emphasis on the expansion and enrichment of educational programs for the adult student.

In the post–World War II period, enrollment in part-time programs grew rapidly. Returning veterans sought to reestablish their careers. The needs of the growing industrial and business communities to which they were returning were increasingly technological in nature. Throughout its history, and in close cooperation with technology-based businesses and industries in the Midwest, the engineering school has maintained a leadership position in developing focused degree programs and offering them in a format and on a schedule accessible to nontraditional students.

Part-time undergraduate programs, as well as graduate programs, are now available to working professionals. Through the Henry Edwin Sever Graduate School of Engineering & Applied Science, the Professional Degree Programs offer three graduate programs: Master of Engineering Management, Master of Information Management, and Graduate Certificate in Project Management. For additional information, visit www.pdp.seas.wustl.edu or call (314) 935-5484.

Undergraduate Programs in Information Management

Individuals wishing to pursue course work in information management have several options. They may apply to the Bachelor of Science in Information Management (B.S.I.M.), the B.S.I.M. with a Telecommunications Concentration, the 30-unit Intensive B.S.I.M. Program for those who already have a bachelor's degree, or the Certificate of Proficiency in Information Management. For additional information, go to www.pdp.seas.wustl.edu or call (314) 935-5484.

Bachelor of Science in Information Management

The B.S.I.M. curriculum is based on a foundation of core courses that provide students with a combination of practice, knowledge, and application of theory to information management problems. The program keeps pace with changing technology and related business practices by offering courses in areas such as the Internet, Java programming, and graphical user interfaces. The curriculum stresses quantitative and communication skills as well as a foundation in business environments. The required courses combine concepts and practices required by information systems professionals.

Telecommunications Concentration

The Telecommunications Concentration focuses on the technical and managerial issues surrounding the telecommunications industry. Students learn how to evaluate, integrate, and apply technologies to resolve business challenges. Students investigate the technology of network systems management by examining current and emerging tools and techniques. Students learn the integration necessary to address and resolve business and technical issues associated with the network infrastructure.

Intensive B.S.I.M. Program

The Intensive B.S.I.M. Program is designed for college graduates seeking the professional skills needed to enter a career in information management. The B.S.I.M. degree is awarded upon satisfactory completion of the 30-unit curriculum, which is scheduled over four semesters and one summer course. Students complete all of the courses in their pre-arranged order. A unique aspect of this program is that students progress through the program as a class. A final project caps off the program. Due to a managed schedule, all course work must be completed in two years from the date of first enrollment in the program. Applicants must have a baccalaureate degree from an accredited college or university and be highly motivated to engage in an intensive learning process.

Certificate of Proficiency in Information Management

This program is designed for students with little or no background in information systems. Students develop fundamental communication and quantitative skills, gain exposure to the field of business administration, and learn basic computer programming and information systems analysis. Most courses taken in the certificate curriculum can be applied toward the Bachelor of Science in Information Management degree. Students completing an undergraduate degree in another discipline at Washington University such as business, economics, or industrial psychology, may pursue the certificate of proficiency in conjunction with their primary degree. The certificate program is an excellent complement to many undergraduate degrees, allowing students to enhance their backgrounds and become more marketable in seeking employment opportunities.

Admission Requirements

Formal admission is required for all students seeking an undergraduate degree or certificate. To apply for admission to any of the undergraduate programs in information management, the following items must be submitted:

- Completed application form with a non-refundable \$20 application fee
- Official transcripts from each college or university attended
- Three letters of reference
- Short essay explaining your reasons for pursuing the degree or certificate

Additional requirements for applicants to the

Intensive B.S.I.M. Program:

- Technology Aptitude Test
- Brief personal interview

Additional materials may be required for admission at the discretion of the program director.

Transfer Credit

The undergraduate programs in information management accept transfer credit from other institutions that are fully accredited by the regional accrediting association. Transfer credit is given for work satisfactorily completed with a grade of C or better, if it is equivalent. All credit must be for work equivalent to work accepted for graduation at Washington University.

Community college students contemplating transfer to the undergraduate programs in information management are encouraged to consult an academic adviser to learn about transferring credits. The undergraduate programs in information management are designed specifically to build on the community college associate degree programs.

Academic Honors

Dean's List

In recognition of exceptional scholarship, students who have taken 6 credit hours for credit (not pass/fail) with a grade point average of 3.6 or higher during the academic semester will be cited on the Dean's List.

Alpha Sigma Lambda

Alpha Sigma Lambda is the National Honor Society that recognizes academically outstanding students in continuing higher education. Members are selected from the top 10 percent of their class in their undergraduate program. Members have a minimum grade point average of 3.2 on a 4.0 scale. This society is a nonprofit organization devoted to the advancement of scholarship.

Academic Issues

Pass/Fail Courses

Students pursuing the Bachelor of Science in Information Management may take up to 12 units of elective courses on a pass/fail basis. Required courses in the program may not be taken pass/fail.

Auditing a Course

Students may choose to audit a course. The charge for the course is the same as taking it for credit. If a student then chooses to apply for a degree program, the audited course does not count toward graduation credit.

Student Not Candidate for Degree

Students may take a course as a Student Not Candidate for Degree. Undergraduate programs in information management do not allow anyone to take more than 12 hours of course work that count toward the degree as a Student Not Candidate for Degree. Individuals are encouraged to take courses that are of interest to them, but those who are intending to pursue a degree or certificate must apply for admission.

Selected Graduate Courses

E80-502. Strategic Management of Technology

E80-503. Principles and Practice of R&D Management

E80-535A. Analytical Methods for Management and Policy Decisions

E80-571. Production and Use of Financial Information

E80-574. International Technology Management

E80-583. Financial Management for Technological Entrepreneurs

E80-584. Technological Entrepreneurship

E80-591P. Beyond the Numbers

T55-512. Applied Statistics for Engineering Management

T55-521. Human Performance in Engineering

T55-522A. Principles of Strategic Planning

T55-523A. Project Administration

T55-524. Managing Technical Professionals

T55-534B. Principles of Operations Management

T55-535. Productivity and Quality Control

T55-537. Lean Manufacturing and Management

T55-538. Supply Chain Management

T55-561. Engineering Law

T55-563A. Technical Communications

T55-564A. Basic Marketing for Engineers and Technologists

*T81-501C. Information Technology Architectures

*T81-502C. Systems and Applications Architectures

*T81-503C/D. Technology Change Management

*T81-504D. Management of Information Technology

T81-505A. Managerial Computing

T81-507D. Information Management and Enterprise Transformation

T81-508C. Enterprise Systems Development Architectures

T81-509B. Leading Projects and Teams

T81-516C. Enterprise Systems Development Methods and Frameworks

T81-520B. Management Support Systems

T81-5501. Modern Systems Development Practices

*T81-5503. Developing Leadership for Technology I

T81-5504. Project Management Fundamentals

T81-5505. Applying Project Management

T81-550D. Technical Elements of E-Commerce

T81-550J. Applications for E-Commerce Technologies

T81-550N. Top 10 Technologies

T81-5513. Developing Leadership for Technology II

T81-572B. Modern Database Concepts and Applications

T81-591B. Research and Research Design for Information Management

T82-531B. Introduction to Network-Centric Computing

T82-532B. Telecommunications Regulation and Public Policy

*T82-533C. Network Design

T82-535A. Economics of Technology

T82-541A. Network-Centric Computing

T82-550K. Network and Systems Security

T82-552A. Enterprise Networking Systems

T82-570A. Wireless Systems: Convergence of Voice and Data

T82-575. Internetworking with TCP/IP

T82-580. Network Systems Management

Undergraduate Courses

T53-333. Engineering Communications

Unambiguous communication of technical information is stressed. In addition to engineering reports, we will study the technical proposal process, and examine software documentation issues and factors involved in publishing online. Appropriate use of jargon, elements of ISO 9000 documentation, and preparation for stand-up presentations will be examined. There are frequent short writing assignments.

TSDP-205A. Fundamentals of Information Systems

This course will cover the concepts and fundamentals involved with information systems as found within enterprises. Topics include: hardware, software, connectivity, and usage. Usage will include general applications of computers, software development principles, and lab experiences with personal productivity tools such as word processors, spreadsheets, and database systems. The history of computing and computer devices will be reviewed along with the impact of computers on society. Credit 3 units.

TSDP-210A. Information Computing

This course is intended as an introduction to computer fundamentals, as well as to the logic and techniques used in programming. Students will learn methods to solve problems using computers. Number systems, machine language, assembly language, and C will be used to facilitate the programming techniques introduced. NOTE: T81-210A is recommended as a prerequisite for other programming courses. Credit 3 units.

TSDP-211B. Enterprise Information Systems

A comprehensive view of the concepts and fundamentals involved with information systems and predominant information flows within business enterprises. Topics include general application of computers and software development principles. Credit 3 units.

TSDP-251C. Information Systems Programming — COBOL I

Application of programming logic and techniques using COBOL. Structured programming techniques are used to write computer programs on workstation technology with an emphasis on business-oriented problems. Prerequisite: T81-210A. Credit 3 units.

*The typical prerequisite for these courses is senior or graduate standing, or permission of the instructor.

TSDP-261. Information Systems Concepts and Tools of Analysis

Focuses on analyzing information in organizations. Introduction to the system life cycle and to the basic tools used to define and analyze the logical requirements of existing and new systems. Manual and automated tools for analysis. Students will be expected to apply analytical tools to a variety of cases. Students who have taken T81-260 may not take this course for credit. Prerequisite: T81-211B or departmental approval. Credit 3 units.

TSDP-310A. Information Systems Technology

Overview of computer system hardware components, including data communication equipment. Mainframes, minicomputers, workstations, and microcomputers. Discussion of typical hardware system architecture and system software. Students who have taken T81-485 may not take this course for credit. Prerequisite: T81-210A or departmental approval. Credit 3 units.

TSDP-315. Survey of Programming Languages

A comparative study of programming languages. Procedural, nonprocedural, and fourth-generation languages. Advantages and drawbacks of each family of languages. Students will be required to complete programming assignments using a language in each of the families. Prerequisite: T81-251C or departmental approval. Credit 3 units.

TSDP-320B. Data Structures and File Structures

Applied data structures including stacks, queues, linked lists, graphs, trees. Sequential and random access files. Searching, sorting, and merging. Indexing, hashing. Prerequisite: T81-251C or departmental approval. Credit 3 units.

TSDP-330B. Software Design

Principles of software design and development. Provides an overview of the major design tools and methodologies. Students learn how various modeling techniques are applied in the planning, analysis, and design stages of the development process. Students solve complex problems, create documented solution models, and validate the models against stated problem requirements. Students discover how rule-based activity modeling significantly outperforms traditional activity modeling approaches in the areas of complexity management and fault prevention. Prerequisite: T81-261 or departmental approval. Credit 3 units.

TSDP-355B. Effective Human Communication for Information

Topics include basics of good writing, procedure and business writing, charting, stand-up presentations, documentation issues, interviewing techniques, and conflict management. Examination of how organizational structures channel and change human communications. Prerequisite: U11-102, 2 semesters of English composition, or departmental approval. Credit 3 units.

TSDP-357. Enterprise Operations and Organizations

Introduction to business enterprise—ownership, financial issues, management, and organizational structure. Common business functions reviewed such as marketing, manufacturing, accounting, and production. Credit 3 units.

TSDP-368. C Programming

Concepts and practice of C programming. Comparisons between ANSI standard C and other varieties/extensions of the language. Extensive laboratory homework. Prerequisite: T81-251C or departmental approval. Credit 3 units.

TSDP-400. Independent Study

Credit variable, maximum 6 units.

Bachelor of Science in Information Management Degree**Information Management Requirements**

	<i>Units</i>
Information Computing (T81-210A)	3
Enterprise Information Systems (T81-211B)	3
Information Systems Programming—COBOL I (T81-251C)	3
Information Systems Concepts and Tools of Analysis (T81-261)	3
Information Systems Technology (T81-310A)	3
Survey of Programming Languages (T81-315)	3
Data Structures and File Structures (T81-320B)	3
Software Design (T81-330B)	3
Special Topics (T81-450)	3
Operating Systems Concepts (T81-420A)	3
Database Design (T81-430A)	3
Information Systems Development (T81-431A)	3
Communications and Network Technologies (T81-484C)	3
Systems Development Project (T81-490B)	3
	<u>42</u>

Verbal and Written Communications Requirements

Engineering Communications (T53-333)	3
Effective Human Communication for Information Systems Professionals (T81-355B)	3
	<u>6</u>

Enterprise Management Requirements

Principles of Accounting I (U45-261)	3
Economic Statistics (U07-231)	3
Enterprise Operations and Organization (T81-357)	3
The Law of Business I (U44-251)	3
Marketing Concepts (U44-270)	3
	<u>15</u>

Information Management Elective Courses (see below)

27

Breadth Requirements

English composition and rhetoric	6
Humanities	6
Social sciences (must include Introduction to Psychology or Social Psychology)	6
Mathematics (college-level algebra or higher; calculus highly recommended)	6
Natural science	3
Arts and sciences elective (additional courses in humanities, social sciences, mathematics, or natural science)	3
	<u>30</u>

Total units required for degree

120

Information Management Elective Courses

All information management non-core courses offered within an area of focus are considered elective courses:

T81-205A. Fundamentals of Information Systems**T81-368. C Programming****T81-412B. Introduction to the Management of Information Systems****T81-400. Independent Study****T81-435. Theory and Practice of Relational Databases****T81-450. Special Topics in Information Management****T81-452A. Survey of Web Development Languages****T81-461. Microcomputing Technologies I****T81-462. Microcomputing Technologies II****T81-483A. Telecommunications Industry: Policy and Regulation****T81-486A. Network Communications for Systems Administrators****T81-487. Networking Systems****T81-488A Wide Area and Telecommunication Networks****T81-507D Information Management and Enterprise Transformation****T81-508C. Enterprise Systems Development Architectures****T81-509B. Leading Projects and Teams****T81-520B. Management Support Systems****T81-572B. Modern Database Concepts and Applications**

Courses at the 500 level are open to seniors only. Graduate tuition charged.

Courses at the 500 level applied to an undergraduate program will not apply toward a graduate program.

**Bachelor of Science in Information Management Degree
(Telecommunications Concentration)**

Information Management Core Requirements	Units
Fundamentals of Information Systems (T81-205A)	
<i>or</i>	
Information Computing (T81-210A)	3
Enterprise Information Systems (T81-211B).....	3
Information Systems Concepts and Tools of Analysis (T81-261).....	3
Information Systems Technology (T81-310A)	3
Survey of Programming Languages (T81-315)	3
C Programming (T81-368).....	3
Project Leadership (T81-412C)	3
Microcomputing Technologies (T81-461A)	3
The Telecommunications Industry: Policy and Regulation (T81-483A)	3
Communications and Network Technologies (T81-484C)	3
Network Communications for Systems Administration (T81-486A)	3
Networking Systems (T81-487).....	3
Wide Area and Telecommunication Networks (T81-488A)	3
Information Protection (T81-4504)	3
	42
Verbal and Written Communications Core Requirements	
Engineering Communications (T53-333)	3
Effective Human Communication for Information Systems Professionals (T81-355B)....	3
	6
Management Core Requirements	
Principles of Accounting I (U45-261)	3
Economic Statistics (U07-231)	3
Enterprise Operations and Organization (T81-357)	3
The Law of Business I (U44-251)	3
Marketing Concepts (U44-270)	3
	15
Telecommunications Management Elective Courses (see below)	27
Breadth Requirements	
Composition and Rhetoric (U11-101 and U11-102)	6
Humanities	6
Social sciences (must include Introduction to Psychology or Social Psychology).....	6
Mathematics (college-level algebra or higher; calculus highly recommended)	6
Natural science	3
Arts and sciences elective (additional courses in humanities, social sciences, mathematics, or natural science).....	3
	30
Total units required for degree	120

Telecommunications Management Elective Courses

All information management non-core courses offered within an area of focus are considered elective courses:

- T81-400. Independent Study**
- T81-435. Theory and Practice of Relational Databases**
- T81-450. Special Topics**
- T81-452A. Survey of Web Development Languages**
- T81-507D. *Information Management and Enterprise Transformation**

- T81-508C. Enterprise Systems Development Architecture**
- T81-509B. Leading Projects and Teams**
- T81-520B. Management Support Systems**
- T81-572B. Modern Database Concepts and Applications**

*Courses at the 500 level are open to seniors only.
Courses at the 500 level applied to an undergraduate degree will not apply toward a graduate program.

TSDP-412C. Project Leadership

This course covers project management principles, approaches, concepts, and leadership skills necessary for the successful completion of information systems projects. Credit 3 units.

TSDP-430A. Database Design

The relation of structured design concepts to the process of designing database structures. Database concepts from a logical and physical viewpoint. Survey of hierarchical, network, and relational database systems. A complex business case is used to design a solution for these database systems. Prerequisite: T81-320B or departmental approval. Credit 3 units.

TSDP-431A. Information Systems Development

Overview of the systems development life cycle. Tools and methods of systems analysis and design, as well as issues relating to systems implementation. Students gain experience with computer-aided software engineering (CASE) tools. Prerequisite: T81-261 or departmental approval. Credit 3 units.

TSDP-435. Theory and Practice of Relational Databases

Describes database management systems and focuses on the relational model. Students study and use SQL and ORACLE. ORACLE used both as an example of a relational database management system in practice and as an interface in application programming with COBOL. This is a laboratory course with enrollment limited to 15. Prerequisite: T81-321C. Credit 3 units.

TSDP-450. Topics in Systems and Data Processing

Credit 3 units.

TSDP-4504 Information Protection

This course introduces you to information protection for information technology. This course will focus on how to apply principles, concepts, tools and techniques to reduce risks, improve information security and contingency planning programs, and to increase overall organizational effectiveness. Information protection adds value by reducing the probability of unauthorized access or disruptions caused by human interaction. Risk mitigation is critical to the success of an organization. The course addresses the managerial aspects of information protection for future managers. It presents examples of information protection issues and practices implemented in today's business environment. Credit 3 units.

TSDP-452A. Survey of Web Development Languages

A survey of various types of web development languages, looking at the capabilities and typical uses of each type. Analysis issues concerning the tool's effect on application development, prototyping and evaluation of the trade-off between using procedural and nonprocedural languages. Languages to be studied will include HTML and JAVA. Credit 3 units.

TSDP-461A. Microcomputing Technologies

Discussion and study of microprocessor-based systems with emphasis on the hardware and architecture of system and network components and system software. System hardware components that are highlighted include the architecture of popular CPUs, mass storage, printing/scanning, monitors/video cards, and router and switching network components. Additional emphasis on the use of these systems with multimedia applications, e-commerce, and the Internet.

TSDP-483A. The Telecommunications Industry: Policy and Regulation

Domestic policy and regulation, from historical through current industry developments. Organizational structures for the formulation, adoption, and implementation of policy also discussed. Credit 3 units.

Bachelor of Science in Information Management (Intensive Program)

First Year

<i>Fall semester</i>	<i>Units</i>
Information Systems Technology (T81-310A)	3
Enterprise Information Systems (T81-211B).....	3

Spring semester

Communication and Network Technology (T81-484C)	4
Database Design (T81-430A)	3

Summer semester

Survey of Web Development Languages—HTML and Java (T81-452A)	3
--	---

Second Year

<i>Fall semester</i>	
Special Topics—Visual Basic Programming in a Business Environment (T81-4501)	3
Information Systems Development (T81-431A)	3

Spring semester

E-Business Strategies (T81-4502)	3
Project Leadership (T81-412C)	3
Final Project (T81-490C)	2
	30

Certificate of Proficiency in Information Management

Information Management Core Requirements

Fundamentals of Information Systems (T81-205A)	
<i>or</i>	
Information Computing (T81-210A)	3
Enterprise Information Systems (T81-211B).....	3
Information Systems Programming—COBOL I (T81-251C)	
<i>or</i>	
C Programming (T81-368).....	3
Information Systems Concepts and Tools of Analysis (T81-261)	3
Information Systems Technology (T81-310A)	
<i>or</i>	
Microcomputing Technologies (T81-461A)	3
Data Communications and Networking (T81-484B)	
<i>or</i>	
Information Systems Development (T81-431A)	
<i>or</i>	
Networking Systems (T81-487).....	3
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Verbal and Written Communications Core Requirements

Technical Writing (EP 310)	
<i>or</i>	
Effective Human Communication for Information Systems Professionals (T81-355B)	
<i>or</i>	
Upper-level English composition course	3
	3

Cognate Core Requirements

Area of study where information technology is an important issue (e.g., business, civil engineering, economics, education, physics, psychology)	12
	12
Composition and Rhetoric or equivalent	6
Social science	3
Mathematics (college-level algebra or higher)	3
Science	3
General electives (additional information management courses may be selected)	12
	27

Total units required for certificate60

TSDP-484B. Data Communications and Networking

Survey of the application of teleprocessing hardware and software technologies to the design and implementation of business systems. Implications of datacom technology for society in general and the business community in particular. Topics include modulation techniques, communication codes, media and channel characteristics, network topologies, protocols, multiplexing, line utilization, error control, and switching technologies. Prerequisite: T81-310A or departmental approval. Credit 3 units.

TSDP-484C. Communications and Network Technology

Survey of the application of teleprocessing hardware and software technologies to the design and implementation of business systems. Implications of datacom technology for society in general and the business community in particular. Topics include modulation techniques, communication codes, media and channel characteristics, network topologies, protocols, multiplexing, line utilization, error control, and switching technologies. Prerequisite: T81-310A or departmental approval. Credit 4 units.

TSDP-486A. Network Communications for Systems Administrators

An in-depth survey of data communications from a systems administrator/systems programmer perspective. Focus on network topologies, architecture, access methods and control as they relate to TCP/IP, SNA, VTAM, NT, UNIX, Novell, and other environments. Interface with CISCO routers is also discussed. Topics include selecting network connectivity options, planning configuration, elements of implementation, telecommunications access methods, and problem determination. Students will be able to understand and/or support end-to-end communications within enterprise server through small multiple desktop environments. Prerequisites: 484B or 487 or departmental approval. Credit 3 units.

TSDP-487. Networking Systems

Introduction to the interconnection of desktop computer systems into local and wide area networks. Emphasis on hands-on activity and demonstration of state-of-the-art technology whenever possible. Fundamental technologies, concepts, and business influences of networking and the relationship to information systems architecture and domestic/international standards. Popular commercial products and implementation alternatives, including systems design, administration, and management. Prerequisite: T81-484B. Credit 3 units.

TSDP-488A. Wide Area Telecommunication Networks

An introduction to WAN (Wide Area Network) and MAN (Metropolitan Area Network) technologies and their implementation alternatives. This course will focus on the network components, switching mechanisms, transmission protocols, and other technologies used to provide public carrier and private enterprise MAN and WAN services. Credit 3 units.

TSDP-490B. Systems Development Project

Comprehensive systems development project that requires analysis, design, and possible implementation alternatives. Systems life-cycle documentation is produced for the project. Also, documentation for project planning and control. CASE tools. Prerequisites: T81-310A, T81-430A, or departmental approval. Credit 3 units.

TSDP-490C. Final Project

A comprehensive project that requires analysis, design, and possible implementation alternatives. System life-cycle documentation will be produced for the project, along with project planning and control reports. Credit 1 unit.

**University of Missouri–
St. Louis/Washington
University Joint
Undergraduate
Engineering Program**

**Dean (at University of Missouri–
St. Louis)**

William P. Darby
Ph.D., Carnegie Mellon University

**Associate Dean (at University of
Missouri–St. Louis)**

Bernard J. Feldman
Ph.D., Harvard University

**Academic Adviser (at University of
Missouri–St. Louis)**

Mary E. McManus
M.Ed., University of Missouri–St. Louis

In 1993, Washington University and the University of Missouri–St. Louis held the first classes in the Joint Undergraduate Engineering Program. This partnership, the first of its kind in the United States, offers University of Missouri–St. Louis students the opportunity to benefit from the engineering program at Washington University and its century-long tradition of excellence. Effective in October 1999, the three bachelor's degrees (civil, electrical, and mechanical engineering) offered in our joint program were accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET). Besides being the first undergraduate engineering degrees offered in a public/private partnership, they are also the first such degrees to receive ABET accreditation.

The courses are organized for both full-time students and part-time students with daytime commitments who must attend classes in the evening. Students who enter the program take about half their course work—mathematics, physics, chemistry, humanities, and social sciences—on the campus of the University of Missouri–St. Louis. The remaining half of the degree program, consisting of upper-level engineering courses and laboratories, is taken on the Washington University campus. Students may choose civil, electrical, or mechanical engineering. Students receive their undergraduate engineering degrees from the University of Missouri.

For information about this program, please contact the University of Missouri–St. Louis Joint Undergraduate Engineering Program at 314/516-6800 or the Washington University School of Engineering & Applied Science at 314/935-8013.

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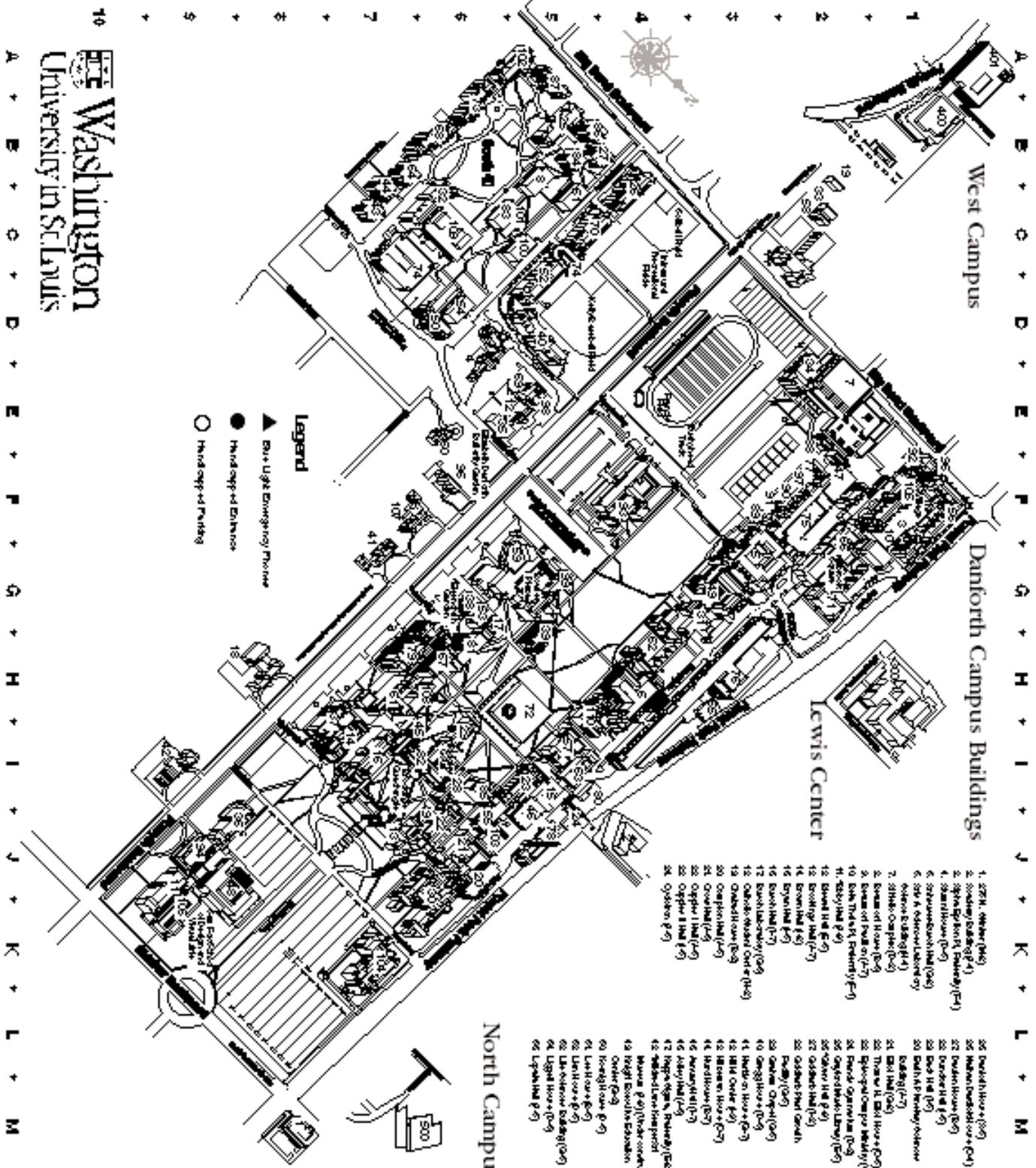
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