NOTE: This catalog represents the most accurate information available at the time of publication. The university reserves the right to correct or otherwise change any such information without notice at its sole discretion. With respect to course offerings, the departments have attempted to anticipate which courses will be offered, and by whom and when such courses will be taught. However, course offerings may be affected by changes in faculty, student demand, and funding. Although efforts have been made to indicate these uncertainties, course offerings are subject to change without notice.

William Marsh Rice University
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Telephone: Campus Operator 713-348-0000
Homepage Address: http://www.rice.edu
2001–2002 General Announcements online: http://www.ruf.rice.edu/~catalog/

Please address all correspondence to the appropriate office or department followed by the university mailing address given above.

Admission, Catalogs, Applications: Office of Admission
109 Lovett Hall; 713-348-4036

Business Matters: Office of the Cashier
110 Allen Center; 713-348-4946

Career Services, Part-time Employment off Campus: Career Services Center
Rice Memorial Center; 713-348-4055

Credits, Transcripts: Office of the Registrar
116 Allen Center; 713-348-4999

Financial Aid, Scholarships, Part-time Employment on Campus: Student Financial Services
116 Allen Center; 713-348-4958

Graduate Study: Chair of the Appropriate Department (see pages 82–85)

Undergraduate and Graduate Students, Undergraduate Curricula: Office of the Vice President for Student Affairs
101 Lovett Hall; 713-348-4996

Rice University is committed to equal opportunity in education and employment. It is the policy of Rice University to attract qualified individuals of diverse backgrounds to its faculty, staff, and student body. Accordingly, Rice University does not discriminate against any individual on the basis of race, color, religion, sex, sexual orientation, national or ethnic origin, age, disability, or veteran status in its admissions, its educational programs, or employment of faculty or staff. In employment, the university seeks to recruit, hire, and advance women, members of minority groups, individuals with disabilities, Vietnam-era veterans, and special disabled veterans.
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Message from the President

The General Announcements of Rice University is an indispensable resource in the academic life of Rice University. It presents the people, the programs, and the practices that make this university a singular center of higher education. The General Announcements serves as a reminder of the high standards to which Rice has always aspired. These standards are as vital and robust as they were when the first students matriculated in 1912.

We welcome your interest in Rice and your attention to the General Announcements. I encourage you to familiarize yourself with the information presented here: the distinctive academic backgrounds of our faculty; the rules and responsibilities of student life, both undergraduate and graduate; the diverse scope of our degree programs; and the richness of our curriculum.

Malcolm Gillis
President
William Marsh Rice University
Academic Calendar 2002–2003

Fall 2002

Sunday–Friday,
August 18–23 ..................... Orientation week for new students
Monday, August 26 ............. FIRST DAY OF CLASSES
Monday–Friday,
August 26–August 30 .......... Registration continues for undergraduate and graduate students
Monday, September 2 ........... Labor Day (holiday)
Friday, September 6 .......... Deadline: adding courses without a fee
Friday, September 20 .......... Deadline: late registration or adding courses
Deadline: dropping courses without a fee
Friday, September 27 .......... Deadline: changing Spring 2002 “Pass/Fail” to a grade
Deadline: instructors submitting final grades to clear “Incompletes” from Spring 2002 semester
Friday, October 11 ............. Deadline: mid-semester grades for first-year undergraduate students due
Deadline: college course plans due to Vice President for Student Affairs
Monday–Tuesday,
October 14–15 ................... Midterm recess
Wednesday, October 16 ........ Self-scheduled final examinations ONLY
Friday, November 1 ............. Deadline: last day to drop courses—graduate students and returning undergraduate students
Deadline: changing course status to "Pass/Fail" option
Deadline: filing of
• thesis master’s candidacy petitions
• certification of nonthesis master’s
• form for automatic master’s in the Office of Graduate Studies for mid-year conferral of degree
Deadline: filing Ph.D. candidacy petitions in Office of Graduate Studies for mid-year conferral of degree
Monday, November 4 .......... Deadline: filing application for mid-year degree conferral

Monday–Friday
November 11–15 .................. Preregistration begins for currently enrolled undergraduate, graduate, and fifth year students for the Spring 2003 semester
Deadline: applying for Spring 2003 conferral of degree
Monday–Wednesday
November 18–20 .................. Self-scheduling of final exams in undergraduate courses
Noon Deadline: Wednesday, November 20
Thursday–Friday
November 28–29 .................. Thanksgiving recess
Friday, December 6 ............. LAST DAY OF CLASSES
Deadline: last day to drop courses (first semester undergraduate students only)
Noon Deadline: submitting theses in the Office of Graduate Studies for mid-year conferral of degree
Saturday–Tuesday,
December 7–10 .................. Self-scheduled final examinations continues
Wednesday–Wednesday
December 11–18 .................. Self-scheduled final examinations continues
Wednesday, December 18 .... 5:00 P.M. Deadline: return of take home final examinations
Thursday, January 2 ............ 5:00 P.M. Deadline: all final grades due in the Office of the Registrar

Spring 2003

Monday, January 13 ............ FIRST DAY OF CLASSES
Monday, January 20 ............. Martin Luther King, Jr. Day (holiday)
Monday–Friday,
January 13–17 ................... Registration continues for undergraduate and graduate students
Friday, January 17 ............. Deadline: resolving grades of “Other” from Fall 2002 semester
Friday, January 24 ............. Deadline: adding courses without a fee
Friday, January 31 ............. Deadline: filings of
• thesis master’s candidacy petitions
• certification of nonthesis master’s
• form for automatic master’s in the Office of Graduate Studies for May 2003 conferral of degree
Deadline: filing Ph.D. candidacy petitions in the Office of Graduate Studies for May 2002 conferral of degree
Summer 2003:

**Early Session (May 12–30)**

- **Wednesday, April 16** ............ **Deadline** for early application discount (by 2:30 P.M.)
- **Friday, May 2** .................... **Deadline** for application to Early Session courses (by 2:30 P.M.)
- **Tuesday, May 6** ................ Notification sent to applicants who submitted applications by May 2
- **Monday, May 12** ............... **FIRST DAY OF CLASSES**
  - **Deadline** for final tuition payment and registration (9:00 A.M.–2:00 P.M.)
  - **Thursday, May 15** ............. **Deadline** for adding courses (by 3:00 P.M.)
  - **Deadline** for late registration (by 3:00 P.M.)
- **Wednesday, May 21** .......... **Deadline** for submitting refund requests (Must be received by this date)
- **Friday, May 23** ................ **Deadline** for dropping courses without academic penalty (no refunds) (by 3:00 P.M.)
  - **Deadline** for designating pass/fail option (by 3:00 P.M.)
- **Monday, May 26** ............... University holiday
- **Friday, May 30** .................. **LAST DAY OF CLASSES**
  - **Deadline** for dropping courses without academic penalty (no refunds) (by 3:00 P.M.)
  - **Deadline** for designating pass/fail option (by 3:00 P.M.)

**General Session (June 2–July 25)**

- **Wednesday, April 16** ............ **Deadline** for early application discount (by 2:30 P.M.)
- **Friday, May 16** ................. **Deadline** for application to General Session courses (by 2:30 P.M.)
- **Thursday, May 22** .............. Notification sent to applicants who submitted applications by May 16
- **Monday, May 26** ............... University holiday
- **Friday, May 30** .................. **LAST DAY OF CLASSES**
  - **Deadline** for completion of all Early Session course work, including final examinations. Exam schedule determined by instructor.
- **Friday, June 6** .................. **Deadline** for submitting grades to the School of Continuing Studies Summer School Office (by 3:00 P.M.)
  - **Deadline** for submitting theses in the Office of Graduate Studies for May 2003 conferral of degree
  - **Saturday–Thursday, April 26–May 1 at Noon** ...... **Deadline**: submitting theses in the Office of Graduate Studies for May 2003 conferral of degree
- **Saturday, May 3** ............... 9:00 A.M. **Deadline**: grades for all degree candidates due in the Office of the Registrar
- **Saturday, May 10** ............. **NINETIETH COMMENCEMENT**
- **Wednesday, May 14** .......... 9:00 A.M **Deadline**: all remaining grades for nongraduating students due in the Office of the Registrar
- **Friday, June 6** ................ **Deadline**: resolving grades of “Other” from Spring 2003 semester
  - **Saturday–Thursday, April 26–May 1 at Noon** ...... **Deadline**: submitting theses in the Office of Graduate Studies for May 2003 conferral of degree
- **Saturday, May 10** ............. **NINETIETH COMMENCEMENT**
- **Wednesday, May 14** .......... 9:00 A.M **Deadline**: all remaining grades for nongraduating students due in the Office of the Registrar
- **Friday, June 6** ................ **Deadline**: resolving grades of “Other” from Spring 2003 semester
  - **Deadline**: late registration or adding courses
  - **Deadline**: dropping courses without a fee
  - **Friday, February 7** ........... **Deadline**: changing Fall 2002 “Pass/Fail” to a grade
  - **Deadline**: instructors submitting final grades to clear “Incompletes” from Fall 2002 semester
  - **Friday, February 28** ........ **Deadline**: mid-semester grades for first-year undergraduate students due
  - **Deadline**: college course plans due to Vice President for Student Affairs
  - **Monday–Friday, March 10–14** ................ Midterm recess
  - **Friday, March 21** ............ **Deadline**: sophomores filing majors with the Office of the Registrar
  - **Monday, March 31** ........... **Deadline**: last day to drop courses—graduate students and returning undergraduate students
  - **Deadline**: changing course status to “Pass/Fail” option
  - **Monday–Friday, March 31–April 4** .......... Preregistration begins for currently enrolled undergraduate, graduate, and fifth-year students for the Fall 2003 semester
  - **Monday–Wednesday, April 14–16** .......... **Deadline**: Self-scheduling of Final Examinations in undergraduate courses
  - **Friday, April 25** ............ **LAST DAY OF CLASSES**
    - **Deadline**: last day to drop courses (for January 2003 undergraduate student admits only)
    - **Noon Deadline**: submitting theses in the Office of Graduate Studies for May 2003 conferral of degree
  - **Saturday–Thursday, April 26–May 1 at Noon** ...... Final examinations for all degree candidates
    - **Wednesday–Wednesday, April 30–May 7** .......... Final examinations for nongraduating students
  - **Saturday, May 3** ............... 9:00 A.M. **Deadline**: grades for all degree candidates due in the Office of the Registrar
  - **Saturday, May 10** ............. **NINETIETH COMMENCEMENT**
  - **Wednesday, May 14** .......... 9:00 A.M **Deadline**: all remaining grades for nongraduating students due in the Office of the Registrar
  - **Friday, June 6** ................ **Deadline**: resolving grades of “Other” from Spring 2003 semester

- **Friday, February 7** ........... **Deadline**: late registration or adding courses
- **Deadline**: changing Fall 2002 “Pass/Fail” to a grade
- **Deadline**: instructors submitting final grades to clear “Incompletes” from Fall 2002 semester
- **Friday, February 28** ........ **Deadline**: mid-semester grades for first-year undergraduate students due
- **Deadline**: college course plans due to Vice President for Student Affairs
- **Monday–Friday, March 10–14** ................ Midterm recess
- **Friday, March 21** ............ **Deadline**: sophomores filing majors with the Office of the Registrar
- **Monday, March 31** ........... **Deadline**: last day to drop courses—graduate students and returning undergraduate students
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- **Friday, April 25** ............ **LAST DAY OF CLASSES**
  - **Deadline**: last day to drop courses (for January 2003 undergraduate student admits only)
  - **Noon Deadline**: submitting theses in the Office of Graduate Studies for May 2003 conferral of degree
  - **Saturday–Thursday, April 26–May 1 at Noon** ...... Final examinations for all degree candidates
    - **Wednesday–Wednesday, April 30–May 7** .......... Final examinations for nongraduating students
  - **Saturday, May 3** ............... 9:00 A.M. **Deadline**: grades for all degree candidates due in the Office of the Registrar
  - **Saturday, May 10** ............. **NINETIETH COMMENCEMENT**
  - **Wednesday, May 14** .......... 9:00 A.M **Deadline**: all remaining grades for nongraduating students due in the Office of the Registrar
  - **Friday, June 6** ................ **Deadline**: resolving grades of “Other” from Spring 2003 semester
Monday, June 23 ................... **Deadline** for submitting refund requests (Please refer to section on Withdrawal Penalty and Tuition Refund)

Friday, July 4 ....................... No classes

Wednesday, July 9 ............... **Deadline** for dropping courses without academic penalty (no refunds) (by 3:00 P.M.)
**Deadline** for designating pass/fail option (by 3:00 P.M.)

Friday, July 25 ..................... LAST DAY OF CLASSES

Tuesday, July 29 ................. **Deadline** for completion of all General Session course work, including final examinations

Friday, August 1 ................. **Deadline** for submitting grades to School of Continuing Studies Summer School Office (by 3:00 P.M.)

Friday, August 8 ................. Final grades mailed from the Office of the Registrar
The University and Campus

Rice is a private, independent university dedicated to the “advancement of letters, science, and art.” Occupying a distinctive, tree-shaded, nearly 300-acre campus only a few miles from downtown Houston, Rice attracts a diverse group of highly talented students with a range of academic studies that includes humanities, social sciences, natural sciences, engineering, architecture, music, and business management (graduate study only). The school offers students the advantage of forging close relationships with members of the faculty and the option of tailoring graduate and undergraduate studies to their specific interests. Students each year are drawn to this coed, nonsectarian university by the creative approaches it historically has taken to higher education.

One of the unique features of Rice is its residential colleges. Before matriculating, each of the university’s 2,700 undergraduates becomes a member of one of nine residential colleges, which have their own dining halls, public rooms, and dorms on campus; most of the first-year students and close to 80 percent of all undergraduates reside at their associated colleges. Because each student is randomly assigned to one of the colleges and maintains membership in the same college throughout the undergraduate years, the colleges are enriched by the diversity of their students’ backgrounds, academic interests and experiences, talents, and goals. A faculty master, who is assigned to each college and lives in an adjacent house, helps cultivate a variety of cultural and intellectual interests among the students, as well as supporting an effective system of self-government. Other faculty or members of the community serve as associates to individual colleges. The experience of college residence is indispensable to conveying the rich flavor of academic life at Rice, allowing students to combine their usual studies with an array of social events, intramural sports, student plays, lecture series, innovative college-designed courses, and an active role in student government.

Graduate students come to Rice for the chance to work closely with eminent professors and researchers who are seeking to extend the horizons of current knowledge. Although most of the approximately 1,600 graduate students live off campus, taking advantage of the city’s readily available and affordable housing, space is also available in the university-owned Graduate Apartments. Graduate students have a voice within the university community through the Graduate Student Association, which organizes and funds regular social events.

Rice offers students the pleasures and challenges of academic life within the peaceful enclosure of a campus widely acclaimed for its beauty. Campus buildings, including an extensive computer center and the 2 million-volume Fondren Library, form graceful groupings under spreading live oaks. Recent additions include the architecturally stunning Anne and Charles Duncan Hall, a state-of-the-art building for computational engineering; James A. Baker III Hall, which houses the Institute for Public Policy and the School of Social Sciences; and E. Dell Butcher Hall, home to the Center for Nanoscale Science and Technology. Additionally, Rice boasts the largest open-air stadium in the city.

Rice students also enjoy all the commercial and cultural advantages of a major metropolitan center. The school maintains extensive technological links to the area’s many colleges and universities, the acclaimed Texas Medical Center, and other resources. And both students and faculty enjoy Houston’s panoply of cultural offerings, from opera to blues clubs and from a renowned collection of post-impressionist art to alternative art spaces. Rice and Houston together provide an ideal learning and living environment.
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Student Responsibility

The university expects all Rice students to exercise personal responsibility over their actions. Their behavior should reflect a respect for the law and for their contractual obligations, a consideration for the rights of others, and shared standards of considerate and ethical behavior.

Rice encourages self-discipline, recognizing that effective student government, including judicial processes, and the integrity of the honor system depend on the willingness of all students to meet community standards of conduct.

The university, however, reserves the right to insist on the withdrawal of any student whose conduct it judges to be clearly detrimental to the best interests of either the student or the university. The appropriate authorities take such action only after careful consideration.

No individual or group may use the name of the university or one of its colleges without prior approval of the university or the college.

The Honor System

The honor system, one of the oldest and proudest traditions at Rice, is administered by the Honor Council, whose student members are elected each year by the student body. Adopted by a student vote in 1916, the honor system has remained essentially the same since that time but for changes in the procedures and membership of the Honor Council.

Students take all written examinations and complete any specifically designated assignments under the honor system. By committing themselves to the honor system, all students accept responsibility for assuring the integrity of the examinations and assignments conducted under it. The Honor Council is responsible for investigating reported violations and for conducting a hearing when the facts warrant. The assistant dean of student judicial programs, who reviews the results of the investigations and hearing, considers the council’s recommendations when issuing penalties.

The Honor Council conducts an ongoing program to acquaint new students and faculty with the honor system.

Faculty Grading Guidelines

The Committee on Examinations and Standing has drawn up the following guidelines on grading. Additional information is available on pages 34–36.

- The basis for grading and the expectations on all written assignments or tests should be clearly explained to the class in advance, preferably in writing at the beginning of the semester. The instructor should explain clearly which assignments or homework are covered by the honor system and which are not. To prevent allegations of plagiarism on written assignments, students should be warned that all direct and indirect quotations from other sources should be properly acknowledged. The instructor should explain the extent to which the student’s paper is expected to be independent of the references and clearly distinguishable from them.
- Instructors should be willing to give any student an explanation of his or her grade as consistent with the grading for the rest of the class. For this reason, the committee urges the faculty to preserve all examinations and written material not returned to students, as well as grade records, for at least the following semester so that students may, if they wish, review with their instructor the basis for the grade received.
- Instructors may not change a semester grade after the grade sheet has been submitted to the registrar, except when there is a clerical error in calculating the grade. This is a long-standing university rule of which the faculty are reminded by the registrar at the end of each semester. It is designed in part to protect the faculty from student pressure for grade changes. All other grade changes, including retroactive change to withdrawal or incomplete, must be approved by the Committee on Examinations and Standing on the basis of a written petition from the student and on information from the instructor.
- There is no university requirement that a final examination be given in a course. It is university policy that final examinations that cover more than the material since the last examination, that are the only exam in the course, or that are comprehensive of the entire course may be given only during the final examination period. Such examinations may not, for example, be labeled “tests” and administered during the last week of classes. Final examinations are normally of 3-hour duration. Faculty who, under exceptional circumstances, wish to give longer examinations may do so only if the exam is scheduled as take-home. Under no circumstances may final exams exceed five hours. The “due date” for all take-home final exams is the end of the examination period.
- First-year students receive mid-semester grades around the eighth week of the fall and spring semesters so that they can, if advisable, enroll in tutoring or drop a class for which they may not be prepared. Faculty who teach first-year students in any of their classes will be asked to submit grades of standing for these students during the seventh week of the semester and should schedule the grading of tests, quizzes, or homework assignments accordingly. These grades are not recorded on the student’s transcript nor calculated in the grade point average, but they are important indicators for students and their faculty advisers.
- Departments using teaching associates, adjunct professors, or visiting faculty of any kind should make sure these teachers are familiar with Rice grading procedures. A regular faculty member who is well-versed in the grading guidelines should be assigned to assist such instructors.

The chair of the Committee on Examinations and Standing or the vice president for student affairs will be glad to advise any faculty member faced with exceptional circumstances that may justify special consideration. Students may petition the committee concerning the application of these guidelines. Suspected or possible violations of the honor system should be submitted to the Honor Council.
Fondren Library

Fondren Library provides a wealth of resources for study and research. Its permanent collection numbers 2.1 million volumes, more than 2.7 million microforms, 28,000 current periodical and serial titles, and 51,000 titles on audiotape, videotape, and compact disc. The library is well-equipped to meet the needs of students and faculty.

Students exploring the library’s extensive holdings can take advantage of its networking systems. With Macintosh, PC, and UNIX workstations scattered throughout the first floor of the library, students looking for information have their choice of print or electronic media. Wireless networking is available on the first floor.

If they want to postpone a trek to the library, students may use the campuswide information system, RiceInfo, to access the library’s online catalog. RiceInfo also links students to a wide variety of indexes and a growing collection of full-text reference sources, as well as primary literature.

The library staff is committed to the use of evolving information technologies, whether in helping to develop collections of applications, resources, and tools tailored to a particular subject or need or in facilitating user access to networked information sources. The library’s electronic resources also include multimedia packages and large data sets, and students will find many specialized research tools available, such as computer programs for text analysis and geographic information systems software.

Fondren Library provides a home for a number of separate collections. It is a federal depository for U.S. government publications, patents, and trademarks. The Woodson Research Center holds the library’s rare books, manuscripts, and university archives. The library also houses the Alice Pratt Brown Fine Arts Library. The Business Information Center is in the Jesse H. Jones Graduate School of Management.

The library has an open-shelf policy that encourages creative browsing. Students may use a host of special facilities, including individual study carrels, group-study rooms, audiovisual equipment, electronic workstations, and microform reading carrels. Photocopiers are available in the library.

Fondren Library operates on the philosophy that a library is more than a collection of books. It is, instead, an essential campus resource with a knowledgeable staff and up-to-date technologies—an inviting place that introduces students and faculty to a range of rich possibilities as they pursue their independent inquiries.

Computing and Networking Resources

Overview

The four departments of the Information Technology (IT) division provide centralized services and resources to the entire Rice campus, including:

- computing support staff
- educational labs
- multimedia classrooms
- campus network
- Internet connectivity
- campus telephone service

The resources of particular interest to students include:

- computer accounts for course work, e-mail, and Internet access
- computing help from residential college consultants and a centralized help center
- campus Unix, Macintosh, and PC labs
- network connection ports in each residential college room
- wireless network access in the library and other campus commons areas
- dialup accounts for off-campus network access
- free, one-to-three-hour training classes on computing topics

Educational Computing: Owlnet

“Owlnet” is the name of the computing resources and network designated for educational use by students and faculty. The Owlnet system is comprised of three computing platforms: Unix workstations, and Macintosh and PC-compatible microcomputers. Using Owlnet, students can fulfill coursework requirements, store their academic data, print, browse the web, create their own web pages, and use electronic mail to communicate with professors, classmates, friends, and family. All undergraduates and graduate students are eligible for an Owlnet account. (When students arrive on campus, they can apply online at: http://apply.rice.edu.)

Campus Labs

Owlnet computing labs are located across the campus, including one in each residential college. Most Owlnet labs are available 24 hours a day with a Rice ID card and proper authorization. Some labs are limited to hours of operation for the building. Note that some computer labs are used as classrooms during certain posted hours. Lists of available hardware and software are available on the web (http://www.rice.edu/Computer/labs.html). Some of the larger labs are:

- Fondren Library (1st and 2nd floor)
- Mudd Lab (1st floor)
- Anderson 218
- Ryon Lab 102

Student-Owned Computers

Each residential college dorm room has one active network port for every occupant, providing a direct connection to the campus network and the Internet. Students can seek help from the College Computing Associates (see Help below) to install and configure the necessary network software required to connect their computer to the campus network.

Students living off campus can connect to the Rice network via the Rice dialup service. Instructions on dialup access are available from the Consulting Center in 103 Mudd Lab or online (http://www.rice.edu/Computer/Documents/). From an on campus workstation, students can apply for a dialup account via the web (http://apply.rice.edu).

Students who have their own home Internet access service, such as an Internet Service Provider, ADSL, or cable modem service can apply to use Rice’s VPN or Virtual Private Network. VPN allows the secure transporting of data between Rice University and a remote user connected to the Internet outside of Rice. For more information, look online (http://www.rice.edu/Computer/Dialup/vpn).

Help

For undergraduates, each college has two resident student College Computing Associates (CCAs) to help with questions about using personal computers and Rice
computing facilities. (To learn who your CCAs are, go to: http://www.rice.edu/Computer/student.html). In addition, computer consultants are available at the Consulting Center, located in 103 Mudd Lab. Students may call the Consulting Center during normal business hours at 713-348-4983, or submit questions any time via e-mail to problem@rice.edu or via the web (http://problem.rice.edu). Consultants are also available at the reference desk in Fondren Library during posted hours.

For graduate students, computing assistance is provided by divisional computing teams, who also provide assistance to the faculty and staff within each academic division. For divisional team members’ contact information, look online (http://www.rice.edu/Computer/facultystaff.html).

Publications about computing services and how to use supported systems and software are available in 103 Mudd Lab or on the web (http://www.rice.edu/Computer/Documents). Students can learn more about computing by taking a variety of Short Courses covering many of the programs and operating systems used at Rice (http://www.rice.edu/Computer/Short_Courses). Short Courses are one-to-three-hours long and are free to students.

For Further Information

Students can find more information about computing resources on the Information Technology computing web pages (http://www.rice.edu/Computer). Students who need help or wish to ask a question can contact the Consulting Center (103 Mudd Lab, 713-348-4983, problem@rice.edu). Consulting staff can help students get started and guide them to additional resources.

Student Health and Counseling Services

Student Health Fee

By paying an annual student health service fee, all students gain access to both the Student Health Service and the Rice Counseling Center. Detailed information on the care and services each provide is available from both clinics.

Student Health Service

This outpatient primary-care clinic in the north wing of Hanszen College is staffed by two physicians and two nurses. Clinic hours are from 8:30 A.M. to 5:00 P.M., Monday through Friday, during fall and spring semesters. For after-hours and weekend medical care, students may choose among a number of local hospitals. Students must pay for all medical care outside the clinic’s purview, including blood tests, x-rays, and outside physician consultations. Should such medical care be necessary, students are urged to review their insurance coverage and pick the best available option.

In serious emergencies, students should call the Student Health Service (713-348-4966 during work hours) or the Rice University Police Department (713-348-6000).

The clinic is open full time from the first day of Orientation Week until the day before commencement. It is closed during the Christmas break and the Thanksgiving and Easter weekends, but it remains open in the mornings during midterm breaks. The clinic is also open for reduced hours during the summer months.

The Student Health Service provides the following:

- Primary care for illness and injury with referrals to specialists when needed
- Maintenance of health records for all students
- Immunizations
- Contraceptive counseling and routine Pap smears
- Allergy shots (students must provide serum after a specialist allergy workup)
- Physical examinations (e.g., for employment, transfer to another school, or scholarship expenditures)

Confidentiality. The Student Health Service physician–patient relationship is a confidential one, and medical records will not be released except as required by law, or when the patient poses a significant risk to herself or himself or another person.

Health Insurance. All Rice students must have health insurance, and MUST enter details of their health insurance online at http://dacnet.rice.edu/services/health by August 15 to avoid automatic billing. Students may purchase insurance through the university, as described in a brochure sent to incoming and returning students each summer; dependent coverage is also available. For additional brochures and applications, students should contact the Cashier’s Office, Student Health Services, or the Rice Counseling Center. Rice’s group coverage for the 2002–2003 school year is effective from 12:01 A.M., August 15, 2002, until 12:01 A.M., August 15, 2003.

Rice Counseling Center

Rice Counseling Center, in 301A Lovett Hall, addresses students’ psychological needs with various programs and services. The center is open year-round except for the following:

- Scheduled holidays and occasional all-day staff retreats
- Office hours for counseling and consultations are 8:30 A.M. to 1:00 P.M. and 2:00 P.M. to 5:00 P.M., Monday through Friday.
- Students can make appointments by calling 713-348-4867 or by visiting the center.

Typically, most students who use the counseling services bring with them very common concerns: roommate problems, breakup of a relationship, academic and/or interpersonal anxiety, family problems, difficulties adjusting to Rice, or confusion about personal goals, values, and identity. Counselors are equipped to handle a variety of issues, including substance abuse, eating disorders, sexual assault/abuse/date violence, depression, and the coming-out process. Rice Counseling Center offers both individual and group counseling as well as educational workshops and programs.

When students need prolonged or specialized counseling or treatment, counselors refer them to an outside provider. The students, or their health insurance, must pick up those costs. All students who have paid the Health Service Fee are eligible for initial assessment sessions, consultations, crisis intervention, and educational programming. Individual or group counseling may also be available, if appropriate.

The Rice Counseling Center provides the following services:

- Initial assessment
- Short-term individual and couples counseling
- Group therapy and support groups
- Medication consultations with the center’s consulting psychiatrist
- Other consultations (e.g., how to make a referral or how to respond to a friend in distress)
- Educational programming (e.g., various presentations on mental health issues)
Career Services Center

Students with Disabilities. Because students who have physical limitations may find it difficult to reach the Rice Counseling Center’s third-floor location in Lovett Hall, staff will arrange to see those students in a more accessible location on campus. Students should call the center to make these arrangements.

Confidentiality. Counseling services are confidential: information about a student is not released without that student’s written permission. By state law, confidentiality does not extend to circumstances where (1) there is risk of imminent harm to the student or others; (2) the counselor has reason to believe that a child or an elderly or handicapped person is, or is in danger of, being abused or neglected; (3) a court order is issued to release information; (4) the student is involved in a criminal lawsuit; or (5) the counselor suspects that the student has been the victim of sexual exploitation by a former health provider during the course of treatment with that provider.

Student Resource Centers

Rice Memorial Center/Ley Student Center

The Rice Memorial Center/Ley Student Center provides a base for a range of student-centered activities. It is also an informal place where students, faculty, and staff can congregate. Individuals meet over casual meals at Sammy’s Cafeteria and drinks at the Coffeehouse and Willy’s Pub, which also offers pizzas, sandwiches, and Smoothies as lunch and dinner options. Others browse through the Rice Campus Store. Located within the group of buildings, students find an array of offices, programs, and resource centers, including the Career Services Center, the Community Involvement Center, the Office of Academic Advising, the Rice Program Council, and the assorted student, international student, and graduate student associations. The campus radio station KTRU has offices there, in addition to the Thresher (the campus newspaper) and the Campanile (the yearbook). The Rice Memorial Chapel anchors one end of the two-center complex, which also houses the Association of Rice Alumni. On any given evening, the larger rooms may be busy with meetings or catered dinners, and members of the Rice community regularly tap the facilities for special events, from parties and concerts to weddings.

Career Services Center

The Career Services Center is open to everyone in the university community. Undergraduates unable to decide on a major, career, or graduate program, or those who lack direction in the path they have chosen, may benefit from career counseling; testing is also available for those interested in a more analytical approach. Peer counselors assist both undergraduate and graduate students with résumé or vita writing, interviewing, and job search strategies.

The career sponsors workshops, career panels, and various career fairs each year.

Sports

Intercollegiate Athletics

Rice is a member of the Western Athletic Conference and a Division I-A member of the National Collegiate Athletic Association. The university fields teams for men in football, basketball, baseball, tennis, golf, cross-country, and indoor and outdoor track. Women team sports include basketball, volleyball, soccer, swimming, tennis, cross-
country, and indoor and outdoor track. Home football games are played in the beautiful 70,000-seat Rice Stadium. The rest of the university’s extensive athletic facilities include Autry Court and Fox Gymnasium for basketball and volleyball, Reckling Park for baseball, the Jake Hess Tennis Stadium, the Rice Track/Soccer Stadium (Wendel D. Ley Track), and the John L. Cox Fitness Center. Encouraging its student-athletes to pursue high goals, Rice prides itself on its dual goal of excellence in both academics and athletics; the rigors of one may not serve as an excuse for less than high-quality performance in the other.

Intramural Sports

The Recreation Center in Student Affairs offers a supervised program of intramural sports for all students, faculty, and staff. Anyone may participate in individual, dual, or team sports; swim meets; and track and field events. Interested students, faculty, and staff may also form teams to compete in the wide variety of tournaments available. While all students may take part in the university intramural tournaments, undergraduates may also represent their respective colleges in the college team sports tournaments that follow intramural play. In the past few years, Rice has seen more than 6,000 entries in 53 tournaments. Students are reminded, though, that they participate at their own risk.

Sports Clubs

In addition to the intramural program, the Department of Student Activities administers a sports club program. A sports club is a special-interest group organized by students who want to play, and promote interest in, a particular sport. Club organization depends on student interest. In recent years, clubs have included badminton, cricket, cycling, dance, fencing, field hockey, frisbee, lacrosse, martial arts, rowing, rugby, sailing, shooting, soccer, softball, and volleyball. Students join these groups to increase both individual and team skills through a dual program of instruction and competition. They support the clubs with individual contributions, membership dues, solicitation of university funds, and various fund-raising activities. Again, students participate in the different sports at their own risk.

Student Automobiles

All students must register their vehicles with the Traffic Division of the Rice University Police Department. Students must park in assigned areas and observe university regulations. Illegally parked or unregistered vehicles are subject to towing and/or fines by the university. Copies of University Traffic and Parking Regulations, a publication giving a detailed account of student privileges and responsibilities, are available from the Traffic Division or online at http://rupd.rice.edu/parking. Students must inform all guests of parking regulations; vehicles belonging to visitors who repeatedly violate these rules also may be towed or booted.
Introduction

The undergraduate experience at Rice is one of intense personal interactions. The close sense of community created by individual placement in residential colleges is extended to warm intellectual and personal relationships with members of the Rice faculty. “Behind the hedges,” the beautifully designed, spacious campus is small enough to encourage a sense of belonging even as students engage with the lively cultural currents of one of the country’s largest cities.

The academic philosophy at Rice is to offer students beginning their college studies both a grounding in the broad fields of general knowledge and the chance to concentrate on very specific academic and research interests. By completing the required distribution courses, all students gain an understanding of the literature, arts, and philosophy essential to any civilization, a broad historical introduction to thought about human society, and a basic familiarity with the scientific principles underlying physics, chemistry, and mathematics. Building on this firm foundation, students then concentrate on studies in their major areas of interest.

Rice University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (SACS), the recognized regional accrediting body in the eleven U.S. Southern states.

Rice grants the two undergraduate degrees, the Bachelor of Arts (B.A.) and the Bachelor of Science (B.S.), in a range of majors. The majority of undergraduates earn the B.A. degree, though students may elect to pursue the B.S. degree, offered at Rice in some science fields and in various fields of engineering accredited by the Accreditation Board for Engineering and Technology (ABET). Undergraduates may major in any of the numerous fields provided by the various schools of architecture, humanities, music, social sciences, science, and engineering. To accommodate the full range of individual student interests, specific interdepartmental majors are also available, as are selectively approved area majors. In certain departments, students also have the option of overlapping the upper-level course work of their undergraduate degree with those basic requirements necessary to earn a higher degree in the field, considerably reducing the time required to complete their graduate studies. The Shepherd School of Music offers a joint degree in music (B.Mus./M.Mus) that may be completed with a fifth year of study.

Through Rice’s Education Certification Program, students interested in teaching in secondary schools may complete a program of teacher training, leading to certification in the state of Texas, together with the B.A. degree. Students interested in satisfying the requirements for admission to medical, dental, or law school should consult with the Office of Academic Advising for completing these programs in conjunction with the various majors.

Graduation Requirements

Degree Requirements for All Bachelor’s Degrees

Students are responsible for making certain that their plan of study meets all degree and major requirements. To graduate from Rice University, all students must:

- Be registered at Rice full time for at least four full fall and/or spring semesters
- Complete the requirements of at least one major degree program
- Complete at least 120 semester hours (some degree programs require more than 120 hours)
- Complete at least 60 semester hours at Rice University

- Complete at least 48 hours of all degree work in upper-level courses (at the 300 level or higher)
- Complete more than half of the upper-level courses in degree work at Rice
- Complete more than half of the upper-level courses in their major work at Rice (certain departments may specify a higher proportion)
- Complete all Rice courses satisfying degree requirements with a cumulative grade point average of at least 1.67 or higher
- Complete all Rice courses that satisfy (designated by the department) major requirements with a cumulative grade point average of at least 2.00 or higher
- Satisfy the English composition requirement (see below)
- Satisfy the Lifetime Physical Activity Program (LPAP) requirement (see below)
- Complete courses to satisfy the Distribution Requirements (see below)
- Otherwise be a student in good academic and disciplinary standing

To satisfy the English composition requirement, students must pass an English composition examination given during Orientation Week. Those receiving grades of “not satisfactory” on the exam must complete ENGL 103 Basic Composition, a one semester course carrying degree credit.

To satisfy the LPAP requirement, students must complete 2 courses in LPAP. Although 2 courses are required, they do not carry degree credit and do not count toward the total semester hours at graduation. Students with disabilities may make special arrangements to satisfy this requirement.

Distribution Requirements

Each student is required to complete at least 12 semester hours of designated distribution courses in each of Groups I, II, and III. The 12 hours in each group must include courses in at least two departments in that group. (Divisional or interdisciplinary designations, e.g. HUMA, NSCI, etc., count as departments for this purpose.) Interdisciplinary courses approved for distribution credit may count toward the 12 semester hours in any relevant group; however, students may not count any one such course toward the 12 required hours in more than one group, and may count no more than one such course toward the 12 required hours in any one group.

Students must complete the distribution requirements in each group by taking courses that are designated as a distribution course at the time of course registration, as published in that semester’s Schedule of Courses Offered.

The distribution system presupposes that every Rice student should receive a broad education along with training in an academic specialty. This goal is achieved by courses that are broad based, accessible to nonmajors, and representative of the knowledge, intellectual skills, and habits of thought that are most characteristic of a discipline or of inquiry across disciplines.

**Group I.** These courses have one or more of the following goals. They develop students’ critical and aesthetic understanding of texts and the arts; they lead students to the analytical examination of ideas and values; they introduce students to the variety of approaches and methods with which different disciplines approach intellectual problems; and they engage students with works of culture that have intellectual importance by virtue of the ideas they express, their historical influence, their mode of expression, or their critical engagement with established cultural assumptions and traditions.

**Group II.** Three types of courses fulfill this requirement. The first are introductory courses which address the problems, methodologies, and substance of different disciplines in the social sciences. The second are departmental courses which draw upon at least two or more disciplines in the social sciences or which cover topics of central importance to a social science discipline. The third are interdisciplinary courses taught by faculty from two or more disciplines.
Group III. These courses provide explicit exposure to the scientific method or to theorems, develop analytical thinking skills and emphasize quantitative analysis, and expose students to subject matter in the various disciplines of science and engineering.

Special Note for Music Majors. A total of 24 semester hours of designated distribution courses are required of music majors. A minimum of 6 hours (2 courses) must come from each of Groups I, II, and III, with the remaining 6 hours chosen from designated distribution courses of the student’s choice.

Bachelor of Arts

The specific requirements of individual majors leading to the Bachelor of Arts degree vary widely. No department may specify more than 80 semester hours (required courses, prerequisites, and related laboratories included) for the Bachelor of Arts. To qualify for the Bachelor of Arts:

- All students must complete at least 120 hours of course work.
- Students in the humanities and social sciences must complete between 18 and 80 hours in course work within the major (including required courses, prerequisites, and related laboratories).
- Students in the sciences and engineering must complete between 24 and 80 hours in course work within the major (including required courses, prerequisites, and related laboratories).
- Students in all fields except architecture must complete at least 60 hours in course work outside the major.
- Students in architecture must complete at least 38 hours in course work outside the major.

Bachelor of Science in the School of Natural Sciences

The Bachelor of Science degree is offered in astrophysics, chemistry, chemical physics, geology, and physics. The specific degree requirements vary from field to field and differ from those of the Bachelor of Arts in that there are greater technical requirements. No department may specify more than 80 semester hours (required courses, prerequisites, and related laboratories included) for the Bachelor of Science. To earn a B.S. degree in one of these fields, students must complete at least 60 hours in course work outside the major.

Bachelor of Science Degrees in Engineering: Bachelor of Science in Chemical Engineering (B.S.Ch.E.), Civil Engineering (B.S.C.E.), Computer Science (B.S.C.S.), Electrical and Computer Engineering (B.S.E.E.), Materials Science (B.S.M.S.), Mechanical Engineering (B.S.M.E.), and Bioengineering (B.S.B.)

The Bachelor of Science degree in a given engineering field is distinct from the B.A. degree in that it must meet greater technical requirements. In establishing a departmental major for the degree of Bachelor of Science in civil engineering, electrical and computer engineering, materials science, and mechanical engineering, the department may specify no more than 92 semester hours (required courses, prerequisites, and related laboratories included). In establishing the departmental major for the B.S. in chemical engineering, the department may specify no more than 100 semester hours (required courses, prerequisites, and related laboratories included). The bioengineering department specifies 94 semester hours for the B.S. degree (required courses, prerequisites, and related laboratories included). To earn a B.S. degree, students must meet the following minimum semester hour requirements in course work:

- All majors except chemical engineering and computer science—a total of at least 134 hours
- Chemical engineering majors—up to 137 hours, depending on ABET requirements
- Computer science majors—a total of at least 128 hours

Other Bachelor’s Degrees

The professional Bachelor of Architecture (B. Arch.) degree requires a fifth year of study and a one-year preceptorship. The Bachelor of Music (B.Mus.) degree requires advanced courses in aural skills in addition to the core music curriculum.

Undergraduate Majors

Students must declare a major prior to preregistration for the junior year, if not sooner, according to the deadline in the Academic Calendar (see Declaring Departmental Majors on Page 30). Within some departmental majors, students have the choice of a particular area of concentration. Students also may opt for more than one major; such majors do not necessarily need to be in related fields. More detailed information on the departmental majors briefly described below may be found in the Undergraduate Degree chart (see pages 25–27) in the section “Departments and Interdisciplinary Programs” and by contacting the department chairs or faculty advisers.

Departmental Majors

School of Architecture. Students interested in architecture may choose between the four-year B.A. program or the six-year Bachelor of Architecture (B. Arch.) degree. Students completing the four-year B.A. who have been admitted to the B. Arch. program during their senior year spend a fifth year in a working preceptorship with an architectural firm, returning to Rice to complete a final year of architectural study for the degree.

George R. Brown School of Engineering. Rice offers, through eight departments, majors in bioengineering, chemical engineering, civil engineering, computational and applied mathematics, computer science, electrical and computer engineering, mechanical engineering, materials science and engineering, and statistics. Students may elect a double major by combining environmental science with another science or engineering field. These programs lead to either the B.A. or the B.S. degree and may qualify students for further graduate study.

School of Humanities. Students may declare majors in art and art history, classics, English, French studies, German and Slavic studies (includes Russian), Hispanic studies, kinesiology, history, linguistics, philosophy, and religious studies. Interdisciplinary majors are available in ancient Mediterranean civilizations, Asian studies, medieval studies, and the study of women and gender, while an interdepartmental major in policy studies combines courses from the School of Humanities and the School of Social Sciences.

Shepherd School of Music. Music students may opt for either a B.A. or a Bachelor of Music (B.Mus.) degree in performance, composition, music history, and music theory. Students who pass a special qualifying examination may elect an honors program that leads to the simultaneous awarding of the B.Mus. and Master of Music (M.Mus.) degrees after five years of study.
Wiess School of Natural Sciences. All natural sciences departments, including biochemistry and cell biology, chemistry, ecology and evolutionary biology, earth science, mathematics, and physics and astronomy offer programs leading to the B.A. degree. B.S. degrees are offered in some departments. Majors include astronomy, biochemistry, biology, biophysics, chemical physics, chemistry, geology, geophysics, mathematics, and physics. Students may also elect double majors combining one of the programs in natural sciences with another science, a humanities discipline, or an engineering field.

School of Social Sciences. Rice offers majors in anthropology, economics, mathematical economic analysis, political science, psychology, and sociology. Both the interdepartmental policy studies major and the cognitive studies major include sciences, engineering, and humanities courses, while the managerial studies major incorporates course work in the Schools of Engineering and Management.

Interdepartmental Majors

Interdepartmental majors combine courses taught by faculty from more than one department; they are listed separately in the Undergraduate Degree Chart (pages 25–27).

Other Academic Undergraduate Options

Rice/Baylor College of Medicine Medical Scholars Program

The Medical Scholars Program is for talented and motivated students who are scientifically competent, socially conscious, and capable of applying insight from the liberal arts and other disciplines to the study of modern medical science. Up to 15 graduating high school seniors are admitted to Rice and Baylor College of Medicine concurrently: The traditional four years at Rice are followed by four years at Baylor. Applications for the program are sent to those who indicate their interest on their Rice applications. However, students must have applied under the Early Decision or Interim Decision plans (see pages 45–46). Interviews are scheduled in late March, and decisions are made in April. Early Decision applicants must have Rice as their first-choice school, regardless of the Baylor decision to be made later in the spring. Applicants not admitted to the Medical Scholars Program are still eligible for admission to Rice and may still apply to Baylor upon graduation from Rice.

W. M. Keck Center for Computational Biology Research Training Program

Undergraduates may take advantage of research training opportunities in computational biology offered by this joint project of Rice, Baylor College of Medicine, and the University of Houston. Students in biophysics, cell biology, evolutionary biology, computer science, statistics, mathematics, physics, chemistry, computational and applied mathematics, and engineering may apply for a summer program that provides hands-on research under faculty mentorship in lab settings, seminars and workshops, and access to the advanced computational and analytical resources offered by the center.

Leadership Rice

Leadership Rice develops the leadership capacities of undergraduates from all disciplines. The program links theory to practice and analysis to action with experiential opportunities and classes. It encourages students to look beyond how to get a good education and good grades and to begin to consider how they can use their great education to make a positive contribution to the world.

The program is especially recommended for second semester sophomores, who are invited to begin with UNIV 309 and then to participate in all aspects of the program, but it is open to all students—including freshmen.

The core component of Leadership Rice is the Summer Mentorship Experience. Students accepted into the program work under the tutelage of experienced mentors for eight weeks during the summer and are given a $3,000 stipend. Mentorships are in the private, nonprofit, and public sectors in U.S. and abroad. Students also are invited to take on leadership roles in the administration of the program. Recent mentorships as well as more information on Leadership Rice are posted on the web at www.rice.edu/leadership.

Currently, Leadership Rice offers 3 courses for academic credit. UNIV 309 Creating and Managing Change: Principles of Leadership, introduces students to leadership ideas in the context of diverse disciplines. This course includes a team project along with discussion on what makes effective teams, as well as work on writing clearly and persuasively. This course is required in order to apply to Leadership Rice. UNIV 310, Creating and Managing Change, is recommended following the mentorship.

Leadership Rice sponsors the Rice-on-Board program, which places students on nonprofit community boards as participant observers for a year. It also oversees the Envision Program and the Janus Award. Envision funds, offered three times each year, provide seed money to students for first-time projects of benefit to the community, either on campus or beyond. The Janus Award offers one undergraduate the opportunity to research an environmental or science-related issue from multiple perspectives.

Leadership Rice believes that every Rice student is capable of creating positive change. The program aims to help students develop the confidence and commitment as well as the skills to achieve this end.

Students are urged to look at http://ruf.rice.edu/~leading/, a university website to help students learn more about the program.

Premedical, Prelaw, and Prebusiness Programs

In addition to the preprofessional and professional programs offered by Rice in architecture, business management, engineering, and music, students may pursue programs that satisfy the admission requirements for graduate schools in business, dentistry, diplomacy and foreign affairs, health science, law, and medicine. Interested students may contact various advisers with offices in the Ley Student Center, including health professions advisers for premedical or predental studies and other professional programs in the health sciences, a prelaw adviser for prelegal studies, and a prebusiness adviser for business, finance, and accounting.

Junior-Year Admission. Students who plan to enter medical school or any other professional or graduate school at the end of their junior year at Rice can arrange to receive a Rice four-year bachelor’s degree by submitting to the Committee on Examinations and Standing a degree plan that fulfills all normal university and departmental requirements for the bachelor’s degree. Students must submit a degree plan before they begin graduate or professional training. The Committee on Examinations and Standing then reviews the degree plan submitted by each student and gives final approval.

Students who want to take advantage of this junior-year admission may apply no more than 30 to 40 semester hours (10 courses) in transfer credit (courses must be acceptable to the student’s major department and the registrar).

Premedical and Predental Programs. The entrance requirements for U.S. medical and dental schools include one year each of general chemistry, organic chemistry,
physics, mathematics, biology, and English, plus laboratories required by the science courses. Because medical and dental schools seldom favor any one area of study, students may choose their majors according to their interests and capabilities. Their degree plans should provide them with both a broad cultural background and the necessary skills for an alternative career. Science or engineering majors will automatically satisfy most of the entrance requirements for medical or dental school, but students majoring in the humanities will need to make some adjustments in their study plans. Premedical and predental students should discuss their degree plans with the health professions advisers.

Prelaw Program. All degree programs offered at Rice satisfy the academic requirements for admission to law school. While many prelaw students major in social sciences, no law school specifies particular courses or curricula as prerequisites to admission, and students majoring in humanities, sciences, engineering, or other areas are regularly admitted to law schools. Most schools require only a baccalaureate degree and the completion of the Law School Admission Test. When selecting a major, students should keep in mind the provision in The Official Guide to U.S. Law Schools (published by the Law School Admission Council/Law School Admission Services in cooperation with the American Bar Association and the Association of American Law Schools) that prelegal education should develop oral and written comprehension and expression, as well as creative thinking and critical understanding of human values. While no particular discipline is paramount, the prelaw adviser usually recommends that students take expository writing courses and beginning accounting and economics courses. Interested students should contact the prelaw adviser. The guide to law schools cited above, reference books, and the catalogs of many leading law schools are available in the prelaw office in the Office of Academic Advising, Ley Student Center.

Prebusiness Program. Business schools consider the following when admitting students to their Master of Business Administration (M.B.A.) programs:

- Scholastic aptitude, as evidenced by undergraduate grades and performance on the Graduate Management Admission Test (GMAT)
- Extracurricular activities
- Work experience
- Effective oral and written communication

While no specific undergraduate major is preferred, students should select a major (or majors) where their academic performance is likely to be the strongest. The prebusiness adviser recommends that students take ECON 211/212 Principles of Economics I and II and ACCO 305 Introduction to Accounting as courses helpful for graduating seniors seeking employment in the private or public sector (most schools prefer students with relevant full-time work experience). Calculus has become increasingly important to business schools as well.

Interested students should consult the prebusiness adviser early in their undergraduate years. Because business schools differ in their objectives, curricula, teaching methods, job placement possibilities, and admission standards, students should be familiar with the programs of different schools before applying. The prebusiness adviser can also suggest the kinds of work experience that schools typically prefer.

Reserve Officers’ Training Corps (ROTC) Programs

Rice hosts a Naval ROTC program, and students may participate in Army ROTC through a cross-enrollment program with the University of Houston. These programs train select college students who, upon graduation, receive reserve commissions as officers in the United States Army, Navy, or Marine Corps.

Most students enroll in the ROTC programs at Rice at the beginning of the fall term.

While courses in naval science and military science are open to any student, they count as free electives and cannot satisfy a student’s distribution requirements or departmental major requirements. The provost determines the credit assigned to each course in consultation with the Committee on the Undergraduate Curriculum. Performance in ROTC courses, however, weighs in the determination of probation, suspension, course load, and grade point average. Students suspended by the university for academic failure or other reasons are immediately discharged from the ROTC programs, as are students producing unsatisfactory course work and those lacking sufficient officer-like qualities, regardless of their academic performance.

For additional information on the ROTC programs and available scholarships, see both military science and naval science in the Departments and Interdisciplinary Programs and Courses of Instruction sections.

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### UNDERGRADUATE DEGREE CHART

<table>
<thead>
<tr>
<th>School Department</th>
<th>Undergraduate Degrees Offered</th>
<th>Additional Options or Areas of Concentration (within majors)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SCHOOL OF ARCHITECTURE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B.A., B.Arch.</td>
<td>B.A.</td>
<td>B.A. majors in architecture and in architectural studies</td>
</tr>
<tr>
<td><strong>GEORGE R. BROWN SCHOOL OF ENGINEERING</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bioengineering</td>
<td>B.S.B.</td>
<td>Areas of concentration in cellular and molecular engineering, biomedical instrumentation and imaging, and biomaterials and biomechanics</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>B.A., B.S.Ch.E.</td>
<td>Focus areas in bioengineering, environmental science and engineering, materials science and engineering, and computational engineering</td>
</tr>
<tr>
<td>Civil and Environmental Engineering</td>
<td>B.A., B.S.C.E.</td>
<td>Civil engineering: options in structural engineering, environmental engineering, and engineering management</td>
</tr>
<tr>
<td>Environmental engineering</td>
<td>B.A.</td>
<td>Environmental engineering: B.A. as double major with any other Rice major; see also civil engineering and chemical engineering for B.S. options</td>
</tr>
<tr>
<td>Computational and Applied Mathematics</td>
<td>B.A.</td>
<td>Numerical analysis, operations research, optimization, differential equations, and scientific computation</td>
</tr>
<tr>
<td>Computer Science</td>
<td>B.A., B.S.C.S.</td>
<td>Areas of concentration in architecture, artificial intelligence, computational science, foundations, human-computer interaction, and software systems</td>
</tr>
<tr>
<td>Electrical and Computer Engineering</td>
<td>B.A., B.S.E.E.</td>
<td>Areas of concentration in bioengineering; computer engineering; systems: control, communications, and signal processing; electronic circuits and devices; and quantum electronics and photonics</td>
</tr>
<tr>
<td>Mechanical Engineering and Materials Science</td>
<td>B.A., B.S.M.E., B.S.M.S.</td>
<td>Mechanical engineering: areas of concentration in biomechanics, fluid mechanics and thermal science, solid mechanics and materials, and system dynamics and control</td>
</tr>
<tr>
<td>Statistics</td>
<td>B.A.</td>
<td>Theoretical and applied training orientations; engineering, scientific, and business applications of probability and statistics; joint work in related departments</td>
</tr>
</tbody>
</table>

### SCHOOL OF HUMANITIES

<p>| Art and Art History | B.A., B.F.A. | Tracks in history of art and studio art; special fifth-year courses for B.F.A. candidates |</p>
<table>
<thead>
<tr>
<th>School Department</th>
<th>Undergraduate Degrees Offered</th>
<th>Additional Options or Areas of Concentration (within majors)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>No undergraduate degree offered</td>
<td>Leads to secondary teaching certificate in conjunction with B.A. in major field. See Education Certification.</td>
</tr>
<tr>
<td>English</td>
<td>B.A.</td>
<td></td>
</tr>
<tr>
<td>French Studies</td>
<td>B.A.</td>
<td></td>
</tr>
<tr>
<td>German and Slavic Studies</td>
<td>B.A.</td>
<td>German and German cultural studies, and Russian/Slavic studies</td>
</tr>
<tr>
<td>Hispanic and Classical Studies</td>
<td>B.A.</td>
<td>Spanish language and literature, Latin American studies, classics, Greek, Latin, and Portuguese</td>
</tr>
<tr>
<td>History</td>
<td>B.A.</td>
<td></td>
</tr>
<tr>
<td>Kinesiology</td>
<td>B.A.</td>
<td>Areas of concentration in exercise science, sports medicine, and sports management</td>
</tr>
<tr>
<td>Linguistics</td>
<td>B.A.</td>
<td>Areas of concentration in language, cognitive science, second language acquisition, and language, culture, and society</td>
</tr>
<tr>
<td>Philosophy</td>
<td>B.A.</td>
<td></td>
</tr>
<tr>
<td>Religious Studies</td>
<td>B.A.</td>
<td>Areas of concentration in religious traditions and/or methodology</td>
</tr>
</tbody>
</table>

**JESSE H. JONES GRADUATE SCHOOL OF MANAGEMENT**

<table>
<thead>
<tr>
<th>School Department</th>
<th>Undergraduate Degrees Offered</th>
<th>Additional Options or Areas of Concentration (within majors)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHEPHERD SCHOOL OF MUSIC</td>
<td>B.A., B.Mus.</td>
<td>B.A. in music; B.Mus. in composition, music history, music theory, and performance; joint B.Mus./M.Mus. with fifth year of study</td>
</tr>
<tr>
<td>WIESS SCHOOL OF NATURAL SCIENCES</td>
<td>B.A.</td>
<td>Part of an integrated biosciences curriculum</td>
</tr>
<tr>
<td>Chemistry</td>
<td>B.A., B.S.</td>
<td>Chemical physics major offered jointly with physics resulting in a B.S. degree</td>
</tr>
<tr>
<td>Ecology and Evolutionary Biology</td>
<td>B.A.</td>
<td>Part of an integrated biosciences curriculum</td>
</tr>
<tr>
<td>Mathematics</td>
<td>B.A.</td>
<td>300-level courses oriented toward problem solving and applications and 400-level and above oriented toward theory and proofs; preparation for graduate studies or high school teaching or other areas; ample opportunity for double-majoring, especially with CAAM, COMP, ELEC, PHYS, or STAT; abundance of courses in analysis, topology, geometry, algebra, etc.</td>
</tr>
<tr>
<td>Physics and Astronomy</td>
<td>B.A., B.S.</td>
<td>Majors in physics with specific options in applied physics, biophysics, computational physics, astrophysics, and astronomy; interdepartmental major in chemical physics</td>
</tr>
</tbody>
</table>

**SCHOOL OF SOCIAL SCIENCES**

<table>
<thead>
<tr>
<th>School Department</th>
<th>Undergraduate Degrees Offered</th>
<th>Additional Options or Areas of Concentration (within majors)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology</td>
<td>B.A.</td>
<td>Areas of concentration in archaeology and social/cultural anthropology</td>
</tr>
<tr>
<td>Economics</td>
<td>B.A.</td>
<td>Majors in economics and in mathematical economic analysis</td>
</tr>
<tr>
<td>Political Science</td>
<td>B.A.</td>
<td></td>
</tr>
<tr>
<td>Psychology</td>
<td>B.A.</td>
<td></td>
</tr>
<tr>
<td>Sociology</td>
<td>B.A.</td>
<td></td>
</tr>
</tbody>
</table>

**INTERDEPARTMENTAL MAJORS**

<table>
<thead>
<tr>
<th>School Department</th>
<th>Undergraduate Degrees Offered</th>
<th>Additional Options or Areas of Concentration (within majors)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area Majors</td>
<td>B.A.</td>
<td>Requires approval of two or more departments, the Office of Academic Advising, and the Committee on Undergraduate Curriculum (see page 30)</td>
</tr>
<tr>
<td>Ancient Mediterranean Civilizations</td>
<td>B.A.</td>
<td>Anthropology, classical studies, Greek, Latin, history, history of art, linguistics, philosophy, and religious studies</td>
</tr>
<tr>
<td>Asian Studies</td>
<td>B.A.</td>
<td>Anthropology, art, history of art, history, humanities, linguistics, Chinese, Japanese, Korean, Sanskrit, political science, and religious studies</td>
</tr>
<tr>
<td>Cognitive Sciences</td>
<td>B.A.</td>
<td>Anthropology, cognitive sciences, computer science, electrical engineering, linguistics, philosophy, psychology, sociology, and statistics</td>
</tr>
<tr>
<td>Education Certification</td>
<td>No undergraduate degree offered</td>
<td>Leads to secondary teaching certificate in conjunction with B.A. in major field</td>
</tr>
<tr>
<td>Managerial Studies</td>
<td>B.A.</td>
<td>Accounting, computational and applied mathematics, economics, political science, psychology, and statistics</td>
</tr>
<tr>
<td>Medieval Studies</td>
<td>B.A.</td>
<td>History of art, classics, English, French, German, history, humanities, linguistics, Spanish, music, philosophy, political science, and religious studies</td>
</tr>
<tr>
<td>Policy Studies</td>
<td>B.A.</td>
<td>Environmental policy, government management, healthcare policy, international affairs, law and justice, business policy, and political management</td>
</tr>
<tr>
<td>Study of Women and Gender</td>
<td>B.A.</td>
<td>Anthropology, classics, English, French studies, German, history, humanities, linguistics, music, philosophy, religious studies, and sociology</td>
</tr>
</tbody>
</table>

**Teacher Certification**

Students in the teacher education program earn Texas state teacher certification at the secondary level. Subjects include art, English, French, German, health science, history, Latin, life science, mathematics, physical education, physical science, Russian, science, social studies, and Spanish. For more information on teacher certification programs at the undergraduate and graduate levels, see Education Certification in the Departments and Interdisciplinary Programs and Courses of Instruction sections.

**Study Abroad and Exchange Programs**

Rice-affiliated and Rice-sponsored programs provide students with opportunities to study throughout the world. Direct exchange programs allow Rice students to change places with university students from another country. Rice is affiliated with nearly 400 program sites worldwide, representing a diversity of program formats. Some offer direct enrollment in foreign universities, while others specialize in intensive language instruction, field research, or internships.

Each year more than 200 undergraduates from across the disciplines study away from campus and then apply the transfer credit earned toward their degrees. The study abroad advisers, in concert with the faculty advisers in each department, assist students in identifying the best programs for their individual interests and academic needs. In order to assure proper enrollment and transfer of credits and financial aid, students planning to study abroad must make their arrangements through the Department of International Programs. This includes arranging prior approval for transfer credit through the relevant academic department(s) and the registrar.
Detailed information on affiliated programs, including application forms, is available from the Department of International Programs (first floor, Ley Student Center).

### Academic Regulations

All undergraduate students are subject to the academic regulations of the university. Students are responsible for making certain they meet all departmental and university requirements and academic deadlines. The Committee on Examinations and Standing administers the rules described below. Under unusual or mitigating circumstances, students may submit a written petition requesting special consideration to the committee. Students should address all correspondence to the committee in care of the vice president for student affairs.

### Registration

Currently enrolled students preregister in April for the fall semester and in November for the spring semester. They complete registration at the beginning of each semester. Entering students complete their registration during Orientation Week before classes begin in August. The registration form must have the academic adviser’s approval. To be properly registered, new students must complete, sign, and return a matriculation card. New students may not register or attend classes until they return a properly completed health data form by the required date. Each year, the Office of the Registrar publishes the specific deadlines for the semesters of that year.

Unless students elect a special payment plan, they must pay all tuition and fees for the fall semester by the end of the second week in August and for the spring semester by the end of the first week in January. Any student in arrears and therefore not registered as of the last day to drop classes will not be allowed to live on campus the next semester, nor will such students be allowed to receive credit for the nonregistered semester. Appeals to this policy must be addressed to the vice president for enrollment.

Students who do not register and who fail to request from the registrar an extension of the deadline in the Academic Calendar (pages vi–x) are considered withdrawn from the university. Under unusual or mitigating circumstances, students may submit a written petition requesting special consideration to the committee. Students should address all correspondence to the committee in care of the vice president for student affairs.

### Drop/Add

During the first two weeks of the semester, students may add courses to their registration without penalty with appropriate adviser’s approval. During the first four weeks, students may drop courses without penalty with appropriate adviser’s approval. After the second week of the semester, the following conditions apply for adds and drops:

**Undergraduate students in their first semester at Rice:**
- Must obtain instructor’s permission and the adviser’s approval to add a course between the second and the end of the fourth week of classes
- May not add courses after the fourth week of classes
- May drop courses up to the last day of classes

**All other students:**
- May drop courses up to the last day of classes
- May not add courses after the fourth week of classes
- May not drop courses after the end of the 10th week of classes, except with the approval of the Committee on Examinations and Standing (a $35 fee is assessed for courses dropped after the 10th week by non-first-semester students)
- Students may not drop courses where the Honor Council has ruled a loss of credit.

### Course Load

Students at Rice normally enroll for 15 to 17 semester hours each semester. For most students, this allows them to complete the requirements for graduation in 8 semesters. Students must secure permission in writing from the vice president for student affairs before registering for courses, if they want to:
- Register for more than 20 credits
- Register or drop below 12 credits
- Register concurrently at another university

No student may receive credit for more than 20 credits in a semester, including courses taken elsewhere, without this prior written approval. Students should also be aware that the registrar’s office must report a student’s part-time status to various groups, such as loan agencies, scholarship foundations, insurance companies, etc. It is in the student’s best interest to determine if he or she will be affected in any way by part-time status.

Students may not register for more than 1 course at the same hour unless they receive permission from the instructors involved.

### Repeated Courses

Students may not repeat courses for which they have received either advanced placement or transfer credit. Credit will not be counted twice for students who repeat these types of advanced credit.

Some Rice University courses may be repeated for credit. They are specifically noted in the General Announcements and on the registrar’s website.

A matriculated student may repeat all other courses for credit; however, both grades
will be factored into the term and cumulative grade point average. Credit for these courses will only be counted once. (E.g., you took HIST 117 and received a grade of B. You repeated this course and received a grade of A. Both grades—the A and B—are included in your GPAs; however, you only receive three credits toward your degree. Both courses will appear on your transcript—one course marked “R.”)

Declaring Departmental Majors

In order to receive a bachelor’s degree, a student must complete the requirements for at least one major. Students declare their major using a form provided by the registrar. The department chair or designee must sign the form acknowledging the declaration. It is expected that the department will counsel the student about the requirements that must be met and the likelihood the student will be able to meet them. If the department believes a student is not well prepared for success in its major, it may express its reservations on the form. No department or program may, however, refuse to admit an undergraduate as a major, with the exception of the School of Architecture and the Shepherd School of Music or in the case of limitations of resources. In such cases, departments must publish criteria they will use to limit the number of majors together with their major requirements.

Students must declare a major prior to preregistration for the junior year and will not be permitted to register for the fall semester of the junior year without having declared a major. The deadline for notifying the Office of the Registrar of the major declaration is listed in the Academic Calendar for each year. Students are free to declare a major at any time prior to this deadline and are always free to change the major declaration by completing the appropriate form with the registrar’s office. However, such a change may entail one or more additional semesters at the university. Area majors are an exception to this rule and must be declared by the fourth semester prior to graduation (see Area Majors below).

Once a student declares a major, the department or title of the major is noted on the student’s transcript, and a faculty adviser in the major department is assigned. Students and their advisers should regularly review progress towards their degrees. Introductory courses taken before formal designation of a major may be counted in fulfilling the major requirements.

For information on the specific requirements for any departmental major, students should consult the departmental listings and seek the advice of a faculty member in the department. It is the responsibility of the student to meet regularly with their advisers to review progress toward their degrees.

Area Majors

Should the traditional departmental majors or programs not meet their exact needs, students may develop an area major closer to their particular interests and career goals. Area majors differ from double majors in that the latter must conform to the requirements of both departments while the former is a single major: It may combine courses from two or more departments, but it maintains its own specific major requirements. Area majors are limited by the available academic resources and must be distinct from other majors offered at Rice. Students who elect to declare an area major may not use it to form a double major, and they must still meet all the other university graduation requirements.

Students are usually the ones to initiate an area major, working it out in conjunction with advisers from the Office of Academic Advising and with faculty advisers from each of the departments involved. After designing a comprehensive and substantial course of study and deciding on an appropriate title, all parties sign off on the plan. The chairs of the involved departments and the Committee on the Undergraduate Curriculum determine final approval. At that point, the Office of Academic Advising officially certifies the approved plan to the registrar and goes on to oversee the major on behalf of the faculty advisors. Any change in the proposed requirements requires the approval of both the faculty advisers and the Committee on the Undergraduate Curriculum.

Interested students who are unsure which departments to approach should check with the Office of Academic Advising during their sophomore year. Students may not propose an area major if they are within three semesters of graduation unless the Committee on Examinations and Standing rules that exceptional circumstances warrant this action. Under no circumstances may students declare an area major in their final semester before graduation.

Second Four-Year Bachelor’s Degree

Currently enrolled undergraduates, Rice graduates with a bachelor’s degree, and graduates from other universities with a bachelor’s degree have the option of earning a second four-year bachelor’s degree at Rice in a different discipline. This degree must be a different bachelor’s degree from the one already held; for example, the holder of a B.A. degree may pursue course work leading to the B.S. or B.Mus. degree. Rice students should note that they can apply courses they completed at Rice as Class III students to the second degree only with the approval of the major department for that degree. (Class III students are students who already have college degrees and are taking courses for credit outside of a Rice degree program.)

Students Already Enrolled at Rice. To earn a second four-year bachelor’s degree, currently enrolled undergraduates who have not yet completed their first bachelor’s degree must:

• Be accepted for the second major by the major department
• Fulfill all requirements for the second degree
• Complete at least 30 additional semester hours at Rice beyond the hours required for their first degree (these hours are applied to the second degree)

Students seeking admission to this program should apply to the registrar. The application should include a written statement identifying both proposed majors and specifying an approved course program for each. It should also contain a statement from the chair or undergraduate adviser of each department involved, indicating that the proposed course program satisfies all major degree requirements.

Students with a Bachelor’s Degree from Rice. Rice graduates who wish to earn a different four-year bachelor’s degree must:

• Be accepted for the major by the major department
• Fulfill all requirements for the second degree
• Complete at least 30 additional semester hours at Rice beyond their first bachelor’s degree (these hours are applied to the second degree)
• Attend Rice full time for at least two semesters during the fall and/or spring terms beyond their first bachelor’s degree

The entire undergraduate record for these students continues cumulatively. Those seeking admission to this program should apply to the registrar. The application should include a written statement specifying the proposed major and course program for the second degree, a supporting letter from the chair of the major department, and an explanation of the student’s reasons for seeking a second degree.

Students with a Bachelor’s Degree from Another School. Other graduates who wish to earn a four-year bachelor’s degree in a different major from Rice must:

• Be accepted for the major by the major department
• Fulfill all requirements for the second degree
• Complete at least 60 semester hours at Rice (these hours are applied to their Rice degree)
Financial Aid and Housing. Students seeking information about financial aid available to participants in the second degree program should contact the Office of Student Financial Services. Students admitted to the second degree program may request assignment to a college, but they will have lower priority for on-campus housing than students enrolled for a first four-year bachelor’s program. This means that housing will probably not be available.

Honors Programs

To enroll in the two-semester Rice Undergraduate Scholars Program, students register for HONS 470–471 Proposal Development and Research. This program is for juniors and seniors in all disciplines who are considering graduate study and an academic career after graduation. Students enroll in the program plan and execute independent research under the supervision of a sponsoring faculty member (they may apply for funding to cover expenses related to their projects). They meet once a week to discuss each other’s work and to hear a range of presentations on life in academia. Students may apply in the spring of each year. For more information, contact the program’s faculty co-director, James L. Kinsey, in the chemistry department.

Individual departments may offer undergraduates the option of honors program enrollment. These programs enable students to receive advanced training or to deepen their understanding of a given discipline through an intensive program of independent supervised research. Customary procedure is for students to submit a proposed project to their department’s Undergraduate Committee, which helps them rework it, as needed, into a substantial but feasible proposal. Once accepted, students are assigned a faculty adviser to guide their research. The project concludes in an honors thesis, which the adviser and two readers evaluate, and an oral examination. Departments also use honors programs to formally recognize students who have shown outstanding work through their individual projects. Acceptance into a departmental honors program is at the discretion of the faculty. For specific requirements and procedures, students should contact the individual departments.

Transfer Credit

Courses taken at another college or university that are appropriate to the Rice curriculum may be approved for transfer credit toward a Rice undergraduate degree. This includes credit for summer school courses not taken at Rice, though no more than 14 semester hours of transfer credit taken in summer schools other than Rice may be applied to any Rice degree. Students must have taken the course at a U.S. academic institution accredited by a regional accrediting agency or with a study abroad program approved by the Department of International Programs and must have earned a grade of C- or the equivalent or better. Students may not transfer courses taken pass/fail or on a similar basis at other institutions. Courses that meet these requirements will be transferred to Rice by the Office of the Registrar as general credit with the designation TRAN. The Office of the Registrar will distinguish between credits that are upper-level and credits that are not upper level. TRAN credit will count toward the general hours needed for graduation under university requirements and for upper-level credit needed if it is designated by the Office of the Registrar as upper-level credit.

The Office of the Registrar, in conjunction with the academic departments, determines whether courses are appropriate for transfer to Rice as Rice equivalent courses. Individual departments may place additional restrictions on particular courses and/or institutions. Similarly, various majors and degree programs may limit the amount of transfer credit that students may apply to them. If courses transferred to Rice as TRAN credit are subsequently granted Rice equivalent course credit by the Office of the Registrar and academic department, the TRAN credit is reduced by the number of credit hours of the Rice equivalent course. The Rice equivalent is then listed on the student’s transcript and satisfies the university and major requirements the Rice course satisfies. Courses may be evaluated for transfer directly as Rice equivalent courses, if appropriate, if the student completes the forms required by the Office of the Registrar. Students also may have to obtain departmental approval.

Because of these restrictions, students are strongly advised to seek prior approval from the registrar for courses for which students plan to receive Rice equivalent credit. The Office of the Registrar may require that students secure approval from the major department to receive Rice equivalent credit. Without prior approval, students cannot be certain that credit taken at another institution will be transferred as a Rice equivalent course and therefore count for major or specific university requirements.

If approved, the equivalent Rice course or the general TRAN credit, as the case may be, is entered on the student’s record after the Office of the Registrar receives an official transcript from the other college or university. For credits obtained while studying abroad, the Office of the Registrar also must receive the necessary approval paperwork from Rice International Programs before transfer credit may be granted. Students may appeal to Rice International Programs to have credit granted from nonapproved study abroad programs. Such appeals generally should be justified by the curricular needs of the student. In addition, credit from non-U.S. degree-granting universities not part of a study abroad program must be approved by Rice International Programs. Credit is generally determined on a pro rata basis. No grade is entered, and transferred courses have no effect on a student’s Rice grade point average.

Students with much transfer credit should be aware of the general graduation requirements (listed on pages 18-20) that they must complete at least 60 semester hours at Rice, complete more than half of their upper-level degree work and more than half of their upper-level major work at Rice (students also should check their specific departmental major requirements).

Excused Absences

Students are expected to be in attendance at all of the classes for which they are registered during the entire course of the academic semester for which they are enrolled. The university understands, however, that students participating in university-sponsored extracurricular activities may, on rare occasions, need to miss a class session. As a matter of course, students should inform their instructors in advance of absences resulting from participation in university-sponsored activities, and faculty will normally give a reasonable opportunity to make up work missed on such occasions. Absences for activities other than university-sponsored events may also be negotiated on an informal basis between the student and the faculty member. Alternatively, absences may be formally excused on a case-by-case basis if a petition explaining the nature of the event, accompanied by suitable documentation, is submitted to the Committee on Examinations and Standing at least two weeks before the event.

Final Examinations

Most courses include final examinations, but the decision to give a final exam as a required part of the course rests with the instructor and the department. All tests and
calculations. If students repeat courses previously passed, credit is awarded only once (and grade) remains on the transcript, and both grades are included in grade point average.

Final examinations are normally three hours long. When instructors, for exceptional reasons, wish to give a longer examination, they schedule it as a take-home exam; even then, they may not exceed five hours. The “due date” for all take-home finals is the end of the final examination period.

University-sponsored events at which student attendance is required may be scheduled in or outside of Houston during the period from Monday through Saturday during the last week of classes, so long as no more than one day of classes and one night would be spent out of Houston from the previous Sunday night through Friday afternoon.

Events scheduled on Saturday may involve travel on Friday evening and on Sunday. However, no events may be scheduled on Sunday and thereafter until the conclusion of the final examination period. Exceptions may be authorized only by the Committee on Examinations and Standing.

Grades (See also Faculty Grading Guidelines on pages 8–9.)

The Pass/Fail Option. Undergraduates may register for courses on a pass/fail basis. Such students:

- May not take more than 1 course as pass/fail per semester for each full year of residence (students studying in off-campus programs through Rice are considered to be in residence for the purpose of this rule)
- May not take more than 4 courses total as pass/fail (even if they are in a five-year degree program)
- May not take more than a total of 14 semester hours total as pass/fail
- May register for only 1 course as pass/fail in a semester
- May take courses on a pass/fail basis that are not used to satisfy the requirements of their major
- Must file the proper form for a course to be taken pass/fail no later than the posted deadline, usually the end of the 10th week of the semester

Note: If a student takes a course pass/fail that is required for their major (as indicated by their major department) the registrar will automatically replace the P with the grade earned.

Students may convert a pass/fail course to a graded course by filing the proper form with the registrar. The deadline is by the end of the fifth week of the following semester. A student who receives two or more “incompletes” in a semester may not enroll in the next semester for more than 14 semester hours. Students should also be aware that they may be placed on probation or suspension when the “incomplete” is changed to a grade, either by an instructor or by default.

INC (“Incomplete”)—Instructors report this designation to the registrar when a student fails to complete a course because of verified illness or other circumstances beyond the student’s control that occur during the semester. Students must complete the work, and instructors must submit a revised grade, by the end of the fifth week of the next semester; otherwise, the registrar’s office records the grade originally submitted. Students with an “incomplete” must be certain that tests, papers, and other materials affecting their grade or essential to completing a course requirement are delivered by hand to the appropriate professor or office with ample time for the instructor to grade the documents and submit the final grade to the Office of the Registrar by the end of the fifth week of the following semester. Loss or lateness because of mail service is not an acceptable excuse for failing to meet academic deadlines. A student who receives two or more “incompletes” in a semester may not enroll in the next semester for more than 14 semester hours. Students should also be aware that they may be placed on probation or suspension when the “incomplete” is changed to a grade, either by an instructor or by default.

W (“Withdrew”)—Instructors report this designation to the registrar when a student fails to complete the final examination after completing all the other work for the course. Students must resolve the matter, and instructors must submit a revised grade, by the end of the first week of the second semester or by the end of the fourth week after commencement, whichever is applicable. If the registrar’s office does not receive a revised grade, the original grade submitted is recorded. A designation of “other” is also used if an accusation has been made to the Honor Council. As noted above, students should be aware that they may go on probation or suspension when the “incomplete” is changed to a grade, either by an instructor or by default.

Students should be aware that while a grade of P does not affect their grade point average, a grade of F is counted as a failure and is included into their GPA. Students who take a course during the Rice summer session as pass/fail should also be aware that this counts toward their allowable total of 4 courses.

Students may repeat courses previously failed, but the record of the first attempt (and grade) remains on the transcript, and both grades are included in grade point average calculations. If students repeat courses previously passed, credit is awarded only once unless the course description states that students may repeat it for additional credit. In the latter case, each grade appears on the permanent record and is included in the grade point average.

Grade Designations. Under certain circumstances, special designations accompany the student’s grade. These designations do not affect the grade point average. For students who receive a designation of “incomplete” or “other,” the grade reflects a calculation that gives zero credit for work not completed. It does not become part of the student’s record (except as discussed below). For students who receive a W, indicating withdrawal from the university within the last five weeks of classes, the grade is based on the performance of the student up to the time of withdrawal. It does not appear on the student’s record and is used solely in determining the student’s eligibility for readmission.

The special designations include the following:

NG (“No Grade”)—This designation indicates that the instructor failed to report a grade. Instructors are responsible for resolving this situation as quickly as possible.

NC (“No Credit”)—This designation signals that no credit was granted for the course. It is only used for people auditing the course.
Grade Points. To compute grade point averages, letter grades are numbered as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.33</td>
</tr>
<tr>
<td>A</td>
<td>4.00</td>
</tr>
<tr>
<td>A-</td>
<td>3.67</td>
</tr>
<tr>
<td>B+</td>
<td>3.33</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
</tr>
<tr>
<td>B-</td>
<td>2.67</td>
</tr>
<tr>
<td>C+</td>
<td>2.33</td>
</tr>
<tr>
<td>C</td>
<td>2.00</td>
</tr>
<tr>
<td>C-</td>
<td>1.67</td>
</tr>
<tr>
<td>D+</td>
<td>1.33</td>
</tr>
<tr>
<td>D</td>
<td>1.00</td>
</tr>
<tr>
<td>D-</td>
<td>0.67</td>
</tr>
<tr>
<td>F</td>
<td>0.00</td>
</tr>
</tbody>
</table>

The credit attempted in semester hours and the points for the grade earned are multiplied. Then these products (one for each course) are added together, and the sum is divided by the total credit attempted. Grade point averages are reported each semester on the student’s grade report and appear on unofficial transcripts. However, grade point averages are not included on official transcripts nor, like class ranks, are they reported to any external agency.

President’s Honor Roll. This honor roll, published each semester, recognizes outstanding students. To be eligible, students must have earned grades in a total of 12 or more semester hours without receiving a grade of F. (Pass/Fail courses may not be counted.) Approximately 30 percent of the top undergraduates receive recognition each semester. While undergraduates enrolled in a four-year bachelor’s degree program are always eligible for the President’s Honor Roll, students enrolled in five-year bachelor’s or master’s programs are eligible only during their first 8 semesters.

Academic Discipline and Other Disciplinary Matters

Academic Probation. Students are placed on academic probation at the end of any semester if:
- Their grade point average for that semester is less than 1.67
- Their cumulative grade point average is less than 1.67 (this requirement is waived if the grade point average for that semester is at least 2.00)

The period of probation extends to the end of the next semester in which the student is enrolled. Students on probation (academic or disciplinary) may not be candidates for, or hold, any elective or appointed office in any official Rice organization, nor may they participate in the student activities on and off campus and use of Rice facilities, including the student center, the colleges, the playing fields, the gym, and the computer labs, are limited to enrolled students.

Disciplinary Probation and Suspension. The assistant dean of student judicial programs may place students on probation or suspension for an honor system violation or for other disciplinary reasons. Students on disciplinary suspension (including for an honor system violation) may not receive their degree even if they have met all academic requirements for graduation. They must leave the university within 48 hours of being informed of the dean’s decision, though in cases of unusual hardship, the college master and assistant dean of student judicial programs may extend the deadline to one week. Any tuition refund will be prorated from the official date of suspension, which is determined by the registrar. While on disciplinary suspension, students may not run for, or hold, any elective or appointed office in any official Rice organization, nor may they serve as an Orientation Week adviser once they return to the university. Participation in student activities on and off campus and use of Rice facilities, including the student center, the colleges, the playing fields, the gym, and the computer labs, are limited to enrolled students.

Readmission After Suspension. Students seeking readmission after academic suspension should address a letter of petition to the Committee on Examinations and Standing, which must receive it at least one month before the beginning of classes. The petition should include two supporting letters from persons for whom the student has worked during the suspension period as a student or an employee. If the problems causing the previous difficulty appear to be resolved, the student generally is re-admitted. Students returning from a second suspension must submit an academic program approved by the Office of Academic Advising before they are readmitted. These students must also maintain regular contact with that office throughout the semester. In some instances, the committee may postpone approval of readmission or rule that suspension is permanent. Under those circumstances, students desiring special consideration with regard to readmission should petition the committee in writing.

Students seeking readmission after leaving the university due to disciplinary or other nonacademic action should submit a petition in writing for review by the assistant dean of student judicial programs.

Rice Summer School. Although it may do so at its discretion, the Committee on Examinations and Standing does not normally place on probation or suspension students who perform poorly in the Rice Summer School. Students should be aware, however, that Rice Summer School grades are included in their grade point averages.

Withdrawals and Leaves

Voluntary Withdrawal and Readmission. Students may withdraw voluntarily from the university at any time during the semester up until the last day of classes. If they are in good academic standing at the time of their withdrawal, students are considered for readmission after they submit a written application to the vice president for student
affairs. If students withdraw within five weeks of the last day of classes, they must submit the written application to the Committee on Examinations and Standing for approval as well. If students withdraw for major medical or psychological/psychiatric reasons, however, they must meet the readmission conditions for an involuntary withdrawal (see below).

Students wishing to withdraw should inform their college master in person and give written notification to the vice president for student affairs, who notifies other offices of the university as necessary. If students withdraw within five weeks of the last day of classes, the committee takes into account their grades (which reflect their performance up to the day of withdrawal) when ruling on their readmission. Students whose grades would have led to suspension had they not withdrawn are treated, for purposes of readmission, as if they had been suspended. Such students must meet the requirements for readmission under academic suspension (see page 37).

Students who fail to give notice of withdrawal should expect to receive failing grades.

Involuntary Withdrawal. The university may insist on a student’s involuntary withdrawal if, in the judgment of the vice president for student affairs, the student:

• Poses a threat to the lives or safety of him/herself or other members of the Rice community
• Has a medical or a psychological problem that cannot be properly treated in the university setting
• Has a medical condition or demonstrates behavior that seriously interferes with the education of other members of the Rice community

Students should submit written petitions for readmission after involuntary withdrawal to the vice president for student affairs, providing evidence that they have resolved the problems leading to their withdrawal. Some cases may require an interview with the director of the Rice Counseling Center, with the director of Student Health Services, or with their designees.

Unauthorized Withdrawal. Students who leave the university without first obtaining permission to withdraw are considered to have resigned. Although students who resign are not normally considered for readmission, they may petition first the Committee on Examinations and Standing, then the vice president of student affairs. Withdrawal without permission is noted on the transcript, but readmitted students may petition to have this notation expunged from their record by following the procedures described in the Code of Student Conduct.

Leave of Absence. Students may request a leave of absence from the university by applying in writing to the vice president for student affairs at any time before the first day of classes in the semester for which they are requesting leave. A leave of absence taken after the first day of classes is considered a voluntary withdrawal.

To gain readmission following an approved leave of absence of not more than four semesters, students need only notify the vice president for student affairs at least one month before the beginning of the semester that they intend to end their leave. After a leave of more than four semesters, they should apply in writing to the Committee on Examinations and Standing as if the leave were a voluntary withdrawal (see page 37).

Approval of a leave of absence is always contingent on the student’s satisfactory completion of course work in the semester preceding the leave. Students performing poorly may have their approved leave converted to suspension.

Approved Leave to Study Abroad. Students wishing to take a leave of absence to study abroad and who intend to transfer credit back to Rice must complete an Approved

Leaves for Study Abroad form and a transfer credit form (including required signatures). Forms are available from, and should be returned to, the Office of International Education, Ley Student Center. This approval process takes the place of the regular request for a leave of absence (see above). At the end of their foreign study and 30 days before classes begin at Rice, students must notify the director of international education, in writing, of their intention to either return to Rice or take a regular leave of absence.

Applicable Academic Graduation Requirements

Students enrolled in four- (or five-) year bachelor’s programs may decide whether to operate under the graduation requirements in effect when they first registered at Rice or those in effect when they graduate. If they graduate more than seven (or eight) years after their initial registration, they must graduate under the regulations in effect at the time of their last readmission or those in effect when they graduate. Also, departments may review courses completed in a major more than seven (or eight) years prior to the student’s anticipated graduation. If the department concludes that a course no longer satisfies the requirements of the major, it is not credited toward the major program, although it remains on the student’s record.

Departmental major requirements may vary from year to year during the period between a student’s matriculation and graduation. The department may, at its discretion, make any of these variations available to a student for completion of the major requirements. If a new degree program or major is created during the student’s time at Rice, the new program will be available to a student as if the program appeared in the General Announcements at the time of matriculation.

Name Changes

In order to comply with a number of government agencies reporting requirements, the university must record the name of each student who is a U.S. citizen as the student’s name appears on his or her Social Security card. Students who need to change their names on Rice University records and who are U.S. citizens must notify the Office of the Registrar and present a Social Security card, marriage license, divorce decree, or court order and picture identification when submitting the form. After the change is implemented, the name on the Rice University transcript will read as printed on the supporting document(s).

Change in Enrollment

The academic calendar lists deadlines for dropping or adding a class or section. This schedule is binding for all students. Adding or dropping a course, including transferring from one section to another or changing credit status in a course must be accomplished through completion of the appropriate forms and submission to the Office of the Registrar.

Transcript Policies

Transcripts are issued only at the request of the student. Transcript requests should be made at least three working days prior to the desired date of issue. A $5 fee per transcript must be received before a transcript is issued.

Transcripts that have been presented for admission or evaluation of credit become a part of the student’s permanent record and are not reissued. Transcripts from other institutions, if needed, must be sent to Rice University directly from the original issuing institution.
Student Records

Rice University assures the confidentiality of student educational records in accordance with state and federal laws, including the Family Educational Rights and Privacy Act. Student academic records are maintained primarily in the Office of the Registrar and in the academic department of the student’s major, as well as various other offices around campus. All students have the right to review their records to determine their content and accuracy, to consent to disclosures of personally identifiable information as defined by law, and to file complaints with the Department of Education. Parents of dependent students, as defined by the Internal Revenue Code, who give evidence of the dependent status, have the same rights.

Release of Student Information from Educational Records

The disclosure or publication of student information is governed by policies of Rice University and the Family Educational Rights and Privacy Act. A student’s consent is required for the disclosure or publication of any informational which is a) personally identifiable and b) a part of the educational record. However, certain exceptions to this general rule, both in types of information which can be disclosed and in access to that information, are allowed by the regulations of the Family Educational Rights and Privacy Act. Rice may allow access to personally identifiable information without a student’s prior consent to its faculty or staff who legitimately require this information to perform their instructional, supervisory, advisory, or administrative duties.

In accordance with the law, a student’s prior consent is not required for disclosure of portions of the educational record defined by the institution as directory information. The following directory information may be released by the university:

1. Name, local and permanent address, and telephone number(s);
2. Date and place of birth and sex;
3. Classification and major and minor fields of study;
4. Participation in officially recognized activities and sports;
5. Weight and height of members of athletic teams;
6. Dates of attendance, degrees and awards received;
7. The most recent previous educational agency or institution attended by the student; and
8. Photographic image.

The information above, designated by the university as directory information, may be released or published by the university without a student’s prior written consent unless exception is made in writing by the student or the parents of a dependent student. Students who prefer to avoid access to or release of directory information must notify the registrar in writing prior to the end of the second week of fall classes, and the university will withhold access to, or release of, directory information until further written instruction is received. Students have a right to challenge the accuracy of their educational records and may file written requests to amend these records. The Office of the Registrar should be contacted for further information regarding the procedure to follow for questions or problems.

For complete information regarding the policies outlined above, please contact:

Rice University Registrar
Rice University
Office of the Registrar – MS 57
6100 Main Street
Houston, TX 77005-1892
Email: reg@rice.edu

Veterans Information

At Rice University, the Office of Veterans Affairs is managed through the Office of the Registrar. This office assists all veterans and their dependents who wish to receive VA educational benefits. The office also provides personal counseling, fee deferments, tutorial assistance, and work-study jobs.

Veterans who are planning to attend the university should contact the Office of Veterans Affairs at least two months prior to the date of entry. Such time is required to expedite the processing of paperwork for educational allowances from the Veterans Administration.

For certification of benefits, the student must be enrolled according to the following schedule:

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Time</td>
<td>12 Credits</td>
</tr>
<tr>
<td>1/2 Time</td>
<td>6 Credits</td>
</tr>
<tr>
<td>3/4 Time</td>
<td>9 Credits</td>
</tr>
<tr>
<td>Less than 1/2 Time</td>
<td>5 Credits</td>
</tr>
</tbody>
</table>

For rate of monthly payment of educational allowances for veterans and dependents, please contact Office of Veterans Affairs.

For additional information regarding other Veterans Educational Programs contact the Office of the Registrar 713-348-8031 or reg@rice.edu.

Application for Graduation

All students must complete an Application for Graduation Form available in the Office of the Registrar. This form is required for all students who plan to complete their degree requirements at the end of the fall or spring semester.

Academic Advising

Rice University is dedicated to providing the information, advising, resources, and support needed for our students to set goals for academic achievement and to design plans to succeed in reaching those goals. Rice is committed to a long tradition of academic advising by the faculty, primarily through the colleges and the departments and with the support of the Office of Academic Advising. Rice is further committed to providing academic assistance to students who need tutoring in difficult classes.

Academic advising for most new students at Rice occurs primarily in the residential colleges, provided by faculty associates. New students are assigned a divisional adviser based on their general areas of academic interest or proposed majors. There are four major undergraduate divisions—humanities, social sciences, natural sciences, and engineering. Architecture and music majors have advisers within those schools. Until a major is declared, the divisional adviser must approve registration and add/drop forms. Students must declare a major prior to preregistration for the junior year, if not sooner, according to the deadline in the Academic Calendar (see Declaring Departmental Majors on Page 50). Once a major is declared, the primary source of academic advice is a faculty member who is a designated major adviser in the department or program. All students are strongly encouraged to consult with major advisers at any time prior to declaring the major.

The Office of Academic Advising, located in the Ley Student Center, is a source of advice for all students. In addition to providing support, resources, and training for divisional and major advising, the Office of Academic Advising provides guidance to students planning careers in the health professions and law, to students planning to attend graduate school, and to any student needing general academic advice.
The Rice Tutoring Program

Through the Office of Academic Advising, every student at Rice is entitled to free tutoring assistance, both individually and in small groups, on a limited basis. Details of the Rice Tutoring Program are available from the Office of Academic Advising.

Summer School for College Students

Rice Summer School for College Students, administered by the School of Continuing Studies, offers courses for credit to Rice students, visiting undergraduates, graduate students, and Class III students (see page 82–83). Two summer sessions are offered: in May and June–July. See Academic Calendar, pages vi–x. Taking 6 to 8 semester hours in one session is considered a full load. Interested students should complete the application form found on the summer school website at http://scs.rice.edu/summercredit. Admission is automatic for any Rice undergraduate or graduate student in good standing. Visiting students in good standing should send official transcripts, including spring semester grades, (mailed directly from their universities and colleges to the School of Continuing Studies) as well as the completed application. Acceptance in the Rice Summer School carries no implications for regular admission to Rice.

All applicants, including Rice students, should submit their applications to the Rice Summer School Office with the application fee and a tuition deposit. The remaining tuition is due in full at registration before the beginning of classes. Auditors of summer school courses, who are considered visiting students, must pay full tuition and fees. Limited financial aid is available for Rice students only.

It is essential that students apply by the deadlines listed on the summer school website. Courses that do not generate enrollments sufficient to cover their costs may be canceled. Students may apply after the deadline (but before the start of classes) by paying a late fee.

For more information, including tuition and registration information, students should contact the Rice Summer School Office at 713-348-4803, via e-mail at scsummer@rice.edu or online at http://scs.rice.edu/summercredit/.

Admission of New Students

From its beginning, Rice University has sought to maintain an academic program of the highest excellence for a small body of students. While the university’s resources and programs have expanded over the past years, the total number of students who matriculate remains relatively small, approximately 650 students in each first-year class.

We seek students of keen intellect who will benefit from the Rice experience. Our admission process employs many different means to identify these qualities in applicants. History shows that no single gauge can adequately predict a student’s preparedness for a successful career at Rice. For example, we are cautious in the use of standardized test scores to assess student preparedness and potential. In making a decision to admit or to award financial assistance, we are careful not to ascribe too much value to any single metric, such as rank in class, grade point average, or standardized test score.

We use a broader perspective that includes such qualitative factors as the overall strength and competitive ranking of a student’s prior institution and the rigor of his or her particular course of study. Taken together with a student’s test scores and academic record, these additional factors provide a sound basis to begin assessing the applicant’s potential.

Beyond these objective tests of academic competence, we look for other, more subjective qualities among applicants, such as creativity, artistic talent, and leadership potential. We believe that students who possess these attributes in combination with strong academic qualifications will benefit most from a Rice education. Through their contributions and interactions with others, they will enrich the educational experience of all students. These qualities are not revealed in test scores but are manifest in the breadth of interests and the balance of activities in their lives.

Rice University seeks to create on its campus a rich learning environment in which all students will meet individuals whose life experiences and world views differ significantly from their own. We believe that an educated person is one who is at home in many different environments, at ease among people from many different cultures, and willing to test his or her views against those of others. Moreover, we recognize that in this or any university, learning about the world we live in is not by any means limited to the structured interaction between faculty and students in the classroom but also occurs through informal dialogue between students outside the classroom.

To encourage our students’ fullest possible exposure to the widest possible set of experiences, Rice seeks in its admission policies to bring bright and promising students to the university from a range of socioeconomic, cultural, and geographic origins. We seek students whose parents did not attend college, as well as students from families with a well-established history of college-level education. Rice places a premium on recruitment of students who have distinguished themselves through initiatives that build bridges between different cultural, racial, and ethnic groups. In so doing, we endeavor to craft a residential community that fosters creative, intercultural interactions between students, a place where prejudices of all sorts are confronted squarely and dispelled.

In assessing how well an applicant can contribute to enlivening the learning environment at Rice, we also try to determine the relative challenges that he or she may have faced. For economically disadvantaged students, this may mean achieving a high level of scholastic distinction while holding down a job in high school. For a first-generation college student, this might mean achieving high standards for academic success within an environment relatively indifferent to intellectual attainment. Or it might mean overcoming a disability to excel in sports, music, or forensics. For students who do not have particular disadvantages, we also look at whether they chose a more challenging road than the normal path through high school. This might mean an especially strenuous course of study, prolonged and in-depth engagement in a school project, or a particularly creative and wide-ranging set of extracurricular activities.

Our admission process precludes any quick formula for admitting a given applicant or for giving preference to one particular set of qualifications without reference to the class as a whole. An inevitable consequence of this approach is that some otherwise deserving and well-qualified students will not be admitted to Rice. By selecting a wide range of matriculants of all types, the admission process seeks to enrich the learning environment at Rice and thus increase the value of a Rice education for all students.

Due to the nature of the Rice education, Rice enrolls undergraduate degree candidates on a full-time basis only. First-year applicants, architecture applicants, and international students may apply for the fall semester only. Other applicants may apply to enter either the fall or spring semester.

Applicants are selected on a competitive basis in six academic divisions: architecture, engineering, humanities, music, natural sciences, and social sciences. Candidates should give careful consideration to the category under which they wish to be considered. However, once enrolled, most students are able to move freely among most divisions after consultation with their advisers. Music students must pursue the music program for at least the first year before changing divisions. The Schools of Music and Architecture maintain limited enrollments; all majors are subject to faculty approval.

Those offered admission are expected to complete the remainder of their high school courses with the same superior performance that led to their admission.
First-Year Applicants

There are four areas of focus generally used in evaluation of first-year candidates for admission: scholastic record as reflected by the courses chosen and the quality of academic performance, recommendations from high school, the application presentation of personal information and essays, and standardized testing (SAT I or ACT and three subjects from the SAT II).

The High School Record. Students must complete at least 16 college preparatory units as follows:

- English: 4
- Social studies: 2
- Mathematics: 3
- A foreign language: 2
- Additional credits in any of the categories above: 3

The natural science and engineering divisions require trigonometry (pre-calculus) or other advanced mathematics courses and both chemistry and physics. Students may substitute a second year of chemistry or biology for physics.

Students admitted with academic deficiencies will be asked to complete the required work by taking high school or college-level courses during the summer before enrollment at Rice.

Note: Because of the admission competition to enter Rice, successful applicants generally have taken 20 or more college preparatory courses, many at the college level. Therefore, only those students who have more than 20 college preparatory courses may have the registrar consider for Rice credit their college courses taken in high school.

Transfer of Coursework Taken During High School. College-level courses taken during high school years may be considered for credit at Rice University on receipt of the following documentation:

1. An official transcript of all college courses sent directly from the college(s) attended to Rice University, Office of the Registrar. No college-level courses that appear only on the high school transcript will yield credits at Rice.
2. From each college attended, official verification that all courses were taken on the college campus, were taken together with students at that college, were taught by regular members of the college faculty, and were a part of the normal curriculum of the college. This type of documentation is normally obtained from the registrar’s office of each college.
3. Official notification by letter from the high school principal or guidance counselor that the credit earned was not used to meet high school diploma requirements.

Recommendations. Candidates must submit evaluations from their guidance counselor and one teacher. The necessary forms are included in the application.

The Application. The application provides the committee with important information on the student’s background and gives the applicant an opportunity to provide statements on his or her interests, experiences, and goals. Both the Rice application and the Common Application are accepted. The application fee is $35. Students for whom this fee creates a hardship may apply for a waiver. Freshman applicants should provide proof of a fee waiver for the SAT I or ACT test or eligibility for the school lunch program. In any case, a letter from the student’s high school counselor is required. Financial stress created by application fees to other institutions is not considered a valid reason to grant a fee waiver.

Standardized Testing. The SAT I or ACT and three subject exams from the SAT II are required for admission. All applicants must submit three SAT II tests: one in writing and two in fields related to the candidate’s proposed area of study.

These exams are administered by the College Board and the American College Testing Program. Bulletins and test registration forms are available from high school counseling offices. The applicant is responsible for arranging to take the tests, and official score reports must be submitted before the student can be considered for admission. The College Board code for Rice is 6609. The ACT code is 4152.

Personal Interview. Although a personal interview is not a requirement, we recommend an interview for first-year applicants as an excellent opportunity to discuss the applicant’s interests, needs, and questions. On-campus interviews are conducted by the admission staff and a select group of Rice senior students. Also, off-campus interviews are conducted throughout the United States by Rice alumni. Please consult the application packet or call the admission office for details.

Music Audition. Candidates to the Shepherd School of Music must arrange for an audition with a member of the music faculty.

Architecture Portfolio and Interview. Architecture applicants must submit a portfolio. An interview with a faculty member from the School of Architecture is strongly recommended.

Decision Plans

Early Decision Plan. Early Decision is designed for students who have selected Rice as their first choice. Students may initiate applications to other colleges but may make a binding Early Decision application to one college only.

Early Decision applicants must complete the required standardized testing on or by the October testing dates in the senior year. All other materials should be postmarked by November 1. Admission notices will be mailed by December 15. The committee will admit, defer, or deny Early Decision applicants. Deferred applicants are considered with the Regular Decision pool, and seventh-semester grades and additional standardized test scores will then be considered.

It is important to note that if admitted under Early Decision a candidate must withdraw all other college applications, may not submit any additional applications after accepting the offer, and must accept Rice’s offer of admission by submitting a $100 nonrefundable deposit by January 2. An additional $50 housing deposit is required of those desiring on-campus accommodations.

Those accepted under Early Decision may receive an estimate of need-based financial aid by registering for the College Scholarship Service (CSS) PROFILE by October 1, and sending the PROFILE packet to CSS by November 1. Register for CSS PROFILE by calling 1-800-778-6888 or by visiting their website at www.collegeboard.com. CSS will mail you the PROFILE; complete and return it to CSS. Students may also complete the PROFILE online. The PROFILE number for Rice is 6609. Note that official financial aid offers may be made only after the Office of Student Financial Services has received the following documents (all of which should be completed after January 1):

- CSS PROFILE, priority date February 1
- Free Application for Federal Student Aid (FAFSA), priority date February 1
Those who desire a room on campus must pay an additional $50 deposit by May 1 to reserve a place in the incoming class. After May 1, deposits are not refundable. Those who desire a room on campus must pay an additional $50 deposit.

Deferred applicants are considered with the Regular Decision pool, and seventh-grade semesters and additional standardized test scores will then be considered.

Deferred Decision applicants who are offered admission must pay a $100 registration deposit by May 1 to reserve a place in the incoming class. After May 1, deposits are not refundable. Those who desire a room on campus must pay an additional $50 deposit.

Regular Decision Plan. Students who apply Regular Decision must postmark their materials by January 2 to receive notification by April 1. Candidates who miss the deadline must do so in full knowledge that they are in a less competitive position. Regular Decision applicants must complete their standardized tests by February.

Regular Decision applicants who are offered admission should submit a $100 registration deposit by May 1 to reserve their places in the incoming class. After May 1, deposits are not refundable. Those who desire a room on campus must pay an additional $50 deposit.

Accelerated Students

Rice University will accept applications from students who are completing high school in less than four years. It is important to note that these students will compete with other candidates who will be completing four years of high school. Therefore, it is the candidate’s responsibility to demonstrate that he or she has exhausted all college preparatory course work at his or her school. Further, because of the residential focus and commitment to student self-governance at Rice, candidates must also demonstrate the maturity and personal development that would allow them to participate fully and responsibly in campus life. Because of the unique circumstances surrounding the accelerated student, it is strongly recommended that these candidates have an on-campus interview with a member of the admission staff before the application deadline.

Home-Schooled Applicants

The Committee on Admission and Financial Aid recognizes that each home-schooled applicant is in a unique educational program. To ensure that our evaluation process is fully informed, each home-schooled applicant is encouraged to provide clear, detailed documentation of his or her curriculum of study, assessment tools, and learning experiences. Rice requires two academic letters of recommendation from all applicants, and at least one of these letters must come from someone who is not related to the applicant.

Transfer Students

Students with superior records from two-year or four-year colleges or universities may apply as transfer candidates. Applicants for transfer admission must file the following with the Office of Admission:

- The written application
- Official transcripts of all high school and college work completed to date as well as courses in progress
- Two faculty recommendations
- A recommendation from the dean of students

Advanced Placement/International Baccalaureate/Placement Tests

Students who score a 4 or 5 on the applicable Advanced Placement College Board examinations prior to matriculation at Rice are given university credit for corresponding Rice courses. Students who receive a score of 6 or 7 on a higher-level International Baccalaureate exam will also receive course credit for the appropriate course. Furthermore, during Orientation Week, entering students may take placement tests administered by various departments at Rice. On the basis of these tests, students may be advised to register for courses beyond the introductory level. In most cases, credit is not given for these tests.

Other Students

Please note that financial assistance is not available for visiting, Class III, second degree, dual enrollment, or auditing students.

Visiting Students. Students who wish to spend a semester or a year at Rice taking courses for credit to be applied toward their undergraduate degree at another school may apply for admission as visiting students through the Office of Admission. The student’s application should be accompanied by the $35 application fee, an official high school transcript, an official transcript of college work to date, an SAT I (SAT) or ACT score, and recommendations from the dean of students and a faculty member who has taught the student within the past academic year. Visiting student applications should be postmarked by April 1 for the fall semester and November 1 for the spring semester.

Visiting students are assigned membership to one of the residential colleges during their stay and are charged the same fees as other undergraduates. In a few classes where enrollment is limited because of space or other considerations, candidates for Rice degrees have priority over visiting students.

Visiting students may apply to transfer to Rice only after having left Rice for at least one semester.

Class III Students. Students with Class III standing at Rice have an undergraduate or graduate degree from an accredited college or university and are taking courses at Rice.
for credit but not in a specific degree program. Students interested in this program should contact the Office of Graduate Studies.

**Second Degree Students.** An individual who has a bachelor’s degree from another institution and desires another degree in a different area of focus may apply as a second degree student on a space-available basis. Students may only pursue a second degree that is different from their first degree. The application, a $35 application fee, official transcripts of all undergraduate and graduate work, two faculty letters of recommendation and a recommendation from the dean of students from the most recent college attended, and standardized test scores (the SAT, SAT I, or ACT) are required to complete an application file. The deadline for fall admission is June 1 and the deadline for spring is November 1.

Second degree applicants with a prior bachelor’s degree from Rice should apply to the Office of the Registrar. The application should include a written statement specifying the proposed major and course program for the second degree, a supporting letter from the chair of the major department, and an explanation of the student’s reasons for seeking a second degree.

**Dual Enrollment Students.** Accelerated high school juniors and seniors who have taken all the courses in a given discipline available to them in high school may request admission to Rice for the purpose of taking one or more university-level courses as dual enrollment students. The written application, application fee of $35, high school transcript, a teacher and a counselor recommendation from the applicant’s high school, and an SAT I or ACT score should be sent to the Office of Admission by June 1 for the fall semester or December 1 for the spring semester. Home-schooled students must demonstrate that they have exhausted all other community resources before applying for dual enrollment at Rice. All dual enrollment students are limited to two courses per semester at Rice.

Tuition for new students is $732 per semester hour plus a $100 registration fee, the total not to exceed $8,775. Tuition for returning dual enrollment students would be the rate (plus inflation) at which they first took dual enrollment courses at Rice. These charges are for the 2002–2003 school year and are subject to change in subsequent years. Financial assistance is not available for this program.

**Auditors.** Any interested person, including currently enrolled students, may audit one or more courses at Rice by securing permission of the instructor and by registering as an auditor with the registrar. The university grants no academic credit for such work. Audit credit does not appear on transcripts. Currently enrolled students may audit courses without charge. Rice alumni are charged a fee of $260 per course per semester. All others are charged $515 per course per semester for the privilege of auditing. Request to audit a class must be done during the first week of the semester.

**Tuition, Fees, and Expenses**

Charges for tuition, fees, and room and board are billed to students each semester. Students may pay the charges in full by the due date or in installments over the course of the semester. The fall semester due date is mid-July for freshmen and mid-August for all others, and the spring semester due date is the first week of January. The following costs apply to undergraduates in the 2002–2003 school year:

<table>
<thead>
<tr>
<th>Tuition</th>
<th>Annual</th>
<th>Semester</th>
<th>Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entering first-year and transfer students¹</td>
<td>$17,550</td>
<td>$8,775</td>
<td>$732</td>
</tr>
<tr>
<td>Students matriculating in 2001–02²</td>
<td>$16,850</td>
<td>$8,425</td>
<td>$702</td>
</tr>
<tr>
<td>Students matriculating in 2000–01</td>
<td>$16,750</td>
<td>$8,375</td>
<td>$698</td>
</tr>
<tr>
<td>Students matriculating in 1999–2000</td>
<td>$16,550</td>
<td>$8,275</td>
<td>$690</td>
</tr>
<tr>
<td>Students matriculating in 1998–99</td>
<td>$16,100</td>
<td>$8,050</td>
<td>$672</td>
</tr>
<tr>
<td>Students matriculating in 1997–98</td>
<td>$15,500</td>
<td>$7,750</td>
<td>$646</td>
</tr>
</tbody>
</table>

¹ Tuition indexed for five years  
² By special permission only

<table>
<thead>
<tr>
<th>Required Fees</th>
<th>Fall</th>
<th>Spring</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student activities³</td>
<td>$84.00</td>
<td>$42.00</td>
<td>$126.00</td>
</tr>
<tr>
<td>Athletic events</td>
<td>$100.00</td>
<td>$50.00</td>
<td>$150.00</td>
</tr>
<tr>
<td>College</td>
<td>$50.00</td>
<td>$25.00</td>
<td>$75.00</td>
</tr>
<tr>
<td>Student health fee</td>
<td>$148.00</td>
<td>$148.00</td>
<td>$296.00</td>
</tr>
<tr>
<td>Shuttle</td>
<td>$37.00</td>
<td>$37.00</td>
<td>$74.00</td>
</tr>
<tr>
<td>Information Technology (on-campus)</td>
<td>$200.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Total fees                    | $619.00| $148.00  | $767.00|

| Information Technology (off-campus) | $100.00 |        |        |

¹ Fifth-year students in professional degree programs and students working toward a second bachelor’s degree may pay a reduced student activities fee of $13.70, which covers the Student Association, Student Organizations Activity, University Court, and Honor Council portions of the activity fee, and elect not to pay the college fee.

<table>
<thead>
<tr>
<th>Room and Board</th>
<th>Annual</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room</td>
<td>$4,450</td>
<td>$2,225</td>
</tr>
<tr>
<td>Board</td>
<td>$2,980</td>
<td>$1,490</td>
</tr>
</tbody>
</table>

Any undergraduate who withdraws or takes an approved leave of absence and then gains readmission to the university pays the tuition applicable at their matriculation, plus annual Consumer Price Index increases for a period not to exceed five years. Starting with fall 2001 matriculants, the index period is not to exceed five years. After five/six years, students pay the tuition applicable to the entering class.

**Refund of Tuition and Fees**

Students who withdraw during the first two weeks of the semester are not charged tuition or fees for that semester. Students who withdraw during the third week must pay 30 percent of the semester’s tuition, receiving a 70 percent refund. The amount of the refund drops by 10 percent at the beginning of each successive week that passes before withdrawal until the ninth week, after which no refund is made. Federal regulations require a refund calculation for all students receiving Title IV funds. The length of time during which a refund must be calculated is up to 60 percent of the payment period (semester). If a student withdraws on or before the 60 percent point in time, a portion of the Title IV funds awarded to a student ( Pell Grant, Federal SEOG, Federal Perkins Loan, Federal Direct Subsidized, Unsubsidized, and Federal PLUS Loans, and the Texas LEAP Grant) must be returned, according to the provisions of the Higher Education Act as amended. The calculation of the return of these funds may result in the student owing a balance to the university and/or the Department of Education.

For students withdrawing after the second week of classes in a semester, fees or special charges (see pages 50–51) are not refunded. Similarly, students withdrawing or
taking leaves of absence in the spring semester do not receive a partial refund of fees paid for the full year. Students without a full-time job or who cannot be dismissed for good cause. Students who receive approval to enroll with a course load of fewer than 12 hours during the first nine weeks of the semester may be entitled to a tuition rebate based on the same refund schedule used for withdrawing students. Any such rebate depends on the actual date by which the registrar’s office processes the relevant drop form.

Students unable to resolve with the cashier’s office any request for special consideration in connection with waivers, refunds, or adjusted payments on tuition, fees, and other charges should forward their appeals to the vice president for enrollment services. Resolution of waivers and refunds for room and board charges require the approval of the vice president for finance and administration.

Living Expenses

Residence fees cover dining hall costs and residence maintenance. They are established each year as needs dictate. For 2002–2003, the annual room and board charge for residence in a residential college is $7,430. This charge includes the room and all the meals eaten during the year.

Housing. About 77 percent of Rice undergraduates live in the on-campus residential colleges. Information about the residential colleges and room application forms accompany the notice of admission sent to each new undergraduate. Room reservations cannot be made before notification of admission. Further information on housing in the residential colleges is available from the Office of Student Affairs, and information on off-campus housing is provided by the Office of Academic Advising.

When they receive their residential college room assignments for the academic year to follow, students must sign a housing agreement. To reserve their space, current students must sign a housing agreement by the date established in their respective colleges but no later than April 15. New students must make a $50 deposit before May 1. These nonrefundable deposits are applied to the following semester’s room and board charges.

Board. Meals are served cafeteria-style and are all-you-care-to-eat. The colleges provide three meals per day Monday through Friday, breakfast and lunch on Saturday, and lunch and dinner on Sunday. Meals are not served during the Thanksgiving holiday, and family emergencies are treated on a case-by-case basis.

Payments and Refunds. Students may pay their residence fee in installments. The exact amounts and due dates appear in the Residential Housing Agreement. Students moving out of the college for any reason receive a refund (or a credit) of the reduced balance of board charges but must still pay the full room charge for the entire academic year. Possible exceptions in the case of academic suspension, Rice-sponsored study abroad, and family emergencies are treated on a case-by-case basis.

Special Charges

The following charges are separate from the regular fees. For charges due to late registration or course changes made after the deadlines, see Registration (page 28–30).

<table>
<thead>
<tr>
<th>Fee Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preceptorship per semester</td>
<td>$185.00</td>
</tr>
<tr>
<td>Internship per semester</td>
<td>$185.00</td>
</tr>
<tr>
<td>Enrollment continue fee (Study Abroad) per semester</td>
<td>$125.00</td>
</tr>
<tr>
<td>Newspaper fee</td>
<td>$9.00</td>
</tr>
<tr>
<td>Telecommunications fee (on-campus students) per semester</td>
<td>$55.00</td>
</tr>
<tr>
<td>Late payment penalty</td>
<td>$70.00</td>
</tr>
<tr>
<td>Undergraduate application fee</td>
<td>$35.00</td>
</tr>
<tr>
<td>Part-time registration fee</td>
<td>$100.00</td>
</tr>
<tr>
<td>Orientation Week room and board</td>
<td>$205.00</td>
</tr>
<tr>
<td>Orientation Week room and board (coordinators)</td>
<td>$155.00</td>
</tr>
<tr>
<td>Orientation Week (College fee)</td>
<td>$190.00</td>
</tr>
<tr>
<td>Late registration fee</td>
<td>$95.00</td>
</tr>
<tr>
<td>Failure to pre-register fee</td>
<td>$45.00</td>
</tr>
<tr>
<td>Deferred payment plan late fee</td>
<td>$25.00</td>
</tr>
<tr>
<td>College withdrawal: suspension</td>
<td>$225.00</td>
</tr>
<tr>
<td>College withdrawal: breaking of lease</td>
<td>$625.00</td>
</tr>
<tr>
<td>Diploma fee: sheepskin</td>
<td>$85.00</td>
</tr>
<tr>
<td>Diploma fee: parchment</td>
<td>$25.00</td>
</tr>
<tr>
<td>Diploma mailing fee: domestic</td>
<td>$15.00</td>
</tr>
<tr>
<td>Diploma mailing fee: air mail</td>
<td>$21.00</td>
</tr>
<tr>
<td>Diploma mailing fee: facsimile</td>
<td>$5.00</td>
</tr>
<tr>
<td>Transcript fee</td>
<td>$5.00</td>
</tr>
<tr>
<td>Replacement ID</td>
<td>$10.00</td>
</tr>
<tr>
<td>Freshman parking permit</td>
<td>$150.00</td>
</tr>
</tbody>
</table>

Health Insurance

All Rice students must have health insurance. Students may purchase insurance for the 2002–2003 school year through the university program developed for Rice students at a yearly premium of $1,630 (Plan A) or $995 (Plan B). Coverage is effective from 12:01 A.M., August 15, 2002, until 12:01 A.M., August 15, 2003. Dependent coverage is also available. A description of the policy, application form, and waiver form can be found on the Web at http://studenthealthinsurance.rice.edu. Students should submit either the application or waiver by August 15 each year.

Education Certification Program Fees

Students enrolling in the student teaching apprenticeship or internship plans must pay a $185 registration fee for each semester. An additional $25 fee (paid to the School of Continuing Studies) is due for each summer school session.

Delinquent Accounts

No student in arrears of any financial obligation to Rice as of the last day of registration for any semester can register for classes. The university will not issue certificates of attendance, diplomas, or transcripts at any time for a student whose account is in arrears.

Students who have not made satisfactory arrangements with the cashier for payment of current charges or who have moved on campus without a proper room contract may be dismissed from the university.
Transcripts

Transcripts are issued on written request to the Office of the Registrar. The registrar does not issue transcripts without the consent of the individual whose record is concerned. The charge of $5 for each copy is payable in advance. Those requesting transcripts by mail should include payment with the request.

Financial Aid

The financial aid programs at Rice provide assistance to meet demonstrated need for university attendance for all admitted students. Through grants, endowments, low-interest loans, campus work opportunities, or a combination of these programs, Rice makes every effort to provide students and families sufficient assistance to meet their educational expenses. The financial aid program receives funding from many sources. Rice uses contributions from alumni and friends to establish and maintain scholarships and loan funds. Federal and state grants and work and loan programs also provide funds. Awards are based primarily on financial need and a computed Expected Family Contribution (EFC), although there are also attractive loan opportunities for students and families who have no need.

The university determines need for first-time students by having them register for the College Scholarship Service (CSS) PROFILE, and sending the PROFILE packet to CSS. Register for CSS PROFILE by calling 1-800-778-6888 or by visiting their website at www.collegeboard.com. CSS will mail you the PROFILE; complete and return it to CSS. Students may also complete the PROFILE online. The PROFILE number for Rice is 6609. First-time students also complete the Free Application for Federal Student Aid (FAFSA) and submit copies of student and parent income tax and W-2 forms.

The university determines need for continuing students by having them complete the FAFSA and the Rice Financial Aid Application; continuing students also submit student and parent 2002 income tax and W-2 forms. Returning students are not required to complete a PROFILE form.

“Need” is the amount required to meet the difference between each student’s total educational expenses and his or her family’s resources. Parents are expected to contribute according to their financial means, taking into account income, assets, home equity, number of dependents, and other relevant factors. Students are expected to contribute as well from their own assets and earnings, including appropriate borrowing against future earnings.

The brochure Financing Your Education explains the assistance programs in detail. Copies are available from the Office of Admission or the Office of Student Financial Services. The university also publishes budgets that realistically summarize student expenses, including living costs at home and on or off campus, personal expenses, and travel.

Need-Based Application Process

Rice University is a need-blind school. Applicants are admitted to the university regardless of their family’s ability to pay for college. Rice will meet 100% of financial need as determined by university calculations. Rice considers applicants for all appropriate assistance administered by the university, including grants, scholarships, loans, and work. Students receive notification of an offer once their financial aid file is complete. Student Financial Services provides financial assistance only for coursework sponsored through Rice University.

To apply for financial assistance, first time students (including Early Decision students) must submit the following:
- CSS PROFILE, priority date February 1
- Free Application for Federal Student Aid (FAFSA), priority date February 1
- Student and parent 2002 income tax and W-2 forms, priority date March 1

Continuing students must submit the following:
- FAFSA, priority date April 15
- Rice Financial Aid Application, priority date April 15
- Student and parent 2002 income tax and W-2 forms, priority date April 15

Decision

All freshman aid applicants will also be required to submit both the student’s and parent(s)’ 2002 federal income tax forms by May 1, 2003.

Financial aid offers are made annually. Payment terms are specified in the Financial Aid offer letter. Because financial circumstances change from year to year, Rice conducts an annual review of need and offers need accordingly. For this reason, continuing students must complete and return the Rice University Application for Financial Aid to the university and file the FAFSA every year that they seek assistance.

The university, from time to time, may adjust its methods of computing financial need or its policies regarding the types of financial assistance that it offers so as to meet the financial needs of the largest possible number of students. Therefore, the amount and type of financial aid may change from year to year, even when the student’s financial situation appears to remain relatively stable.

Types of Financial Aid and Assistance

Student Loan Funds. To assist students and parents with educational financing, the Office of Student Financial Services participates in the following programs:

- **Stafford Student Loan.** These are low-interest loans made to students, attending school on at least a half-time basis. Subsidized Stafford loans require financial aid eligibility, but unsubsidized Stafford loans are available to all students. These variable loans are capped at 8.25%.

- **Parent Loan for Undergraduate Students (PLUS loan).** The PLUS loan is a low-interest loan to parents or legal guardians of dependent undergraduate students. Eligibility is not based on demonstrated financial need. This variable loan is capped at 9%.

- **Federal Perkins Loan Program.** The Federal Perkins Loan Program provides long-term federal loans for U.S. citizens and permanent residents. The amounts offered vary according to financial aid eligibility. The Federal Perkins Loan is a 5% interest-free loan while the student is enrolled in school.

- **College Access Loan.** The College Access Loan (CAL) is designed to assist the student whose family experiences difficulty in meeting the Estimated Family Contribution (EFC) to qualify. To qualify, the student must be a Texas resident or a National Merit Scholarship recipient.

A few endowments for student loans have been established at Rice primarily as memorial tributes. These funds exist separately from the normal financial aid program. Rice uses them to make emergency loans to students experiencing unexpected financial problems or showing additional need beyond regular eligibility.

All applications for these loans must be submitted to the Office of Student Financial Services.
Student Employment Programs. Opportunities for employment are available to students, either on or off campus, during the academic year. Students are eligible to work under the Federal Work-Study Program or the Rice University Work Program. Students interested in employment should access the Student Financial Services web page at http://www.ruf.rice.edu/~fina/employmnet.htm.

Deferred Payment Plan. Rice offers a deferred payment plan to enable families to finance students’ educational costs. This plan divides each semester’s charge over four installments. Applications and details are available to eligible students each semester at the time of billing. Students arrange for deferred payment through the Cashier’s Office.

Vocational Rehabilitation
The Texas Rehabilitation Commission (TRC) provides assistance in paying tuition and nonrefundable fees for students who have certain disabling conditions. Once a TRC counselor approves their vocational objectives, students affected by orthopedic deformities, emotional disorders, diabetes, epilepsy, heart problems, and other disabling conditions are eligible for assistance. The TRC offers a range of services to help handicapped students become employable. Interested students should apply to the Texas Rehabilitation Commission.

Financial Aid Policy
Undergraduates may receive a Rice University Tuition Grant and Rice endowed funds for eight semesters. However, undergraduates may receive federal and state aid beyond eight semesters, but not to exceed Rice’s quantitative maximum.

Satisfactory Progress Policy for Financial Aid Recipients. The Higher Education Act of 1965, as amended by Congress, mandates that institutions of higher education maintain minimum standards of “satisfactory progress” for students to receive financial aid.

Required Grade Point Average. Students at Rice are placed on financial aid probation if at the end of any semester they have either of the following:
• A cumulative grade point average that is less than 1.67
• A grade point average for that semester that is less than 1.67

The period of probation extends to the end of the next semester that the student is enrolled at the university.

Except for those completing their first semester at Rice, students are ineligible for financial aid if at the end of any semester they earn either of the following:
• Grades that would result in financial aid probation for a third time
• A grade point average that is less than 1.00 for that semester

The period of financial aid ineligibility normally lasts at least one semester. Students who regain financial aid eligibility will lose it again if in any succeeding semester they fail to achieve either of the following:
• A cumulative and semester grade point average of at least 1.67
• A semester grade point average of at least 2.00

Ineligibility a second time results in at least two semesters without aid. Normally students receive no further aid after a third ineligibility.

Required Semester Hours. Students failing to make “satisfactory progress” in course work may become ineligible for aid. Students must earn:
• At least 18 semester hours credit by the end of the first academic year
• At least 44 hours by the end of the second year
• At least 70 hours by the end of the third year
• At least 96 hours by the end of the fourth year

Students not receiving a bachelor’s degree within the 120 hours maximum allowance will need to appeal to the director of student financial services for continued financial assistance.

The academic year commences with the first day of classes of the fall semester and continues to the first day of classes the following fall. Students denied financial aid because of insufficient semester hours regain eligibility only when they complete enough credits, including incomplete courses, to make up the shortage.

Return of Title IV Funds. Students who receive federal funds as part of their aid packages and do not complete an academic term may be subject to returning a portion of those funds. Contact Student Financial Services for information about the “Return of Title IV Funds” policy.

Termination of Aid and Appeal. The Office of Student Financial Services sends written notification to students qualifying for financial assistance who have not made minimum “satisfactory progress” and whose aid therefore is being terminated. At the end of the fall semester, the notice is sent to the student’s college. At the end of the spring semester, the notice is sent to the most recent permanent address provided to the registrar by the student. In both cases, the office considers the notifications, once sent, to be delivered.

Any student ruled ineligible for financial aid due to lack of “satisfactory progress” may appeal such action to the director for student financial services. Students should send their appeals in writing to the director, who may take into account mitigating circumstances.

Regaining Eligibility. To regain eligibility, students must address a letter of petition to the director of student financial services, following the procedures for the readmission of suspended students; see Readmission After Suspension (page 37). Suspended students readmitted by the Committee on Examinations and Standing need not petition the director of student financial services.

Honor Societies
Honor societies at Rice include the following:

Phi Lambda Upsilon—national honorary chemical society promoting high scholarship and original investigation in all branches of pure and applied chemistry (Rice chapter: 1926)
Phi Beta Kappa—founded in 1776 at the College of William and Mary to recognize intellectual achievement and the love of learning among students in the liberal arts and sciences (Rice chapter: March 1, 1929)
Pi Delta Phi—organized to interest French students in competing for high standing in scholarship ( Theta chapter at Rice: May 1930)
Society of Sigma Xi—for the promotion of research in science (Beta of Texas chapter at Rice: March 23, 1938)
Tau Beta Pi Association—organized to interest engineering students in competing for high standing in scholarship (Gamma of Texas chapter at Rice: December 18, 1940)
Residential Colleges

All undergraduate students at Rice, whether they live on campus or not, are members of one of nine residential colleges. All colleges are coeducational.

Each college has faculty masters who live in a house next to the college. Reporting to the vice president for student affairs, the masters have overall responsibility for all aspects of student life in the college, especially for encouraging broad cultural and intellectual interests and for promoting self-discipline and effective self-government within the college. Upon agreement, the students and masters invite other members of the Rice faculty to become resident and nonresident associates of the college. Faculty associates act as advisers to the students and participate in the various activities of the college. Colleges also have nonfaculty university associates and community associates drawn from various professions in the Houston area.

Each college exists as a self-governing group of students. The elected officers and representatives are responsible to the masters and to the college membership for:

- Directing the college’s cultural, social, and athletic activities
- Expenditure of college funds
- Maintaining order in the college

While uniformity among the colleges has never been sought and each college has developed its own particular interests and character, all seek to foster fellowship among their members and a mature sense of honor, responsibility, and sound judgment.

College Assignment. Each undergraduate, upon acceptance by the university, is designated a member of one of the colleges. Two students entering Rice for the first time may request assignment to the same college, but they may not designate which college. New students may also request membership in the same college as a close relative. Except for these cases, students have no individual choice of college.

Room and Board. College buildings include a dining hall and public rooms, which are available to both resident and nonresident members, and living quarters for approximately 215 students from all classes and all academic disciplines.

At present, Rice has residence in its on-campus residential colleges for about 75 percent of its undergraduate students. Although most of the students who want to live in the colleges can be accommodated, demand usually exceeds the available number of rooms. The university makes every effort to provide housing in the colleges for all incoming first-year students who wish to live on campus, but space cannot be guaranteed.

Continuing students draw for rooms according to the priority system established in each college. No student is required to live on campus; however, those members of the colleges who live off campus are encouraged to eat in their colleges and to participate in college activities.

The College Food Service provides à la carte meals, with the exception of prepaid dinners. Its other services include:

- Assistance with special diets prescribed by a physician
- Sack lunches for students who must miss a meal due to a job conflict
- Sick trays for students when requested by the Student Health Service
- Alternate menu entrees, whenever possible, to accommodate students’ religious practices

For more information on room and board, see Living Expenses (page 50).

Student Government

All undergraduates are members of the Rice Student Association, which is governed through the Student Senate. The senate includes the president, two vice presidents, the secretary, the treasurer, the nine college presidents, and nine college senators.

Alleged violations of university or college rules are handled in accordance with the Code of Student Conduct. In most cases, original jurisdiction belongs to student courts. Students may appeal verdicts to the college masters or the assistant dean for student affairs. The student-staffed Honor Council conducts hearings and trials for alleged offenses against the honor system (see page 8). Rice retains ultimate authority in all matters of discipline and over all actions that affect its educational function or the safety and well-being of members of the university community.

Award Presentations. The Rice Student Association presents two coveted awards annually, one to a student and one to a faculty or staff member. The Rice Service Award, a memorial to Hugh Scott Cameron, first dean of students at Rice, is awarded to currently enrolled or former members of the association who have rendered distinguished service to the student body. The Mentor Recognition Award recognizes extraordinary service to the student body by a current member of the faculty or staff. A committee of faculty and students appointed by the association makes the selections.

Office of Student Activities

The Office of Student Activities, located in the Rice Memorial Center cloisters, oversees the activities of various campuswide student organizations. It also handles student requests for facilities and party permits, and it coordinates leadership development programs, including the annual leadership retreat and symposium.

Principal student organizations include the following:

- Rice Student Association, the student governing body
• Rice Program Council, which sponsors various events of current interest to the student body as well as social functions
• KTRU, the student-run radio station, operating 24 hours, seven days a week, on 91.7 FM
• Student publications (e.g., Rice Thresher, the student newspaper; Campanile, the yearbook; The Rice Undergraduate: The Annual Academic Review, a collection of peer-reviewed student papers; and University Blue, a literary and visual arts publication)

A large number of student organizations address special student interests, such as the Black Student Association, the Hispanic Association for Cultural Education at Rice, the Chinese Student Association, Rice Young Democrats, and Rice Republicans. There also are numerous clubs for such sports as sailing, rugby, lacrosse, volleyball, and soccer. Other special-interest groups include a premed society, forensic society, juggling club, and vegetarian club.

Many organizations are associated with special academic and professional disciplines, such as foreign language clubs, honor societies, and student affiliates of the American Chemical Society, the American Society of Civil Engineers, and the American Society of Mechanical Engineers.

The Rice Players, an extracurricular theater group of Rice students, faculty, and staff, present at least four productions each year and welcome participation by anyone interested in any aspect of theater production or management.

Rice students also maintain affiliations with a number of religious organizations. These include, but are not limited to, the Baptist Student Union, Canterbury Association, Catholic Student Association, Christian Science Organization, Hillel Society, Lutheran Student Association, Intervarsity Christian Fellowship, and the Wesley Foundation. Many of these clubs are assisted by local clergy who form the Joint Campus Ministry.

The Office of Student Organizations on the second floor of the Ley Student Center houses mailboxes for all student organizations. There is a student organization work space in the basement of the Rice Memorial Center that has office space, storage, and computers for student organization use.

Community Involvement Center/Rice Student Volunteer Program

Housed in the cloisters of the Rice Memorial Center, the Community Involvement Center works to develop a culture of service within the university by functioning as an advocate for community service, social responsibility, and an increased awareness of social and community issues. The center acts as a clearinghouse for resources and referrals involving local, national, and international community agencies and service opportunities. By making educational programs and information available, the center fosters a lifelong commitment to service among students, faculty, and staff. It also organizes alternative semester break service trips, volunteer fairs, beach cleanups, and other activities. The 10 student service organizations supported by the Community Involvement Center include Rice Habitat for Humanity, youth mentoring and tutoring programs, tutoring in English as a second language, Best Buddies, and the Rice Student Volunteer Program.

By heightening student awareness of community needs and generally raising social consciousness, the Rice Student Volunteer Program (RSVP) has organized volunteer projects for Rice students, faculty, and staff since 1985. The largest event of each semester is Outreach Day, a Saturday when approximately 500 students volunteer with more than 30 nonprofit agencies throughout the Houston area, learning how to take thoughtful action to build a stronger, more just community. With an office in the cloisters of the Rice Memorial Center, RSVP invites each student’s involvement as an officer, a college representative, a committee member, a project organizer, or an interested participant in any RSVP event.

Intercollegiate Speech and Debate

Consistently ranked in the top 10 nationally, the George R. Brown Forensic Society sponsors competition in the categories of Individual Events, Lincoln–Douglas, and Parliamentary Debate. The society provides students with the chance to hone their public speaking skills and to qualify for competition both at the American Forensic Association National Individual Events Tournament and at the National Parliamentary Debate Championships. Recognizing the importance of developing strong communication skills, the society has an open admissions policy, inviting students with little or no previous experience as well as those with extensive high school backgrounds to become members of one of the most successful teams at Rice.
Introduction

Since Rice opened in 1912, the university has recognized the importance of graduate study and research as a principal means of advancing knowledge. The first Doctor of Philosophy degree was awarded in 1918 in mathematics. Since that time, the graduate area has expanded to encompass the schools of architecture, engineering, humanities, management, music, natural sciences, and social sciences, as well as interdepartmental areas. The graduate program has steadily increased over time; Rice now enrolls approximately 1,700 graduate students and offers advanced degrees in 31 fields of study.

Graduate programs lead to either research or professional degrees. Research programs generally require the completion of a publishable thesis that represents an original and significant contribution to the particular field of study. Research degrees include the Doctor of Philosophy (Ph.D.), Doctor of Architecture (D.Arch.), Master of Arts (M.A.), and Master of Science (M.S.).

Professional programs provide advanced course work in several disciplines but do not generally include independent research. These programs lead to degrees in most of the major schools including many engineering disciplines. (See the charts on pages 64–67 for a complete listing of degrees offered.)

All degrees conferred by the university are awarded solely in recognition of educational attainments and not as warranty of future employment or admission to other programs of higher education.

For additional information on graduate programs and requirements, please go to http://rgs.rice.edu.

Graduate Degrees

Research Degrees

For general information on advanced degree work at Rice, see Requirements for Graduate Study (pages 68–70). Specific requirements for advanced research degrees in each field of study appear in the appropriate departmental pages (pages 85–251). Students seeking additional material should contact the appropriate department chair (see Department Information Chart on pages 74–77).

Ph.D. Programs. The Ph.D. degree is awarded for original studies in the departments listed in the Graduate Degree and Interdepartmental and Cooperative Programs Charts (pages 64–67); in architecture, the equivalent degree is the D.Arch. Candidates receive a Ph.D. degree after successfully completing at least 90 semester hours of advanced study and concluding an original investigation that is formalized in an approved thesis. As final evidence of preparation for this degree, the candidate must pass a public oral examination. (See also Candidacy, Oral Examinations, and the Thesis on pages 70–72.) The residency requirement for the doctorate is four semesters of full-time study at the university.

Master’s Programs. The M.A. degree is available in the departments listed in the Graduate Degree and Interdepartmental and Cooperative Programs Charts (pages 64–67), including certain scientific fields of study. The M.S. degree is offered in the engineering and science fields also listed in the chart. Candidates may undertake the M.Arch., M.Arch. in Urban Design, and M.Mus. degrees as research degrees by adopting the thesis option. Candidates receive a master’s degree after completing at least 30 semester hours of study (including thesis hours), 24 hours of which must be taken at Rice. Master’s programs require original work reported in a thesis and a public examination. Most students take three or four semesters to complete a master’s degree (some programs may require more time). Students receiving a master’s degree must be enrolled in a graduate program at Rice University for at least one semester.

Students may also pursue a nonthesis degree in certain departments. This degree would be based on alternative departmental requirements and would include, but not be limited to, the following:

- 30 semester hours of study
- 24 semester hours must be at Rice University
- Minimum residency is one semester of full-time study
- At least 15 hours of course work must be at or above the 500 level
- All courses must be in the relevant field

In certain departments, students may receive a master’s degree (called an Automatic Master’s) when they achieve candidacy for the doctoral degree. Students seeking a master’s degree in this manner must submit a petition for the degree, signed by their department chair, to the Office of the Vice Provost for Research and Graduate Studies by February 1 of the year in which the degree is to be awarded. (See also Candidacy, Oral Examinations, and the Thesis on pages 70–72.)

Professional Degrees

Rice University offers advanced degree programs to prepare students for positions in a number of professional fields. The professional degrees listed in the Introduction (page 62) appear in the Graduate Degree and Interdepartmental and Cooperative Programs Charts (pages 64–67). In some departments, the professional degree also prepares the student for a doctoral-level program. All professional degrees are master’s degrees with one exception: Candidates earn the D.M.A. after concluding a program of advanced music study.

For general information on advanced degree work at Rice, see Requirements for Graduate Study (pages 68–70). Requirements for professional degrees include the successful completion of 30 semester hours or more of upper-level courses (at the 300 level or higher) with at least 24 hours taken at Rice. Additional information and specific requirements for individual degrees appear, listed by department, in the Undergraduate Degree Chart (pages 25–27). Program information and application materials are also available from the department chairs (see Department Information Chart on pages 74–77).

Admission into a professional program is granted separately from admission into a research or thesis program. Students who wish to change from a thesis program to a professional degree program must petition their department in writing. Upon recommendation of the department and approval by the dean’s office, the request is sent to the Office of Research and Graduate Studies for consideration and final approval. If approved, students who received tuition waivers while enrolled in the thesis program will be expected to repay the tuition before their professional degrees are awarded. Professional degree programs terminate when the degree is awarded. Students who wish to continue graduate study after completing a professional program must reapply for admission into a research program.
<table>
<thead>
<tr>
<th>School Department</th>
<th>Graduate Degrees Offered</th>
<th>Additional Options or Areas of Concentration (within majors)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCHOOL OF ARCHITECTURE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.Arch., M.Arch. in Urban Design, D.Arch.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEORGE R. BROWN SCHOOL OF ENGINEERING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bioengineering</td>
<td>M.S., Ph.D.</td>
<td>Biochemical engineering, biological systems modeling, biomaterials, biomedical lasers, cellular and molecular engineering, controlled release technologies, metabolic engineering, phytoremediation, spectroscopy, systems engineering and instrumentation, thrombosis, tissue engineering, and transport processes.</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>M.Ch.E., M.S., Ph.D.</td>
<td>Thermodynamics and phase equilibria, chemical kinetics and catalysis, optimization and process control, rheology and fluid mechanics, polymer science, biomedical engineering, enhanced oil recovery and cleanup of groundwater aquifers, and biochemical reactor engineering.</td>
</tr>
<tr>
<td>Civil and Environmental Engineering</td>
<td>M.C.E., M.E.E., M.S., Ph.D.</td>
<td>Civil engineering: structural dynamics and control, structures and mechanisms, reinforced and prestressed concrete, geotechnical engineering, computer-aided engineering, probability and random vibrations, reliability of systems, and solid mechanics. Environmental science: environmental biology, chemistry, toxicology, geology, and planning; surface and groundwater hydrology; water and wastewater treatment; and urban and regional air quality. Environmental engineering: hydrology and water resources engineering; water and wastewater treatment, design, and operation; and numerical modeling.</td>
</tr>
<tr>
<td>Computational and Applied Mathematics</td>
<td>M.C.A.M., M.C.S.E., M.A., Ph.D.</td>
<td>Numerical analysis, operations research, and differential equations; additional program in computational science and engineering (see Interdepartmental and Cooperative Programs).</td>
</tr>
<tr>
<td>Computer Science</td>
<td>M.C.S., M.S., Ph.D.</td>
<td>Algorithms and complexity, artificial intelligence and robotics, bioinformatics, compilers, distributed and parallel computation, graphics and visualization, operating systems, and programming languages.</td>
</tr>
<tr>
<td>Electrical and Computer Engineering</td>
<td>M.E.E., M.S., Ph.D.</td>
<td>Bioengineering, communication and signal processing, computer architecture and networking, electro-optics, and device physics.</td>
</tr>
<tr>
<td>SCHOOL OF HUMANITIES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art and Art History</td>
<td>No graduate degree offered</td>
<td>History of art; options in classical archaeology and media studies.</td>
</tr>
<tr>
<td>English</td>
<td>M.A., Ph.D.</td>
<td>British and American literature and literary theory.</td>
</tr>
<tr>
<td>French Studies</td>
<td>M.A., Ph.D.</td>
<td>French literature, language, and culture.</td>
</tr>
<tr>
<td>German and Slavic Studies</td>
<td>No graduate degree offered</td>
<td>German and German cultural studies.</td>
</tr>
<tr>
<td>Hispanic and Classical Studies</td>
<td>M.A.</td>
<td>Spanish language and literature.</td>
</tr>
<tr>
<td>History</td>
<td>M.A., Ph.D.</td>
<td>U.S., European, and other history.</td>
</tr>
<tr>
<td>Kinesiology</td>
<td>No graduate degree offered</td>
<td></td>
</tr>
<tr>
<td>Linguistics</td>
<td>Ph.D.</td>
<td>Anthropological, applied, cognitive, field, functional or discourse, and English, German, or Romance linguistics; second language acquisition; and language typology and universals.</td>
</tr>
<tr>
<td>Philosophy</td>
<td>M.A., Ph.D.</td>
<td>Specialization in medical ethics.</td>
</tr>
<tr>
<td>Religious Studies</td>
<td>M.A., Ph.D.</td>
<td>Religion and contemporary cultures; scriptural interpretation; ethics and philosophy of religion; mysticism, psychology, and religious practices.</td>
</tr>
<tr>
<td>JESSE H. JONES GRADUATE SCHOOL OF MANAGEMENT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.B.A./M.B.A./Master of Engineering M.B.A./M.D. (with Baylor College of Medicine) M.B.A. for Executives</td>
<td>M.B.A. is a general management degree; however, students may have informal concentrations in the following areas: accounting, entrepreneurship, finance, general management, international business, information technology, marketing, operations management, organizational behavior and human resource management, healthcare management, and strategic management and planning; joint nonthesis degree option with all engineering disciplines.</td>
<td></td>
</tr>
<tr>
<td>SHEPHERD SCHOOL OF MUSIC</td>
<td>B.Mus./M.Mus., M.Mus., D.M.A.</td>
<td>Composition, choral and instrumental conducting, historical musicology, performance, and music theory.</td>
</tr>
<tr>
<td>WIESS SCHOOL OF NATURAL SCIENCES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biochemistry and Cell Biology</td>
<td>M.A., Ph.D.</td>
<td>Biochemistry, biophysics, developmental biology, cell biology, genetics, molecular biology, neurobiology, structure and function of nucleic acids and proteins, regulatory processes, biochemistry of lipids, enzymology, NMR and crystallography, cellular regulation, oxygen and electron transport, molecular genetics of plants, animals, fungi, bacteria, and bacteriophage.</td>
</tr>
<tr>
<td>Chemistry</td>
<td>M.A., Ph.D.</td>
<td>Organic chemistry, inorganic chemistry, physical chemistry, nanotechnology, biological chemistry, and theoretical and computational chemistry.</td>
</tr>
<tr>
<td>Ecology and Evolutionary Biology</td>
<td>M.A., Ph.D.</td>
<td>Biogeochemistry, wetland ecology, plant community and population ecology, insect diversity and community structure, behavioral ecology, sociobiology, and molecular evolution.</td>
</tr>
</tbody>
</table>
Earth Science  
M.A., Ph.D.  
Marine geology and geophysics; sedimentology, stratigraphy, paleoceanography, palaeoclimatology, evolution of continental margins and carbonate platforms; tectonics, neotectonics, tectonophysics, geodynamics, mantle processes, planetology, and space geodesy; remote sensing, potential fields, reflection and lidar/remote sensing seismology, wave propagation and inverse theory; kinetics of fluid-solid interactions, low T aqueous geochemistry, petrology, and high T geochemistry

Mathematics  
M.A., Ph.D.  
Differential and algebraic geometry, ergodic theory, partial differential equations, probability and combinatorics, real analysis, complex variables, and geometric and algebraic topology

Physics and Astronomy  
M.A., M.S., Ph.D.  
Atomic and molecular physics, biophysics, particle physics, condensed matter physics, surface physics, space physics, astronomy, and theoretical physics

SCHOOL OF SOCIAL SCIENCES
Anthropology  
M.A., Ph.D.  
Archaeology and social/cultural anthropology
Economics  
M.A., Ph.D.  
Econometrics, economic development, economic theory, industrial organization and regulation, international trade and finance, labor, macroeconomics/monetary theory, and public finance
Political Science  
M.A., Ph.D.  
American government, comparative government, and international relations
Psychology  
M.A., Ph.D.  
Cognitive-experimental psychology and industrial-organizational/social psychology, with tracks in engineering psychology, human–computer interaction, and neuropsychology

Interdepartmental and Cooperative Programs
Opportunities for graduate study are available in a number of interdisciplinary areas. The advanced degree programs listed in the Interdepartmental and Cooperative Programs Chart (below) are administered by the participating Rice departments. They represent fields of study in rapidly developing areas of science and engineering or those areas subject to multiple investigations and interests. Rice has also established ties with other Houston universities and the Texas Medical Center to enable graduate students to receive training in computational biology research, to earn separate degrees simultaneously, or to focus their doctoral study on the specialized field of medical ethics.

INTERDEPARTMENTAL AND COOPERATIVE PROGRAMS CHART
<table>
<thead>
<tr>
<th>Program</th>
<th>Grades Offered</th>
<th>Departments/Areas of Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERDEPARTMENTAL PROGRAMS</td>
<td></td>
<td>Department (s) in physics, chemistry, electrical and computer engineering, mechanical engineering and materials sciences, bioengineering, computational and applied mathematics, and physics and astronomy; sciences that underlie important new and emerging technologies. Contact: Rice Quantum Institute, 713-348-6356 or <a href="mailto:quantum@rice.edu">quantum@rice.edu</a></td>
</tr>
<tr>
<td>Computational Science and Engineering</td>
<td>Master’s, Ph.D.</td>
<td>Modern computational techniques and use of powerful, new computers in research, development, and design involving the following departments: computational and applied mathematics, biochemistry and cell biology, geology and geophysics, computer science, chemical engineering, electrical and computer engineering, and statistics. Contact: 713-348-4805 or <a href="mailto:caam@caam.rice.edu">caam@caam.rice.edu</a></td>
</tr>
<tr>
<td>Education Certification</td>
<td>M.A.T.</td>
<td>Secondary teaching certification in conjunction with B.A. in major field</td>
</tr>
<tr>
<td>Environmental Analysis and Decision Making</td>
<td>Master’s</td>
<td>Departments in computational and applied mathematics, statistics, civil and environmental engineering, chemistry, earth science, ecology and evolutionary biology, mechanical engineering and materials sciences, chemical engineering, sociology, electrical and computer engineering, management, and natural sciences. Contact: 713-348-3188 or <a href="mailto:profems@rice.edu">profems@rice.edu</a></td>
</tr>
<tr>
<td>Materials Science and Engineering</td>
<td>Master’s, Ph.D.</td>
<td>Departments in chemistry, electrical and computer engineering, mechanical engineering and materials sciences, chemical engineering, and physics. Contact: 713-348-4906 or <a href="mailto:ments@rice.edu">ments@rice.edu</a></td>
</tr>
<tr>
<td>Nanoscale Physics</td>
<td>Master’s</td>
<td>Departments in physics and astronomy, electrical and computer engineering, chemistry, management, and natural sciences. Contact: Professional Master’s Program: 713-348-3188 or <a href="mailto:profems@rice.edu">profems@rice.edu</a></td>
</tr>
<tr>
<td>Systems Theory</td>
<td>Master’s, Ph.D.</td>
<td>Departments in chemical engineering, mechanical engineering and materials sciences, economics, electrical and computer engineering, and mathematics. Contact: 713-348-4020 or <a href="mailto:elec@rice.edu">elec@rice.edu</a></td>
</tr>
<tr>
<td>Joint Programs in Biomedical Ethics</td>
<td>M.A., Ph.D.</td>
<td>Religious studies degree with the University of Texas Health Science Center at Houston. Contact: 713-348-5201 or <a href="mailto:reli@rice.edu">reli@rice.edu</a></td>
</tr>
<tr>
<td>Joint Program in Computational Biology</td>
<td>Training opportunities for Ph.D. students</td>
<td>Research in a lab setting, seminars and workshops, and access to advanced resources of W.M. Keck Center for Computational Biology (fellowships available); with Baylor College of Medicine and the University of Houston. Contact: 713-348-4752 or <a href="mailto:bioc@rice.edu">bioc@rice.edu</a></td>
</tr>
<tr>
<td>Joint Programs with Medical Colleges</td>
<td>M.D./Ph.D., M.D./M.A., M.D./M.S.</td>
<td>Combined M.D. and advanced research degree for research careers in medicine; with Baylor College of Medicine. Contact: 713-348-5869 or <a href="mailto:bioc@rice.edu">bioc@rice.edu</a></td>
</tr>
</tbody>
</table>

Admission to Graduate Study
Graduate study is open to a limited number of extremely well-qualified students with a substantial background in their proposed field of study (this usually, though not always, means an undergraduate major in the field). Each department determines whether applicants have enough preparation to enter a given program, emphasizing the
quality of their preparation rather than the particular academic program they completed or the credits they earned.

Applicants for admission to graduate study should either contact the chair of the appropriate department for application forms and relevant information about the program or visit the department’s website for online application information. The Graduate Studies website, http://rgs.rice.edu, also has links to the graduate departments’ websites. The Department Information Chart (pages 74–77) lists department chairs with department phone/fax numbers and e-mail addresses. Applicants should send all application materials, including transcripts and test scores, to the department chair.

**Application Process.** An application for graduate study should include the completed application form, the application fee, transcript(s), recommendations, and writing samples, if required. Some departments require scores on the aptitude portion of the Graduate Record Examination (GRE) or the Graduate Management Admission Test (GMAT) and an appropriate advanced test; these should be sent directly to the admitting department.

To make sure scores are available when admission decisions are normally made, applicants should take the GRE by the December before the fall for which they are applying. The application deadline for the fall semester is February 1. Some departments, however, may specify an earlier deadline, and departments may occasionally consider late applications.

Admission depends on students’ previous academic records, available test scores, and letters of reference from scholars under whom they have studied. Writing samples, portfolios, or statements of purpose may also be required. In general, applicants should have at least a 3.00 (B) grade point average in undergraduate work. Some departments require that applicants take the GRE or GMAT. See individual departmental listings for specific requirement information. Applicants whose native language is not English must take the TOEFL test and score at least 600 on the paper-based TOEFL or score at least 250 on the computer-based TOEFL. For those students who choose to take the IELTS in lieu of TOEFL, the minimum required score is 7.

**Academic Regulations**

**Requirements for Graduate Study**

Graduate students must meet the following minimums, deadlines, and course or grade requirements to graduate in good standing from the university. Some departments may have stricter policies and/or requirements.

- **Residency**—Master’s students must complete at least one semester enrolled in a graduate program at Rice University. Ph.D. students must be enrolled at least four semesters in full-time study at Rice University.

- **Full-time study**—Semester course load for full-time students is 9 hours, or more as required by specific departments. Graduate programs at Rice generally require full-time study.

- **Part-time study**—Admission of part-time students requires departmental permission, and students must register for at least 3 hours in a semester. All time-to-degree requirements apply to part-time students.

- **Time to degree**—Ph.D. students are required to complete their program, including thesis defense, within ten years of initial enrollment in the degree program. Masters students are required to complete their program, including thesis defense, within five years of initial enrollment. In both cases, students have a limit of six additional months from the date of defense to deposit their theses in the Office of Graduate Studies. These time bounds include any period in which the student was not enrolled or enrolled part-time, for whatever reason.

  - **Time to candidacy**—Ph.D. students must be approved for candidacy before the beginning of the ninth semester of their residency at Rice. Masters students must be approved for candidacy before the beginning of the fifth semester of their residency at Rice.

  - **Time to defense**—Ph.D. students must defend their theses before the end of the 16th semester of their residency at Rice. Masters students must defend their theses before the end of the eighth semester of their residency at Rice.

  - **Time to submission of written thesis**—After candidates successfully pass the oral examination in defense of the thesis, they must submit two signed copies of the thesis to the Office of Graduate Studies no later than six months from the date of the oral examination.

- **Credit for previous degrees**—For students who enter a doctoral program with a master’s degree, completed at Rice or elsewhere, departments should determine the amount of previous work, if any, that will be counted from the master’s degree at issue toward the doctoral degree. Any such credit of one semester or more toward doctoral requirements will result in an equal reduction of the time allowed for (1) the achievement of candidacy, (2) the defense of the Ph.D. thesis, and (3) the total time to the doctoral degree. The maximum credit allowed for students with master’s degrees from Rice will be six semesters, and the maximum credit allowed for students with master’s degrees from outside Rice will be two semesters.

- **Minimum hours**—Students must register for at least 3 hours in a semester.

- **Course registration**—Students may register for courses of study and drop or add courses only with the approval of their adviser or the department chair.

- **Deadlines**—Students must observe all deadlines listed in the Academic Calendar (pages vi–x).

- **Grades**—In order to graduate, students must achieve at least a B (2.67) grade point average in courses counted toward the graduate degree. Some programs and departments have more stringent standards. To compute grade point averages, the credit attempted in semester hours for each course and the points for the grade earned (from A = 4.00 to F = 0.00) are multiplied, then the products (one for each course) are added together and the sum is divided by the total credits attempted. See also Probationary Status (pages 72–73).

  - **Pass/Fail**—All students, except Class III students, may take course(s) Pass/Fail outside their department. They must file a course as Pass/Fail no later than the end of the 10th week of classes; however, they may later convert a Pass/Fail to a graded course by filing the appropriate paperwork with the registrar. Students should be aware that while a grade of P does not affect their Grade Point Average, a grade of F does.

- **Satisfactory/Unsatisfactory**—Some departments may assign a grade of S or U. Students should be aware that while a grade of S or U does not affect their Grade Point Average, no credit will be awarded if a grade of U is received.

- **Departmental duties**—In most research degree programs, students must undertake a limited amount of teaching or perform other services as part of their training. Assigned duties should not entail more than 10 hours per week, and are based over the semester, or extend over more than eight semesters.

- **Employment**—Students receiving a stipend may accept employment only with the approval of the department. Students working for more than 20 hours per week are not normally eligible for full-time status.
Continuous enrollment—Students must maintain continuous program involvement and enrollment unless granted an official leave of absence. See Leaves or Withdrawals (page 72) for more information.

Candidacy, Oral Examinations, and the Thesis

Approval of Candidacy. Candidacy marks a midpoint in the course of graduate education. Achieving candidacy for the Ph.D. implies that a graduate student has: (a) completed required course work, (b) passed required exams to demonstrate his/her comprehensive grasp of the subject area, (c) demonstrated the ability for clear oral and written communication, and (d) shown the ability to carry on scholarly work in his/her subject area. Requirements for achieving candidacy for the thesis Masters degree are determined at the departmental level. Students enrolled in research degree programs submit their petitions for candidacy for a master’s or doctoral degree through the department chair to the vice provost for research and graduate studies. In the petition sent to the vice provost, the department chair identifies the student’s thesis director, recommends a thesis committee, certifies that the applicant has fulfilled the departmental requirements, and provides a transcript as evidence that work completed within the department is of high quality.

Students must file their applications for approval of Ph.D. and M.A./M.S. candidacy in the Office of Graduate Studies before November 1 for mid-year conferral and before February 1 for May commencement. Students may take the final oral examination in defense of their thesis only after the vice provost for research and graduate studies approves their candidacy petition. Students must be approved for candidacy before the beginning of the ninth semester of their residency at Rice. Master’s students must be approved for candidacy before the beginning of the fifth semester of their residency at Rice.

Thesis Committee. The thesis committee administers the oral examination for the student’s thesis defense and has final approval/disapproval authority and responsibility for the written thesis.

A thesis committee comprises at least three members. Two, including the committee chair, must be members of the student’s department faculty; in doctoral thesis committees, one member must be from another department within the university. At least three members of the committee must meet one of the following requirements:

• Tenured or tenure-track members of the Rice faculty
• Research faculty holding the rank of faculty fellow, senior faculty fellow, or distinguished faculty fellow
• Faculty who have been certified as thesis committee members by the vice provost for research and graduate studies

The committee chair need not be the thesis director. The chair, however, must be either a tenured or tenure-track member of the major department or a research faculty member of the major department. Additional members of the committee, who may or may not meet the above criteria, may be selected with the approval of the department chair. These would be in addition to the three required members.

Candidates are responsible for keeping the members of their committee informed about the nature and progress of their research. They also must establish a schedule for thesis completion and review. The members of the committee, in turn, should review the thesis in a timely way, approving a preliminary form of the thesis before scheduling the oral examination.

Oral Examination in Defense of Thesis. The public oral defense of a thesis is intended to be an examination of a completed body of work and should be scheduled only when the dissertation is essentially completed. The defense should be scheduled by the student after consultation with the thesis adviser, who agrees that the thesis is completed and ready to be defended. A candidate must be enrolled in the semester in which his or her oral examination is held. For the purpose of the oral defense only, enrollment in a semester is considered valid through the Friday of the week prior to the end of the week of classes of the following semester.

At least one copy of the thesis must be available in the departmental office at least two calendar weeks prior to the date of the oral defense. Oral examinations for the doctoral degree must be announced in Rice News at least one week in advance. Oral examination announcements can be submitted to Rice News by entering the information into the RiceInfo online events calendar. (Specific instructions and the password needed for a calendar submission should be requested by sending e-mail to graduate@rice.edu when the student has set the date for the defense. The words “Rice News defense announcement” need to appear in the subject line of the e-mail.) When the event is entered into the events calendar, an automatically generated e-mail will be sent to Rice News with the information for the Rice News calendar.

Students should note that material printed in Rice News must be submitted at least two weeks before publication; the Rice News calendar editor can provide specific submission dates. Ph.D. candidates therefore should begin scheduling their oral defenses at least three weeks in advance. Should an oral examination for the Ph.D. fail during the summer, the posting of a notice in the RiceInfo events calendar, at least one week prior to the defense, suffices as a public announcement.

Oral examinations for the master’s degree require only that public notice be posted on the department bulletin board one week in advance.

The length of the oral examination and the subject matter on which the candidate is questioned are left to the judgment of the committee. After candidates successfully pass the oral examination in defense of the thesis, they must submit two signed copies of the thesis to the Office of Graduate Studies no later than six months from the date of the examination. If the thesis is not ready for final signature by the end of the six-month period, the “pass” will be revoked and an additional oral defense will need to be scheduled. Extensions of this six-month period for completion without reexamination will be granted only in rare circumstances. Applications for an extension must be made by the candidate with the unanimous support of the thesis committee and approved by the vice provost for research and graduate studies. Students passing the oral examination on or before the end of the first week of classes of any semester do not have to register for that or any subsequent semester even though they may be continuing to make minor revisions to the final copy of their thesis.

Should a candidate fail, the committee chair may schedule a second examination. Students who fail a second time must withdraw from the university.

Students must send a copy of their approval of candidacy form, signed by the thesis committee, to the Office of Graduate Studies within one week after the oral examination. The original approval of candidacy form must be turned in when the thesis is submitted.

Ph.D. students must defend their theses before the end of the 16th semester of their residency at Rice. Master’s students must defend their theses before the end of the eighth semester of their residency at Rice.

Thesis Regulations and Procedures. The thesis is the principal record of a student’s work for an advanced degree. It is permanently preserved in the library. Instructions for thesis submission and guidelines for thesis formatting are provided by the Office of Research and Graduate Studies at the time of approval of candidacy. Additional copies of these instructions are available from the graduate studies office and can also be accessed on the Rice website at: http://rgs.rice.edu/grad/policies/thesis.

Students submitting a dissertation for the Ph.D., D.Arch., or D.M.A. must fill out a Survey of Earned Doctorates form. All students submitting theses, whether for
master’s or doctoral degrees, must complete a University Microfilm contract. Students must pay their fees for microfilming and binding their theses to the cashier before submitting the two copies to the Office of Graduate Studies for approval. The thesis may be submitted to the Office of Graduate Studies at any time; however students must meet the deadline for the thesis submission listed in the Academic Calendar (pages vi–x).

Leaves or Withdrawals

**Leave of Absence.** A leave of absence is granted only by the Office of Graduate Studies upon the recommendation of the department chair and only to graduate students in good standing with the university. Students must obtain approval for a leave before the academic semester in question. These requests, approved by the department, must be received in the Office of Research and Graduate Studies prior to the first day of classes.

Leaves are not granted after students register for courses or after the registration period passes. Normally, students may take a leave of absence for no more than two consecutive semesters. Students must pay a reinstatement fee of $75 upon their return from an official leave.

**Withdrawal and Readmission.** Students who wish to withdraw from Rice during the semester, for any reason, are to notify the chair of their academic department in writing (see Refund of Tuition and Fees, pages 49–50). Failure to register for any period without a leave of absence granted by the Office of Graduate Studies constitutes a de facto withdrawal. Students who later wish to resume study must reapply to the university. Readmission requires the recommendation of the department chair and the approval of the vice provost for research and graduate studies. Accepted students must pay a readmission fee of $250.

**Nonenrollment.** Students may not do degree work at Rice or work involving Rice faculty or facilities during any period of nonenrollment, except during the period following successful oral defense prior to submission of the final thesis.

Drop/Add

During the first two weeks of classes, all students may change their registration without a penalty fee by adding or dropping courses with the appropriate adviser’s approval. Students must obtain the instructor’s permission and the adviser’s approval to add a course between the second week and the end of the fourth week of classes. Students may not add courses after the fourth week of classes without the permission of the Office of Graduate Studies.

Students may not drop courses after the end of the 10th week of classes, except by approval of the Office of Graduate Studies (a $35 fee is assessed for courses dropped after the 10th week by non-first-semester students). The student is to prepare a written petition that must be approved by the student’s adviser and department chair and then forwarded to the vice provost for consideration.

Students who add or drop courses after the second week but before the deadlines noted above are charged for each drop/add form submitted according to the fee schedule (see page 29).

Academic Discipline

**Probationary Status.** Students whose cumulative grade point average or the average for the most recently completed semester falls below 2.33 are placed on probationary status; some departments may have more stringent standards. Although the department in most cases sends the student a letter of warning, probationary status applies whether or not a letter has been issued. A second semester of probationary status leads to automatic dismissal by the Office of Graduate Studies unless the student’s department presents a plea for exception that is approved by the vice provost for research and graduate studies. Departments are free to dismiss a student in the first semester of probationary status if they issue a warning before taking action.

**Dismissal.** Reasons for student dismissal include unsatisfactory progress (see above) or behavior judged by Rice to be disruptive or otherwise contrary to the best interests of either the university or the student.

**Appeal**

Students may petition the Office of the Vice Provost for Research and Graduate Studies regarding the application of any academic regulation. Petitions should go through department chairs and divisional deans, who will be asked to comment on their merits. In some cases, the vice provost will seek the advice of the Graduate Council. For appeals regarding nonacademic matters, see the following section on problem resolution.

**Procedures for Resolution of Problems**

Problems or conflicts may arise during a student’s graduate education. Students should take responsibility for informing the appropriate faculty of any such problem. All parties involved should work together amicably with the goal of resolving the problem informally if at all possible. When attempts to resolve a problem informally do not meet with success, the following grievance procedure should be adopted.

1. The student should submit the grievance in writing to the departmental chair, who will then attempt to resolve the problem.
2. If the student remains unsatisfied, the problem should be presented to a standing committee and not the student’s own review or dissertation committee. Both the student and the chair should submit a written record of their views to this committee.
3. If the student remains unsatisfied, the problem should be referred to a standing subcommittee designed at Graduate Council and composed of three faculty members (representing diverse disciplines within the university), one graduate student and the associate dean for graduate studies. A written report of proceedings at stage two should be presented to the chair of graduate council, for forwarding to the subcommittee, together with all other written materials generated during the investigation. The decision of this subcommittee will be considered final.
<table>
<thead>
<tr>
<th>Department Chair</th>
<th>Phone, Fax, E-Mail, URL</th>
<th>Faculty Research Interests</th>
</tr>
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<tbody>
<tr>
<td><strong>SCHOOL OF ARCHITECTURE</strong></td>
<td></td>
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</tr>
<tr>
<td>Lars Lertup (Dean)</td>
<td>713-348-4044, fax: 713-348-5277, <a href="mailto:arch@rice.edu">arch@rice.edu</a></td>
<td>Architecture design, urbanism, theory, and practice</td>
</tr>
<tr>
<td>John J. Casbarian (Associate Dean)</td>
<td>713-348-5152</td>
<td></td>
</tr>
<tr>
<td><strong>GEORGE R. BROWN SCHOOL OF ENGINEERING</strong></td>
<td></td>
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<tr>
<td>Bioengineering: Larry McIntire</td>
<td>713-348-5869, fax: 713-348-5877, <a href="mailto:bioeng@rice.edu">bioeng@rice.edu</a>, dacnet.rice.edu/~bioe/</td>
<td>Biochemical engineering, biological systems modeling, biomaterials, biomedical lasers, cellular and molecular engineering, controlled release technologies, metabolic engineering, spectroscopy, systems engineering and instrumentation, thrombosis, tissue engineering, and transport processes</td>
</tr>
<tr>
<td>Chemical Engineering: Kyriacos Zygourakis</td>
<td>713-348-4902, fax: 713-348-5478, <a href="mailto:ceng@rice.edu">ceng@rice.edu</a>, <a href="http://www.ruf.rice.edu/~che/">www.ruf.rice.edu/~che/</a></td>
<td>Transport and interfacial phenomena, thermodynamics, catalysis and reactor design, optimization and process control, rheology and fluid mechanics, polymer science, biomedical engineering, enhanced oil recovery and cleanup of ground-water aquifers, biochemical reactor engineering</td>
</tr>
<tr>
<td>Civil and Environmental Engineering: Joe Hughes</td>
<td>713-348-4949, fax: 713-348-5268, <a href="mailto:civi@rice.edu">civi@rice.edu</a>, <a href="http://www.ruf.rice.edu/~ceedept/">www.ruf.rice.edu/~ceedept/</a></td>
<td>Structural and foundation dynamics (e.g., earth-quake and offshore engineering), structural control, reinforced and prestressed concrete structures, application of probability theory to structural dynamics, experimental studies of structures, geotechnical engineering, and computer-aided engineering</td>
</tr>
<tr>
<td>Computational and Applied Mathematics: Bill Symes</td>
<td>713-348-4805, fax: 713-348-5318, <a href="mailto:caam@rice.edu">caam@rice.edu</a>, <a href="http://www.caam.rice.edu/">www.caam.rice.edu/</a></td>
<td>Operations research, mathematical programming, discrete and continuous optimization, numerical linear algebra, inverse problems, computational seismology, optimal design, partial differential equations, and numerical analysis</td>
</tr>
<tr>
<td>Computer Science: Moshe Y. Vardi</td>
<td>713-348-4834, fax: 713-348-5930, cs.rice.edu/</td>
<td>Algorithms and complexity, artificial intelligence and robotics, compilers, distributed and parallel computation, graphics and visualization, operating systems and programming languages</td>
</tr>
<tr>
<td>Electrical and Computer Engineering: Don H. Johnson</td>
<td>713-348-4020, fax: 713-348-5686, <a href="mailto:elec@rice.edu">elec@rice.edu</a>, <a href="http://www.ece.rice.edu">www.ece.rice.edu</a></td>
<td>Bioengineering, communications and signal processing, computer architecture and networking, electro-optics, and device physics</td>
</tr>
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<td><strong>INFORMATION FOR GRADUATE STUDENTS</strong></td>
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<td><strong>DEPARTMENT INFORMATION CHART</strong></td>
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<tr>
<td><strong>Department Chair</strong></td>
<td><strong>Phone, Fax, E-Mail, URL</strong></td>
<td><strong>Faculty Research Interests</strong></td>
</tr>
<tr>
<td>Statistics: Katherine B. Ensor</td>
<td>713-348-6032, fax: 713-348-5476, <a href="mailto:stat@rice.edu">stat@rice.edu</a>, <a href="http://www.stat.rice.edu/">www.stat.rice.edu/</a></td>
<td>Applied probability, Bayesian methods, bioinformatics, biostatistics, data analysis, data mining, density estimation, epidemiology, environmental statistics, financial statistics, image processing, model building, nonparametric function estimation, quality control, risk management, spatial temporal statistics, statistical computing, statistical genetics, statistical visualization, stochastic processes, and time series analysis</td>
</tr>
<tr>
<td>Hamid Naficy</td>
<td>713-348-4234/4815, fax: 713-348-4039, <a href="mailto:arts@rice.edu">arts@rice.edu</a>, <a href="http://www.nuf.rice.edu/~arts/">www.nuf.rice.edu/~arts/</a></td>
<td>Art history: Greek and Roman art and archaeology, early Christian through 20th-century European art, and American art</td>
</tr>
<tr>
<td>English: Susan Wood</td>
<td>713-348-4840, fax: 713-348-5991, <a href="mailto:engl@rice.edu">engl@rice.edu</a>, english.rice.edu/</td>
<td>Medieval through 20th-century English literature, American literature, and theoretical bases of literary criticism and genre theory</td>
</tr>
<tr>
<td>French Studies: Bernard Aresa</td>
<td>713-348-4851, fax: 713-348-5951, <a href="mailto:fren@rice.edu">fren@rice.edu</a>, <a href="http://www.nuf.rice.edu/~fren/">www.nuf.rice.edu/~fren/</a></td>
<td>Medieval through contemporary literature, French literary theory, philosophy, and French cultural history</td>
</tr>
<tr>
<td>German and Slavic Studies: Harvey Yunis</td>
<td>713-348-4868, fax: 713-348-5964, <a href="mailto:germ@rice.edu">germ@rice.edu</a>, german.rice.edu/</td>
<td>All periods of German literature, literature of East Germany, exile literature, medical philosophy and dialectology, genre theory, methods of criticism, cultural theory, and German cinema</td>
</tr>
<tr>
<td>Hispanic and Classical Studies: Maarten Van Delden</td>
<td>713-348-5451, fax: 713-348-4863, <a href="mailto:span@rice.edu">span@rice.edu</a>, <a href="http://www.nuf.rice.edu/~span/">www.nuf.rice.edu/~span/</a></td>
<td>Medieval, golden age, and modern peninsular Spanish literature, modern Spanish American literature, Hispanic linguistics, second language acquisition, and semiotics and literary theory</td>
</tr>
<tr>
<td>History: John Zummito</td>
<td>713-348-4948, fax: 713-348-5207, <a href="mailto:hist@rice.edu">hist@rice.edu</a>, <a href="http://www.nuf.rice.edu/~hist/">www.nuf.rice.edu/~hist/</a></td>
<td>Ancient, medieval history, modern British, French, German, and Balkan history, American Colonial history, Old and New South and Civil War history, legal, constitutional, intellectual, and recent history, military history, history of science, and East Asian and Latin American history</td>
</tr>
<tr>
<td>Linguistics: Philip Davis</td>
<td>713-348-6010, fax: 713-348-4718, <a href="mailto:ling@rice.edu">ling@rice.edu</a>, linguistics.rice.edu/</td>
<td>General and cognitive-functional linguistics, syntax and semantics, discourse analysis, typology, language description and change, and computational linguistics</td>
</tr>
<tr>
<td>Philosophy: Steven Crowell</td>
<td>713-348-4994, <a href="mailto:philos@rice.edu">philos@rice.edu</a>, <a href="http://www.nuf.rice.edu/~philos/">www.nuf.rice.edu/~philos/</a></td>
<td>History of philosophy, metaphysics, ethics, medical ethics, social and political philosophy, and philosophy of law, language, and science</td>
</tr>
<tr>
<td>Religious Studies: William B. Parsons</td>
<td>713-348-5201, fax: 713-348-5486, <a href="mailto:reli@rice.edu">reli@rice.edu</a>, reli.rice.edu/</td>
<td>Theological and medical ethics, New Testament and early Christianity, Indo-Tibetan thought and practice, history of Christianity, contemporary continental philosophy of religion, and psychology of religion, Judaism, and Islam</td>
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### Department Chair, Phone, Fax, E-Mail, URL

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<tr>
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<th>Faculty Research Interests</th>
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<tbody>
<tr>
<td><strong>JESSE H. JONES GRADUATE SCHOOL OF MANAGEMENT</strong></td>
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<tr>
<td>Gilbert R. Whitaker, Jr. (Dean)</td>
<td>713-348-4838</td>
<td>Earnings management, change communication, financial reporting, accounting standard setting in different countries, stock market volatility, corporate governance, strategic management, decision making, corporate finance, securities markets, marketing strategy, customer satisfaction, corporate performance measurement, customer choice and attitude models, new product diffusion models, service operations, management, computer–human interaction, international business and trade, business–government relationships, leadership, firm valuation, brand equity, and business ethics</td>
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<tr>
<td>Robert A. Westbrook (Associate Dean)</td>
<td>713-348-5396</td>
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<tr>
<td>Wilfred C. Uecker (Associate Dean)</td>
<td>713-348-6060</td>
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<tr>
<td>Alan Levander</td>
<td>713-348-5131</td>
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<tr>
<td>Robin Forman</td>
<td>713-348-5031</td>
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<tr>
<td><strong>SHEPHERD SCHOOL OF MUSIC</strong></td>
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<tr>
<td>Anne Schnoebelen (Interim Dean)</td>
<td>713-348-4854</td>
<td>Orchestral studies, performance, conducting, composition, theory, and music history</td>
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<tr>
<td></td>
<td>713-348-5317</td>
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<tr>
<td><strong>WISSI SCHOOL OF NATURAL SCIENCES</strong></td>
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<tr>
<td>Biochemistry and Cell Biology</td>
<td>713-348-4015</td>
<td>Biochemistry, biophysics, developmental biology, cell biology, genetics, molecular biology, neurobiology, structure and function of nucleic acids and proteins, regulatory processes, biochemistry of lipids, enzymology, NMR and crystallography, cellular regulation, oxygen and electron transport, and molecular genetics of plants, animals, fungi, bacteria, and bacteriophage</td>
</tr>
<tr>
<td>Frederick Rudolph</td>
<td>713-348-5154</td>
<td></td>
</tr>
<tr>
<td>Kenton Whitmire</td>
<td>713-348-5683</td>
<td>Synthesis and biosynthesis of organic natural products, synthesis of small cycloalkanes, molecular recognition and biological catalysis, bioinorganic and organometallic chemistry, main group element and transition metal chemistry, high-pressure and high-temperature chemistry, fluorine chemistry, chemical vapor deposition, design of nanophase solids, molecular photochemistry and photophysics, infrared kinetic spectroscopy, laser and NMR spectroscopy, study of oriented molecular beams, theoretical and computational chemistry, and study of giant fullerene molecules, carbon nanotubes and their derivatives, polymer synthesis and characterization, molecular electronics, and molecular machines</td>
</tr>
<tr>
<td>Chemist</td>
<td>713-348-5431</td>
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<tr>
<td>Meredith Skura</td>
<td>713-348-4826</td>
<td>Secondary Education</td>
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<tr>
<td></td>
<td>713-348-5317</td>
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<tr>
<td>Ecology and Evolutionary Biology</td>
<td>713-348-4919</td>
<td>Biogeochemistry, wetland ecology, plant community and population ecology, behavioral ecology, sociobiology, molecular evolution, insect diversity, and community structure</td>
</tr>
<tr>
<td>Ronald Sass</td>
<td>713-348-5232</td>
<td></td>
</tr>
<tr>
<td>Earth Science</td>
<td>713-348-4880</td>
<td>Marine geology and geophysics; sedimentology, stratigraphy, paleoceanography, paleoclimatolog y, evolution of continental margins and carbonate platforms; tectonics, neotectonics, tectonophysics, geodynamics, mantle processes, planetology, and space geodesy; remote sensing, potential fields, reflection and lithospheric seismology, wave propagation and inverse theory; kinetics of fluid-solid interactions, low T aqueous geo-chemistry, petrology, and high T geochemistry</td>
</tr>
<tr>
<td>Alan Levander</td>
<td>713-348-5214</td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td>713-348-4929</td>
<td>Differential and algebraic geometry, ergodic theory, partial differential equations, probability and combinatorics, real analysis, complex variables, and geometric and algebraic topology</td>
</tr>
<tr>
<td>Robin Forman</td>
<td>713-348-5231</td>
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### Tuition, Fees, and Expenses

The tuition and fees for graduate students in this section are for the 2002–2003 academic year only and are subject to change in subsequent years. Current tuition and fees for all graduate students, full time and part time:

- **Annual Semester Hour**
  - **Tuition**
    - **all schools except Jones School**
      - $18,500.00
    - **Jones School M.B.A.**
      - $23,250.00
    - **Jones School E.M.B.A. (2-year rate)**
      - $65,000.00
  - **Health service fee**
    - $296.00
  - **Graduate Student Association fee**
    - $20.00
  - **Shuttle fee**
    - $37.00
  - **Honor Council fee**
    - $2.00
  - **Student Organizations Fund**
    - $8.00
  - **Information technology fee**
    - $100.00
  - **Jones School activities fee**
    - $65.00
Away Status. Students pursuing their studies outside of the Houston area (students on "away" status) must be registered and pay tuition but are not required to pay the fees listed above, with the exception of the information technology fee.

Reduced Tuition. After six semesters of full-time study in one degree program (excluding the summer semesters), continuing students enter a reduced-tuition category of $1030 per year ($515 per semester). Students who are admitted with a relevant master’s degree, i.e. a master’s degree that counts toward a doctoral program at Rice, may become eligible for reduced tuition earlier than those entering a doctoral program without a relevant master’s degree. Semesters credited toward reduced tuition will be limited to one degree program. In extraordinary circumstances, the Office of Graduate Studies may consider petitions for exceptions.

Health Insurance. All students, full time, part time, and those on away status, must also carry health insurance (see page 82).

Other Fees. Unless students elect a special payment plan, they must pay all tuition and fees for the fall semester by the middle of August, and for the spring semester by the end of the first week of January. Past these deadlines, a late payment penalty of $70 will be assessed.

Other fees applicable under special circumstances:

- Preceptorship (per semester): $185.00
- Internship (per semester): $185.00
- Enrollment continuance fee (Study Abroad) (per semester): $125.00
- Graduate application fee: $35.00
- Jones School application fee: M.B.A.: $100.00
- Jones School application fee: E.M.B.A.: $100.00
- Part-time registration fee: $100.00
- Late registration fee: $95.00
- Failure to pre-register fee: $45.00
- Late course change fee:
  - Adds: Week 1–2: Free
  - Week 3–4: $10.00
  - Week 5 and after: $30.00
  - Drops: Weeks 1–4: Free
  - Weeks 5–10: $10.00
  - Week 11 and after: $35.00
- Deferred Payment Plan late fee: $25.00
- Diploma fee: sheepskin: $85.00
- Diploma fee: parchment: $25.00
- Diploma mailing fee: domestic: $15.00
- Diploma mailing fee: air mail: $21.00
- Diploma mailing fee: facsimile: $5.00
- Transcript fee: $5.00
- Class III registration fee: $100.00
- Class III late application fee: $65.00
- Intramural fee: $15.00
- Reenrollment fee: graduate students only: $250.00
- Reinstatement fee: graduate students only: $75.00
- Replacement ID: $10.00

For more information, see Refund of Tuition and Fees (pages 49–50).

Financial Aid

Fellowships, Scholarships, and Assistantships

A range of fellowships, scholarships, and assistantships are available at Rice. Most graduate students in degree programs requiring a thesis are supported by fellowships or research assistantships.

Rice Graduate Fellowships. Doctoral students with high academic records and strong qualifications receive support through Rice fellowships. In most cases, these fellowships provide a stipend plus tuition for the nine-month academic period. Departments may nominate particularly outstanding entering students for a Rice Presidential Fellowship.

Rice Graduate Tuition Scholarships. Students whose previous records show marked promise but for whom no graduate fellowships are available may receive full or partial graduate tuition scholarships, which do not include a stipend.

Research Assistantships. Usually funded from grants and contracts, research assistantships are available in many departments, especially in the Schools of Natural Sciences and Engineering. Qualified students (usually second-year or later) receive these awards to provide assistance on faculty research projects, work that usually contributes to the student’s own thesis. In some departments, a limited number of teaching assistantships may be available to advanced students.

Eligibility. Fellowship, scholarship, and assistantship recipients are selected by the individual departments, subject to the approval of the Office of Graduate Studies. Students should send their applications for such awards directly to the department involved.

To receive Rice fellowships, graduate tuition scholarships, or assistantship aid, students must be engaged in full-time graduate study; part-time students and students who are not enrolled are not eligible for such aid.

Students receiving stipends from fellowships or assistantships may not accept any regular paid employment on or off campus without the explicit permission of the department and the Office of Graduate Studies. Full-time students, whether receiving stipend support or not, may not accept paid employment in excess of 20 hours per week.

Loans and Work-Study Financial Aid

In addition to fellowships, scholarships, and assistantships, the Office of Student Financial Services offers need-based assistance in the form of loans and federal work-study employment. Interested students must file a Free Application for Federal Student Aid (FAFSA) and a Rice Graduate Financial Aid Application.

Subsidized Stafford Loans. Graduate students may process these loans through Rice up to a maximum eligibility of $8,500 per year, as set by the Federal Government. No interest accrues and no payment is required under the following conditions:
ties. Memorial fellowships that have been founded and endowed by gift or bequest on fellowships, scholarships, and prizes available to graduates of this and other universities makes available emergency loans to help graduate students at Rice with short-term of 1972–73, the Graduate Student Association, and various faculty members, this fund helps students working toward a degree meet their educational expenses, but funds are limited. Interested students may contact the Office of Student Financial Services. Those wishing to apply for a loan under either of these programs should begin the application process the summer before the academic year for which they are seeking help. Guidelines for the program are:

- Upon completion, applications are submitted to the vice provost for research and graduate studies for approval.
- Graduate students must be enrolled on a full-time basis to be eligible to apply for a loan and must maintain full enrollment during the full term of the loan.
- Upon completion, applications are submitted to the vice provost for research and graduate studies for approval.
- Loans are available during the full course of the academic year.
- Loans must be repaid before graduation.

Emergency Loan Fund. Established through gifts from the Graduate Wives Club of 1972–73, the Graduate Student Association, and various faculty members, this fund makes available emergency loans to help graduate students at Rice with short-term needs. Loans are limited to $250 and must be repaid within three months. In lieu of interest, a charge of $5 per loan is assessed to maintain the fund.

Other Fellowships, Honors, and Prizes. Provisions are made for a variety of fellowships, scholarships, and prizes available to graduates of this and other universities. Memorial fellowships that have been founded and endowed by gift or bequest on the part of friends of Rice University provide stipends enabling the holders to devote their time to study and research in their chosen fields. There are also several industrial fellowships maintained by companies interested in the development of technical fields and the training of competent scientists, engineers, and business executives.

Persons desiring consideration for appointment as fellows should consult with the department in which they wish to do research. However, not all fellowships are available every year.

Graduate Student Life

Graduate Student Association

All full-time students in the graduate program are members of the Graduate Student Association, which is the sole organization representing graduate students as a body. The governing body of this organization is the Graduate Student Association Council, consisting of a representative from each department offering graduate study and a president, vice president, secretary, and treasurer elected by the council. Graduate students also participate in university affairs through their representatives on many standing and ad hoc university committees, such as the Graduate Council, the Research Council, and various department committees.

One of the functions of the Graduate Student Association is to encourage social interaction among graduate students from different departments. To that end, the association organizes a variety of social activities open to all members of the graduate student body.

Housing for Graduate Students

The Rice Graduate Apartments are housed in a garden-style complex located on a 2.7-acre site just north of campus. The project features attractive landscaping and good lighting in all common areas, designed to enhance both the security and the aesthetics of pedestrian, bike, auto paths, parking, and recreational areas. Electronically controlled gates for both pedestrian and vehicular paths are provided. Handicap accessibility also is an important feature. A shuttle bus travels back and forth between the apartments and campus.

There are 112 units, including one-bedroom, two-bedroom, four-bedroom, and efficiency apartments. The complex is designed with a centrally located space for social activities, a laundry room on each floor, a study room equipped with computers, enclosed areas with locks for bike racks, and two courtyards. Every apartment has a living area, a fully equipped kitchen, cable TV connection, and a network drop for a personal computer. Housing is assigned on a space-available basis. Call 713-348-GRAD (4723) for further information.

The Morningside Square Apartments are two-story 1950s-vintage units located in a quiet neighborhood adjacent to Rice Village. they are within a short walking distance to campus, restaurants, and shopping areas. The complex is attractively landscaped and offers gated and covered parking.

There are 53 units, including one-bedroom, two-bedroom, and three-bedroom apartments. The common hallways, bedrooms, and living rooms feature oak hardwood flooring. Kitchens are equipped with a refrigerator and gas range. All units have ceiling fans, a gas furnace, and window air conditioners. Basic cable TV is provided, and a coin-operated laundry is available on site. Apartments are assigned on a space-available basis. Call 713-524-1275 for further information.

The Information Desk, the Office of Student Activities, and the Graduate Student...
Association keep records of available rooms and apartments listed with the university by area landlords. The daily newspaper and a weekly Greensheet are other sources of rental housing information. Incoming graduate students should arrive in Houston several days early to allow themselves time to find suitable housing.

Health Requirements for Graduate Students

Paying the student health service fee gives graduate students access to both the Student Health Service and Rice Counseling Center (see pages 12–14). New graduate students may not register for or attend classes until they have completed and returned the health data form to Rice and met the immunization and TB screening requirements.

All graduate students must have health insurance. Students may purchase insurance through the university at two levels of coverage. Rice’s group coverage for the 2002–2003 academic year is effective from 12:01 A.M. August 15, 2002, until 12:01 A.M. August 15, 2003. Dependent coverage is also available. A description of the policy, application form, and waiver form can be found on the Web at http://studenthealthinsurance.rice.edu. Student should submit either the application or waiver by August 15 each year.

Class III Students in Nondegree Programs

Students with a 3.00 (B) or better grade average and an undergraduate or graduate degree from an accredited college or university may apply for admission as Class III students. These students may take courses for credit without being admitted to a specific degree program. Registration requires the permission of the instructor and approval by the vice provost for research and graduate studies. All Class III applications to accounting and management courses require approval of the Jesse H. Jones Graduate School. Class III students must register for at least 3 hours and cannot take courses on a pass/fail or satisfactory/unsatisfactory basis. Class III students must receive at least a B for all classes taken or they will not be allowed to remain in the Class III program.

Students may not use courses taken under this arrangement to fulfill the requirements for a Rice degree unless and until they have been accepted into a degree program by an academic department (as well as, in the case of graduate students, by the vice provost for research and graduate studies) and received department approval; students are responsible for obtaining the proper approvals. Students may request that the department allow up to 3 courses taken as Class III to count toward their graduate degree.

Applications for Class III

Applications and course request forms are available from the Office of Graduate Studies. Official transcripts from all colleges and universities the student has attended should be mailed directly by the institutions to the Office of Graduate Studies. Students who were previously Class III students must complete a new application (without transcripts) for each such semester. All application materials are due by the workday closest to August 1 for fall semester courses and December 1 for spring semester courses. Late applications are not considered after classes have begun. Individuals applying as Class III students for the summer term should apply to the Summer School for College Students (see page 42).

Tuition and Fees for Class III

The tuition for 2002–2003 is $1,030 per semester hour, plus a $100 registration fee each semester. All fees are payable during registration, which students must complete during the second week of class. Students failing to submit their applications by the deadline must pay a late application fee of $65, and students registering after the second week of class must pay a $95 late registration fee. For some courses, students may be charged for computer time. If a class fills with degree students, instructors may drop Class III students up to the end of the third week of class. In that case, the tuition (less $25 of the registration fee) will be refunded. Please see page 42 for information pertaining to summer school.
Degree Offered: B.A.

This interdisciplinary major in the cultures of ancient Greece and Rome, Judaism, early Christianity, and early Islam, as well as their antecedents, explores these traditions both for their intrinsic interest and for the contributions each has made to contemporary Western society. This combined focus on ancient cultural history in its broadest sense and on perspectives offered by cultural criticism enables students to examine the beginnings of the civilization in which they now participate.

Courses for this major address common questions about the transmission and transformation of cultures in the ancient Mediterranean world. Students examine sources, such as texts, artifacts, and institutions that illuminate the process. They study how shifting cultural centers and frontiers in this world are delineated, and they explore the general integration and disintegration of specific ancient cultures. This major also offers opportunities for archaeological fieldwork and study abroad.

Rice is a sponsor of the American School of Classical Studies at Athens, the American School of Oriental Research, and the Intercollegiate Center for Classical Studies in Rome. Students majoring in Ancient Mediterranean Civilizations are encouraged to study in these programs as well as in the College Year in Athens program.

Degree Requirements for B.A. in Ancient Mediterranean Civilizations

For general university requirements, see General Graduation Requirements (pages 18–20). Majors in Ancient Mediterranean Civilizations must complete at least 30 semester hours (10 courses). Students must take a core course (AMC 200, CLAS 207, or CLAS 208) near the beginning of their studies, and may select from the following courses to fulfill their requirements for the major.

Core Courses
AMC 200 Ancient Empires
CLAS 207 Greek Civilization: From Homer to Alexander the Great
CLAS 208 Roman Civilization

Anthropology
ANTH 203 Human Antiquity: An Introduction to Physical Anthropology and Prehistory
ANTH 205 Introduction to Archaeology
ANTH 352 Self, Sex, and Society in Ancient Greece
ANTH 345 The Politics of the Past: Archaeology in Social Context
ANTH 362 Archaeological Field Techniques
ANTH 363 Early Civilizations
ANTH 377 The Ancient City
ANTH 460 Advanced Archaeological Theory
ANTH 474 Advanced Seminar on the Prehistoric Landscape

Classical Studies
CLAS 209 Greek and Roman Drama
CLAS 220 The Novel in Classical Antiquity
CLAS 222 Perspectives on Greek Tragedy
CLAS 225 Women in Greece and Rome
CLAS 315 Socrates: The Man and His Philosophy
CLAS 316 Democracy and Political Theory in Ancient Greece
CLAS 318 The Invention of Paganism in the Roman Empire
CLAS 335 Myth and Storytelling: Ancient, Medieval, and Modern Traditions
CLAS 337 Epic and Novel
CLAS 351 Epic and Saga
CLAS 352 Periclean Athens
CLAS 491 Special Topics
CLAS 492 Special Topics

Greek Studies
GREE 101 Introduction to Ancient Greek I
GREE 102 Introduction to Ancient Greek II
GREE 201 Intermediate Greek I: Prose
GREE 202 Intermediate Greek II
GREE 301 Advanced Greek I
GREE 302 Advanced Greek II
GREE 491 Directed Reading
GREE 492 Directed Reading

Latin
LATI 101 Elementary Latin I
LATI 102 Elementary Latin II
LATI 201 Intermediate Latin I: Prose
LATI 202 Intermediate Latin II
LATI 301 Advanced Latin I
LATI 302 Advanced Latin II
LATI 310 Advanced Latin
LATI 312 Advanced Latin
LATI 313 Advanced Latin
LATI 491 Directed Reading
LATI 492 Directed Reading

History
HIST 113 God, Time, and History
HIST 152 Freshman Seminar in Ancient History
HIST 200 Ancient Empires
HIST 202 Introduction to Medieval Civilization: The Early Middle Ages
HIST 207 Greek Civilization: From Homer to Alexander the Great
HIST 273 Ancient and Medieval Jewish History: 70–1492
HIST 281 The Middle East from the Prophet Muhammad to Muhammad Ali
HIST 283 Women in the Islamic World
HIST 306 Politics and Society in Ancient Greece
HIST 307 Imperial Rome, from Caesar to Diocletian
HIST 308 The World of Late Antiquity
HIST 309 Decline and Fall of the Roman Empire
HIST 316 The Invention of Paganism in the Roman Empire
HIST 320 Science in Antiquity and the Middle Ages
HIST 325 Introduction to Medieval Civilization: The Early Middle Ages (enriched version)
HIST 373 Ancient and Medieval Jewish History: 70–1492 (enriched version)
HIST 382 Classical Islamic Cultures
HIST 445 Jews and Christians: Perceptions of the Other
HIST 451 Philosophies and Theologies of History
HIST 460 Advanced Seminar in Ancient History

History of Art
HART 101 Introduction to the History of Western Art: Prehistoric to Gothic
HART 205 Architecture and the City I: Antiquity–17th Century
HART 229 Independent Study in Early Christian, Byzantine, and Islamic Art
HART 310 The First Civilizations
HART 311 Art of the Ancient Aegean and Eastern Mediterranean
HART 312 Greek Art and Architecture
HART 313 The Discovery of the Mind
HART 314 Art and Architecture in the Hellenistic World
HART 315 Roman Art and Architecture
HART 316 Greek Sculpture
HART 318 Special Topics in Ancient Art
HART 319 Independent Study in Ancient Art
HART 320 Age of Augustus

Linguistics
LING 437 History of Linguistics

Philosophy
PHIL 201 History of Philosophy I
PHIL 301 Ancient and Medieval Philosophy
PHIL 307 Social and Political Philosophy
PHIL 327 History of Social and Political Philosophy
PHIL 501 Seminar in Ancient and Medieval Philosophy

Religious Studies
RELI 122 The Bible and Its Interpreters
RELI 125 Introduction to Biblical Hebrew I
RELI 126 Introduction to Biblical Hebrew II
RELI 200 The Bible in Western Tradition
RELI 221 The Life of the Prophet Muhammad
RELI 223 Qur’an and Commentary
RELI 302 Jewish–Christian Dialogue
RELI 307 History of Christianity: The First Four Centuries
RELI 308 Canonical Gospels: Narrative and Social Setting
RELI 350 Sacred Scriptures in Monotheistic Faiths
RELI 370 Dynamics of Classical Judaism
RELI 382 Biblical Theology
RELI 383 The Dead Sea Scrolls
RELI 410 Apocalypse Then and Now
RELI 441 Popular Religion in the Middle East

University Courses
UNIV 302 Communication, Cognition, and Culture

See AMC in the Courses of Instruction section.
Anthropology

The School of Social Sciences

Chair
George E. Marcus

Professors
James D. Faubion
Benjamin Lee
Roderick J. McIntosh
Susan Keech McIntosh
Julie M. Taylor
Stephen A. Tyler

Associate Professor
Eugenia Georges

Assistant Professors
Christopher Kelty
Hannah Landecker

Degrees Offered: B.A., M.A., Ph.D.

The major in anthropology has 2 areas of concentration: cultural anthropology and archaeology. The focus in cultural anthropology is on contemporary theoretical issues. By reading primary sources, students gain an exposure to the styles of argument and reasoning of a broad range of theorists. They can then engage in the ongoing discussion and definition of central problems within the field. Fieldwork and ethnography are important in the doctoral research.

In archaeology, the focus is on research skills in the library, the field, and the laboratory. Most students also develop at least one analytical skill, such as remote sensing, archaeological statistics, osteology, or geomorphology, drawing on the university’s extensive laboratory and computer facilities.

Students may organize a major in one or both fields or combine a major in anthropology with one in another discipline.

Degree Requirements for B.A. in Anthropology

For general university requirements, see Graduation Requirements (pages 18–20). Students majoring in anthropology must:

• Complete a total of 30 semester hours of departmental courses (10 courses)
• Have a plan of study approved by the undergraduate adviser

With department approval, students may substitute for departmental courses at most 6 hours of courses from outside the major that are related to their plan of study. The department recommends that students intending to pursue graduate study acquire a reading knowledge of 1 or 2 European languages.

Honors Program. Majors considering a career in anthropology should apply to the honors program, as should those who wish to include advanced training and an intensive, individual research project in their undergraduate education. Anthropology faculty determine acceptance into the program. More information is available from the department office; see also Honors Programs (page 32).
Degree Requirements for M.A. and Ph.D. in Anthropology

Because each field of specialization offers different opportunities for training and different research orientations, the department seeks applicants with a defined interest in either cultural anthropology or archaeology; an undergraduate background in anthropology is desirable but not required. Entering students devise a detailed first-year plan of study and provisional plans for succeeding years in consultation with an adviser. The plan should emphasize broad training in the selected field before the eventual definition of a project for dissertation research. For general university requirements, see Graduate Degrees (pages 62–67).

M.A. Program. Graduate students may earn the M.A. only by obtaining approval of their candidacy for the Ph.D. For the M.A. as a terminal degree, students must complete:
• 30 semester hours of approved course work
• 1 of the 3 special papers required for the Ph.D.
• A thesis

Ph.D. Program. For the Ph.D. degree, students must accomplish the following:
• Complete 3 substantial papers, each emphasizing an analytical, research, and writing skill appropriate to their field of specialization (should be completed during the first two years of study)
• Demonstrate reading competency in 1 foreign language
• Prepare a satisfactory proposal for dissertation research, based in substantial part on field research
• Complete and defend the dissertation

Special Options. The department will arrange seminars and tutorials on any topic relevant to a student’s training; these seminars may be conducted in supervisory consultation with scholars in other disciplines as well as with adjunct faculty. Students interested in the specialized field of medical anthropology may take advantage of the extensive resources of the Texas Medical Center through ties established with the University of Texas School of Public Health and Graduate School of Biomedical Sciences; students may earn degree credit for formal courses taken at both schools.

Financial Support. All first-year students receive the same level of support: a combination of graduate fellowships and tuition scholarships. These awards are renewed for a further two years of study.

See ANTH in the Courses of Instruction section.
Architecture

The School of Architecture

Dean
Lars Lerup

Associate Dean
John J. Casbarian

Professors
William T. Cannady
Albert H. Pope
Gordon G. Wittenberg, Jr.

Associate Professors
John Biln
Carlos Jimenez
Sanford Kwinter
Spencer W. Parsons

Assistant Professors
David Brown
Fares el-Dahdah
Dawn Finley
Keith Krumwiede
Nana Last

Lecturers
Louis DeLaura
Alan Fleishacker
James Furr
Nonya Grenader
Tom Lord
Mark Oberholzer
Frank S. White

Adjunct Lecturer
Stephen Fox

Visiting Critics
David Guthrie
Doug Oliver
William Williams

Visiting Professor
Danny M. Samuels
Mark Wamble

Degrees Offered: B.A., B.Arch., M.Arch., M.Arch. in Urban Design, D.Arch.

The principal goal of the School of Architecture is to contribute to a more humane environment. The school focuses on teaching and research, the development of a broad liberal education for undergraduates in the allied sciences and arts of architecture, and professional graduate and postgraduate education in architecture and urban design. Intimate student-faculty interaction, academic freedom, and unrestricted institutional cooperation within and outside the university are distinctive qualities of the architecture degree programs at Rice.

The undergraduate programs maintain a balance between academic studies and professional practice. Lectures and other public programs, visiting faculty, scholarly presentations, and the Preceptorship Program, which provides a one-year internship in outstanding architectural offices throughout the U.S., Europe, and Japan, all complement the school’s core of distinguished teachers and practitioners.

The graduate programs have three areas of emphasis: architectural design, with particular attention paid to history, theory, and practice; urban design, where the concern is the emerging form of the American city; and research in computer visualization that uses the resources of the state-of-the-art Rice Advanced Visualization Lab.
Degree Requirements for B.A. in Architecture or Architectural Studies

For general university requirements, see Graduation Requirements (pages 18–20). The conditions specified here for each major also satisfy the university distribution requirements.

B.A. in Architecture. The curriculum for architecture majors is divided into a foundation sequence taken in the freshman and sophomore years and a preprofessional sequence taken in the junior and senior years. The foundation sequence consists of four semesters of design studios and other related courses in architecture. The first-semester studio develops basic design skills through directed explorations and problem-solving exercises in form, texture, color, material, and structures. In the subsequent 3 studios, through a carefully sequenced series of exercises, students are introduced to a broad range of architectural design issues, processes, and methods. Students are required to take 4 courses in the history and theory of art and architecture during the freshman and sophomore years in addition to two semesters of architectural technology. They must also complete university distribution requirements. It is recommended that students take an introductory drawing course during their first two years of study to develop visual skills.

Students who satisfactorily complete the foundation sequence may, upon approval of their major, enter the junior and senior year preprofessional sequence. The fall studios for the third and fourth years are organized around the workshop model and emphasize complex building/computer applications and urban design issues, respectively. The spring studios are vertically integrated, allowing students to select offerings emphasizing specialized design topics such as technology, landscape, historical precedent, and urban design. During the third and fourth years, students are required to take 2 additional technology courses and to fulfill all remaining school or university distribution requirements. Students wishing to pursue the professional degree in architecture may apply for admission to the Bachelor of Architecture (B.Arch.) degree program during the second semester of the fourth year.

B.A. in Architectural Studies. Students who have been admitted as architecture majors and who have successfully completed the two-year foundation program may choose the architectural studies curriculum. The first four semesters of the curriculum are identical to the foundation sequence of the architecture major except for the omission of 1 technology course. Subsequent requirements are the completion of 1 additional studio and 4 elective courses in architecture. The program provides basic preparation for later professional study while allowing students to pursue other academic interests in depth.

Bachelor of Architecture (B.Arch.) Program. The Bachelor of Architecture program is open to students who have completed the undergraduate preprofessional architecture program at Rice. Upon admission, students are assigned a preceptorship, which takes place immediately after receipt of the Bachelor of Arts in Architecture degree. The preceptorship program balances academic learning with professional experience. Qualified students who have been admitted to the B.Arch. degree program are assigned to work for a year in the United States or abroad with leading architectural offices designated by the school as preceptors. The B.Arch. degree requires the successful completion of the B.A. in architecture, completion of the two-semester preceptorship, and completion of 2 graduate studios and 5 approved lecture or seminar courses.

Typical Curriculum for B.A. in Architecture

First Semester
ARCH 101 Principles of Architecture I
HART 101 Introduction to History of Art
PHYS 101 Mechanics (with lab)
LPAP 101 Lifetime Physical Activities
Approved architecture restricted distribution course in humanities

Second Semester
ARCH 102 Principles of Architecture I
ARCH 132 Freshman Seminar
HART 102 Introduction to History of Art
LPAP 102 Lifetime Physical Activities
MATH 101 Single Variable Calculus
Approved architecture restricted distribution course in humanities

Third Semester
ARCH 201 Principles of Architecture II
ARCH 207 Introduction to the Design of Structures
ARCH 345 Renaissance and Baroque Architecture in Italy
Studio Art Elective*
Elective*

Fourth Semester
ARCH 202 Principles of Architecture II
ARCH 214 Design of Structures II
ARCH 346 Architecture and the City II
Approved architecture restricted distribution course in social sciences
Elective*

Fifth Semester
ARCH 301 Principles of Architecture III
ARCH 315 Design of Structures III
Architectural Theory Elective
Elective*

Sixth Semester
ARCH 302 Principles of Architecture III
ARCH 316 Building Climatology
Elective*
Elective*
Elective*

Seventh Semester
ARCH 401 Principles of Architecture IV
Elective*
Elective*
Elective*

8th Semester
ARCH 402 Principles of Architecture IV
Elective*
Elective*
Elective*

*All courses must be selected to satisfy both architecture major requirements and university distribution requirements.
Option 1: Seven-Semester Program

Option 1 is offered to individuals who hold a four-year undergraduate degree with a major in a field other than architecture. Preference for admission is given to those who have completed a balanced education in the arts, sciences, and humanities. A minimum of two semesters of college-level courses in the history of art and/or architecture are recommended; so is a minimum of one semester of college-level courses in mathematics and physics. Previous preparation in the visual arts is also desirable and so are courses in philosophy, literature, and economics.

In order to graduate, students must complete a four-semester core curriculum (76 credit hours), which is followed by a three-semester advanced curriculum (57 credit hours). Course work in both core and advanced curricula consists of 7 studios (including thesis) and 20 distribution courses (133 credit hours).

Core Curriculum

First Semester
ARCH 501 Core Design Studio I
ARCH 507 Introduction to Design of Structures II
ARCH 633 Introduction to Computer Applications in Architecture
ARCH 685 Architecture and Society I

Second Semester
ARCH 502 Core Design Studio II
ARCH 514 Design of Structures II
ARCH 636 Computer Aided Design in Architecture
ARCH 686 Architecture and Society II

Third Semester
ARCH 503 Core Design Studio III
ARCH 515 Design of Structures III
ARCH 683 20th-Century History of Ideas in Architecture

Fourth Semester
ARCH 504 Architectural Problems
ARCH 516 Building Climatology
ARCH 623 Professionalism and Manag. in Architecture

Advanced Curriculum

Fifth Semester
ARCH 601 Architectural Problems
Dist. Elective (Hist., Theory, and Crit.)
Dist. Elective (Comp., Log., and Repr.)
Elective

Sixth Semester
ARCH 602 Architectural Problems
ARCH 702 Pre-Thesis Preparation
Dist. Elective (Struct., Pract., and Env.)
Elective

Seventh Semester
ARCH 703 Thesis Studio or equivalent
Elective
Elective

Programs of Study

There are three program options at the Master of Architecture level. Options 1, 2, and 3 differ according to the bachelor’s degree received prior to entering the graduate program.
Option 2: Five-Semester Program

Option 2 is offered to individuals who hold a four-year undergraduate degree with a major in architecture. Preference for admission is given to those who have successfully completed between four and six semesters of undergraduate design studio as well as undergraduate courses that are analogous to those given in the first year of Option 1. A minimum of two semesters of college-level courses in the history of art and/or architecture are recommended; so is a minimum of one semester of college-level courses in mathematics and physics.

Students in this program enter into the second year of the core curriculum (two semesters, 38 credit hours), followed by the advanced curriculum (three semesters, 57 credit hours). Course work in both core and advanced curricula consists of 5 studios (including thesis) and 14 distribution courses (95 credit hours).

Core Curriculum

**First Semester**
- ARCH 503 Core Design Studio III
- ARCH 515 Design of Structures III
- ARCH 683 20th-Century History of Ideas in Architecture
  Dist. Elective (Comp., Log., and Repr.)

**Second Semester**
- ARCH 504 Architectural Problems
- ARCH 516 Building Climatology
- ARCH 623 Professionalism and Manag. in Architecture
  Dist. Elective (Hist., Theory, and Crit.)

**Advanced Curriculum**

**Third Semester**
- ARCH 601 Architectural Problems
  Dist. Elective (Hist., Theory, and Crit.)
- Dist. Elective (Comp., Log., and Repr.)
  Elective

**Fourth Semester**
- ARCH 602 Architectural Problems
  Dist. Elective (Struct., Pract., and Env.)
- Elective

**Fifth Semester**
- ARCH 703 Thesis Studio*
  Elective
  Elective
  *or an approved alternative

Option 3: Three-Semester Program

Option 3 is offered to individuals who hold a professional degree in architecture (B.Arch.), or its equivalent from a foreign university. Preference for admission is given to those who have significant practical experience in architecture and who have demonstrated high achievement in design.

In order to graduate, students must complete a three-semester advanced curriculum of elective courses. Course work consists of 3 studios (including thesis) and 8 distribution courses (57 credit hours).

**First Semester**
- ARCH 601 Architectural Problems
  Dist. Elective (Hist., Theory, and Crit.)
- Dist. Elective (Comp., Log., and Repr.)
  Elective

**Second Semester**
- ARCH 602 Architectural Problems
- ARCH 702 Pre-Thesis Preparation
  Dist. Elective (Struct., Pract., and Env.)
- Elective

**Third Semester**
- ARCH 703 Thesis Studio*
  Elective
  Elective
  *or an approved alternative

Thesis Requirement

All M.Arch. candidates are required to develop a thesis in partial fulfillment of graduate degree requirements. Students are asked to demonstrate their ability to independently undertake research and analysis as well as develop a hypothesis and a thorough demonstration of the thesis. This must take the form of either a research thesis (written thesis) or a thesis with a design demonstration (design thesis). Both thesis formats must address architectural consequences that may be derived from within or outside conventional boundaries of the architectural discipline.

Thesis preparation begins in the penultimate semester with a 3-hour independent study course leading to the submission of a thesis proposal and the selection of a thesis director plus two faculty members as readers. While the thesis is independent work carried out by the student under the direction of a chosen adviser, it is organized as a studio in the fall term of the academic year. The thesis studio provides a support setting for both formal and informal review processes throughout the thesis semester. In early January, thesis projects are reviewed by a panel of guest critics and publicly presented in the Farish Gallery.

Master of Architecture in Urban Design

The Master of Architecture in Urban Design (MAUD) program prepares graduates for a full range of professional activities in the field of urban design. It is offered to individuals who already hold a professional degree qualifying them for registration as architects or landscape architects. The MAUD program makes extensive use of Houston as a setting for case studies and design problems. During the first year, strong emphasis is given to developing design skills, logic, and imagination through an intensive series of urban design studio courses. Three additional courses in urban history, planning, and design are required each semester. Students are also required to prepare an independent thesis during their third semester.

Doctor of Architecture

Admission to the Doctor of Architecture program requires either a bachelor’s or master’s degree in architecture and a detailed statement of research concerns and anticipated array of investigation. A student entering with a master’s degree normally takes three semesters of course work before the qualifying examination. A student with a bachelor’s degree normally requires two to five semesters of course work before the qualifying examination. Preparation for doctoral candidacy may include a foreign language or computer skills. Specific course requirements are established individually when a student is admitted to the program.

After successful completion of all required course work, students may apply to take the qualifying examination after submitting a prospectus outlining their research programs for the doctoral dissertation. The dissertation must represent an original contribution to knowledge in the field of architecture. Completion and successful defense of the dissertation will take a minimum of one year. University requirements for thesis (dissertation) preparation and defense must be carefully followed. The time limit for successful defense of the dissertation is established by university policy. Students should not expect to complete the doctor of architecture program in less than four years of full-time study.

See ARCH in the Courses of Instruction section.
Art and Art History

The School of Humanities

Chair
Hamid Naficy

Professors
Karin L. Broker
Joseph Manca
Hamid Naficy
Basilios N. Poulos
George Smith
Geoffrey L. Winningham

Associate Professors
Brian Michael Huberman
Darra Keeton
Linda E. Neagley
Todd Porterfield
John Sparagana

Assistant Professors
Marcia Brennan
Hajime Nakatani
Caroline Quenemoen

Distinguished Lecturer
Thomas McEvilley

Visiting Lecturers
Charles Dove
Fraser Stables
Prince Thomas

Adjunct Lecturer
Heather Logan

Andrew W. Mellon Post
Doctoral Fellow, Center for the Study of Cultures and the Department of Art and Art History
Nancy Deffebach

Degrees Offered: B.A., B.F.A.

Department of Art and Art History majors are students who declare a major in either the studio arts (printmaking, painting, drawing, photography, sculpture, or film production) or art history (history of art or film and media studies). Students are asked to select the track in the studio arts or art history, keeping the degree requirements listed below in mind. Each student also will be assigned to scheduled times during the year to discuss their selection of courses and any other matters of concern in the student’s academic life (study and travel abroad, scholarships and internships, career goals or options, etc.).

Degree Requirements for B.A. in Art and Art History

For general university requirements, see Graduation Requirements (pages 18–20).

Single Major Track in Studio Art.
12 courses required:
• 1 basic drawing (ARTS 225)
• 1 printmaking (ARTS 311), photography (ARTS 205), or film (ARTS 327)
• 1 basic painting (ARTS 301 or 302)
• 1 creative three-dimensional design (ARTS 102 or 291) or sculpture (ARTS 365)
• 6 courses in the studio arts
• 2 courses in art history (open selections—qualified by course prerequisites and consultation with the studio art faculty adviser)

Double Major Track in Studio Art.
10 courses required:
• 1 basic drawing (ARTS 225)
• 1 printmaking (ARTS 311), photography (ARTS 205), or film (ARTS 327)
• 1 basic painting (ARTS 301 or 302)
• 1 creative three-dimensional design (ARTS 102 or 291) or sculpture (ARTS 365)
• 4 courses in the studio arts
• 2 courses in art history (open selections—qualified by course prerequisites and consultation with the studio art faculty adviser)

Transfer Credit. No more than 2 courses may be transferred out of 10 for a single studio major, or 8 for the double major. The 2 transfer credit courses must be studio practice courses required for all double majors. Advanced placement credit may not be used by art majors or double art majors to fulfill department requirements.

Single Major Track in Art History.
12 courses required:
1. Ten courses in art history.
Within these 10 art history courses, additional requirements and guidelines have been established:
a. Student majors must take HART 101 Introduction to the History of Western Art I: Prehistoric–Gothic, HART 102 Introduction to the History of Western Art II: Renaissance–Present, and 1 course in non-Western art history
b. 1 course must be a seminar.
c. For purposes of distribution, students must take at least 1 course focusing in a period before 1750, and at least 1 course focusing in a period after 1750.
d. 1 course outside the department may be taken for credit toward the major when approved in advance by the art history adviser.
e. 1 intern class may be taken for credit toward the major.
f. All student majors are strongly encouraged to take HART 390 Theoretical Perspectives on Visual Arts and to study a foreign language.
2. Two courses in the studio arts (open selection—qualified by course prerequisites and consultation with art history faculty adviser)

An honors program also is available in art history. Requirements are somewhat different for this program, including HART 407–408 Senior Thesis. Interested students should consult with the art history faculty adviser.

Double Major Track in Art History.
10 courses required:
1. Eight courses in art history.
Within these 8 art history courses, additional requirements and guidelines have been established:
a. Student majors must take HART 101 Introduction to the History of Western Art I: Prehistoric–Gothic, HART 102 Introduction to the History of Western Art II: Renaissance–Present.
b. Each student will be encouraged to take a variety of courses to include diversity in cultures and chronology as well as foreign languages.
c. 1 intern class may be taken for credit toward the major.
2. Two courses in the studio arts (open selection—qualified by course prerequisites and consultation with art history faculty adviser)
Degree Requirements for B.F.A.

Students with a B.A. degree in art from Rice or an equivalent degree from another university may enter the Bachelor of Fine Arts (B.F.A.) program, which consists of a fifth year of intensive study in the creative arts. Students with a B.A. in a major other than art may, in exceptional cases, be admitted. Information about application forms, deadlines, and admission standards is available from the chair of the department.

For the B.F.A. degree, students must complete a total of 30 semester hours in approved courses, or the equivalent in approved major electives, at the 300 level or above. In addition to the usual departmental upper-level courses, special fifth-year courses are offered for B.F.A. candidates only.

Degree Requirements for M.A. in Art History

Owing to a high number of vacant positions in the art history section, the master’s program has been placed on hold for several years until those positions have been filled. Resumption of the graduate program is anticipated as soon as the faculty are in place.

Exhibitions and Arts Programs at Rice

Exhibitions and related activities organized by Rice University Art Gallery (Kimberly Davenport, director) enrich the teaching program of the Department of Art and Art History as well as the larger university and Houston community. The Rice Media Center mounts several photography exhibitions each year and sponsors the “Rice Cinema” film series, a public film program. Feature films include classic and contemporary titles, independent and experimental films, documentaries, international, foreign, and alternative cinema programs. The film series, which is intimately connected with the curriculum both in film and media studies and in film and photography production, includes frequent guest lecturers, panel discussions, and media events. The department also houses a Visual Resources Center, which currently holds approximately 300,000 slides and digital images related to the arts for teaching and research.

See ARTS and HART in the Courses of Instruction section.
Asian Studies

The School of Humanities and the School of Social Sciences

Director
Richard J. Smith

Professors
Anne C. Klein
Benjamin Lee
Stephen A. Tyler

Professor Emeritus
Fred R. von der Mehden

Associate Professors
Suchan Chae
Jeffrey Kripal
William Parsons
Nanxiu Qian

Assistant Professors
David Cook
Hajime Nakatani
Elora Shehabuddin

Senior Lecturers
Sarah Thal
Kerry Ward

Lecturers
Senior Lecturers
Lilly C. H. Chen
Hiroko Sato

Lecturers
David Gray
Marshall McArthur
E. Douglas Mitchell
Steven Lewis
Guatami Shah
Chao-Mei Shen
Rina V. Williams
Meng Yeh

Degree Offered: B.A.

Asian Studies is an interdisciplinary major that explores the complex interaction between political, social, religious, and other important spheres of human life in Asia. Emphasis is placed not only on the diversity and achievements of Asian civilizations but also on the ways an understanding of Asia may shed new light on Western cultural traditions. The major is built around courses in the humanities and social science divisions and a team-taught interdisciplinary core course, Introduction to Asian Civilizations. Some “Residential College Courses” may qualify for Asian Studies credit.

Requirements: The undergraduate Asian Studies major will consist of 30 hours or more of course work. All majors must take the core course, ASIA 211, and 9 additional courses drawn from at least three of the departments offering courses in Asian studies. (See specific guidelines below.)

Degree Requirements for B.A. in Asian Studies

For general university requirements, see Graduation Requirements (pages 18–20). Students majoring in Asian Studies must complete 30 semester hours or more of major course work, including:

- ASIA 211 Introduction to Asian Civilizations
- 9 additional courses drawn from at least three of the departments offering courses in Asian studies (see below)
- 6 courses at the 300 level or above
- 2 years of a single Asian language (this may include an Asian language other than those offered by Rice), though students may count no more than four semesters of Asian languages toward the major.

Any changes in the requirements for the major must be approved by the director of Asian Studies.
One or more independent reading courses (ASIA 401 for the fall and ASIA 402 for the spring) taught by Asian Studies faculty in these departments may be counted toward the major. Students may also use certain residential college courses to fulfill their major requirements, subject to the approval of the director of Asian Studies.

The following courses, not all of which are taught every year, may be used to satisfy the major requirements. Note that a number of these courses are cross-listed.

### Anthropology
- ANTH 220 *Contemporary China* (also offered as HIST 220)
- ANTH 310 *Contemporary China* (enriched version of ANTH 220; also offered as HIST 310)
- ANTH 353 *Cultures of India*

### Art and Art History
- HART 370 *Arts of China*

### Asian Studies
- ASIA 139 *Introduction to Indian Religions* (also offered as RELI 139)
- ASIA 140 *Introduction to Chinese Religions* (also offered as RELI 140)
- ASIA 211 *Introduction to Asian Civilizations*
- ASIA 221 *The Life of the Prophet Muhammad* (also offered as RELI 221)
- ASIA 231 *The Enlightenment of the Body* (also offered as RELI 231)
- ASIA 240 *Gender and Politicized Religion* (also offered as WGST 240)
- ASIA 250 *Meditation, Mysticism, and Magic* (also offered as RELI 250)
- ASIA 280 *The Asian American Experience* (also offered as ENGL 280)
- ASIA 299 *Women in Chinese Literature* (also offered as CHIN 299 and WGST 299)
- ASIA 323 *The Knowing Body: Buddhism, Gender, and the Social World* (also offered as WGST 323 and SOCI 323)
- ASIA 330 *Introduction to Traditional Chinese Poetry* (also offered as CHIN 330)
- ASIA 332 *Chinese Films and Modern Chinese Literature* (also offered as CHIN 332)
- ASIA 333 *Taiwan Literature and Film* (also offered as CHIN 333)
- ASIA 334 *Introduction to Traditional Chinese Narrative* (also offered as CHIN 334)
- ASIA 335 *Introduction to Classical Chinese Literature* (also offered as CHIN 335)
- ASIA 340 *Gender and Politicized Religion* (also offered as WGST 340)
- ASIA 344 *Korean Literature* (also offered as HUMA 344 and KORE 344)
- ASIA 345 *Origins and Development of Korean and Related Languages in East Asia* (also offered as HUMA 345 and KORE 345)
- ASIA 346 *Korean Culture and History* (also offered as KORE 346)
- ASIA 347 *Apocalyptic and Millennium Movements in Pre-Modern Asia* (also offered as RELI 347)
- ASIA 355 *Religion and Social Change in South Asia* (also offered as RELI 355)
- ASIA 363 *The Marriage of Heaven and Hell* (also offered as RELI 363)
- ASIA 365 *Mysticism and Meditation in China* (also offered as RELI 365)
- ASIA 369 *Film, Literature, and the Japanese Past* (also offered as HIST 369)
- ASIA 380 *The Asian American Experience* (also offered as ENGL 380)
- ASIA 390 *Transnational China: China and the Chinese Diaspora*
- ASIA 401 and 402 *Intermediate Chinese Language and Culture I and II*
- ASIA 403 and 404 *Intermediate Accelerated Chinese Language and Culture I and II*
- ASIA 432 *Chinese Films and Modern Chinese Literature* (also offered as ASIA 332)
- ASIA 433 *Taiwan Literature and Film* (also offered as ASIA 333)
- ASIA 434 *Introduction to Traditional Chinese Narrative* (also offered as ASIA 334)
- ASIA 435 *Introduction to Classical Chinese Literature* (also offered as ASIA 334)
- ASIA 436 *History of the Chinese Language* (also offered as LING 346)
- ASIA 439 *Chinese Teaching Practicum*
- ASIA 441 and 442 *Advanced Chinese Language and Culture I and II*
- ASIA 443 and 445 *Readings in Classical Chinese Literature*

### English
- ENGL 270 *Aspects of Modern Literature: Contemporary Themes in Asian American Literature*
- ENGL 280 *The Asian American Experience* (also offered as ASIA 280)
- ENGL 359 *The Asian American Experience* (also offered as ASIA 380)

### Hindi
- HIND 101 and 102 *Introduction to Hindi Language and Culture I and II*
- HIND 201 and 202 *Intermediate Hindi I and II*
- HIND 399 *Hindi Teaching Practicum*

### History
- HIST 219 *Patterns of the Chinese Past* (also offered as ANTH 220)
- HIST 221 *Japan in the World Until 1800*
- HIST 222 *Japan in the World Since 1800*
- HIST 250 *Traditional Chinese Culture* (enriched version of HIST 220; also offered as ANTH 310)
- HIST 341 *Pre-modern China*
- HIST 342 *Modern China*
- HIST 352 *The Comparative Modernization of China and Japan*
- HIST 369 *Film, Literature and the Japanese Past* (also offered as ASIA 369)
- HIST 405 *Issues in Comparative History*
- HIST 421 *Japan in the World Until 1800* (enriched version of HIST 221)
- HIST 422 *Japan in the World Since 1800* (enriched version of HIST 222)
- HIST 432 *Islam in South Asia* (also offered as ASIA 432 and WGST 432)
- HIST 448 *Creating Modern Japan: The Meiji Restoration*
- HIST 449 *Nation, Empire, and War: Japan in the 1930s*
- HIST 450 *Traditional Chinese Culture* (enriched version of HIST 250)
- HIST 485 *Comparing Histories: Modernization, War, and Society in Germany and Japan*

### Japanese
- JAPA 101 and 102 *Introduction to Japanese Language and Culture I and II*
- JAPA 201 and 202 *Intermediate Japanese Language and Culture I and II*
- JAPA 301 and 302 *Advanced Japanese Reading and Composition I and II*
- JAPA 399 *Japanese Teaching Practicum*
- JAPA 498 and 499 *Independent Study*

### Korean
- KORE 101 and 102 *Introduction to Korean Language and Culture I and II*
- KORE 201 and 202 *Intermediate Korean Language and Culture I and II*
- KORE 301 and 302 *Advanced Korean I and II*
- KORE 344 *Korean Literature and Culture* (also offered as ASIA 344 and HUMA 344)
- KORE 345 *Origins and Development of Korean and Related Languages in East Asia* (also offered as LING 345 and ASIA 345)
KORE 346 Korean Culture and History  
(also offered as ASIA 346)

Linguistics  
LING 345 Linguistic Structure of Korean  
(also offered as KORE 345)  
LING 346 History of the Chinese Language  
(also offered as CHIN 346)  
LING 351 and 352 Introduction to Sanskrit I and II  
(also offered as SANS 301 and 302)  
LING 440 The Chinese Novel  
LING 443 Topics in Chinese Linguistics  
LING 451 and 452 Advanced Sanskrit I and II  
(also offered as SANS 401 and 402)

Political Science  
POLI 351 Politics of Southeast Asia  
POLI 460 Seminar in Comparative Government

Religious Studies  
RELI 132 Classical and Colloquial Tibetan  
(also offered as TIBT 132)  
RELI 139 Introduction to Indian Religions  
(also offered as ASIA 139)  
RELI 140 Introduction to Chinese Religions  
(also offered as ASIA 140)  
RELI 221 The Life of the Prophet Muhammad  
(also offered as ASIA 221)  
RELI 231 The Enlightenment of the Body  
(also offered as ASIA 231)  
RELI 250 Meditation, Mysticism, and Magic  
(also offered as ASIA 250)  
RELI 322 Introduction to Buddhism  
RELI 325 Buddhism and the Female  
RELI 354 Apocalyptic and Millennium Movements in Pre-Modern Asia  
(also offered as ASIA 354)  
RELI 355 Religion and Social Change in South Asia  
(also offered as ASIA 355)  
RELI 363 The Marriage of Heaven and Hell  
(also offered as ASIA 363)  
RELI 365 Mysticism and Meditation in China  
(also offered as ASIA 365)  
RELI 441/525 Popular Religion in the Middle East  
(also offered as ASIA 441)

Sanskrit  
SANS 301 and 302 Elementary Sanskrit I and II  
(also offered as LING 351 and 352)  
SANS 401 and 402 Advanced Sanskrit I and II  
(also offered as LING 451 and 452)

Sociology  
SOCI 323 The Knowing Body: Buddhism, Gender, and the Social World  
(also offered as ASIA 323 and WGST 323)

Tibetan  
TIBT 132 Classical and Colloquial Tibetan  
(also offered as RELI 132)  
TIBT 532 Classical and Colloquial Tibetan  
(also offered as RELI 532)

University and Residential College Courses  
JONE 311 Indian Society and Politics  
UNIV 118 The Classic of Changes (I Ching) in Asian and World Culture

Women and Gender Study  
WGST 240 Gender and Politicized Religion  
(also offered as ASIA 240)  
WGST 299 Women in Chinese Literature  
(also offered as ASIA 299 and CHIN 299)  
WGST 323 The Knowing Body: Buddhism, Gender, and the Social World  
(also offered as ASIA 323 and SOCI 323)  
WGST 340 Gender and Politicized Religion  
(also offered as ASIA 240)  
WGST 399 Women in Chinese Literature  
(also offered as ASIA 399 and CHIN 399)  
WGST 432 Islam in South Asia  
(also offered as ASIA 432 and HIST 432)

See ASIA in the Courses of Instruction section.
Bioengineering

George R. Brown School of Engineering

Chair
Larry V. McIntire

Professors
Kyriacos Athanasiou
John W. Clark
David Hellums
Antonios G. Mikos
Ka-Yiu San
Kyriacos Zygourakis

Associate Professors
Fathi Ghorbel
Lydia Kavraki
Jennifer L. West

Assistant Professors
Bahman Anvari
Michael A. Barry
Rebekah Drezeck
Michael Liebschner
Jianpeng Ma
Robert Raphael

Senior Faculty Fellow
Suzanne G. Eskin

Faculty Fellow
Jorge Torres

Lecturer/Director of Laboratory Instruction
Ann Saterbak

Adjunct Professors
William Brownell
Gregory R. D. Evans
Craig J. Hartley
José A. López
Joel L. Moake
Andrew Schafer
David Sears
Jacqueline Shanks
C. Wayne Smith
Kenneth Wu

Adjunct Associate Professors
David W. Chang
Michael H. Kroll
Michael Miller
Charles W. Patrick
Peter Saggau
Mark M. Udden
Mark E. K. Wong
Alan W. Yasko
Michael Yaszemski
George Zouridakis

Adjunct Assistant Professors
Daniel E. Epner
Karen K. Hirsch
Seongbong Jo
Jan F. M. Post
Rolando E. Rumbaut

Degrees offered: B.S.B., M.S., Ph.D.

Graduate and undergraduate programs in bioengineering offer concentrations in areas that include cellular and molecular engineering; bioinstrumentation, imaging, and optics; or biomaterials and biomechanics. Research areas include biochemical engineering, biological systems modeling, biomaterials, biomedical lasers, cellular and molecular engineering, controlled release technologies, metabolic engineering, spectroscopy, systems engineering and instrumentation, thrombosis, tissue engineering, and transport processes.

Undergraduate Program. The bioengineering undergraduate program will prepare students for careers in rapidly developing areas of biomedical engineering and bioprocessing. Our unified and comprehensive program leading to the B.S. degree in bioengineering will:
• Provide students with a fundamental understanding of the life and medical sciences
• Teach students to apply engineering principles in the life and medical sciences
• Develop their critical problem solving skills in bioengineering
• Develop their ability to communicate effectively and participate in interdisciplinary teams
• Expose students to a broad education that prepares them for diverse careers

Undergraduates in bioengineering will then have the training to pursue further education in graduate school or medical school or will have strong preparation for a career in the biotechnology industry.

The B.S.B. degree is organized around a core of required courses and a selection of elective courses from three specialization areas. The specialization electives provide a flexibility that can be used to create a focus in cellular and molecular engineering; bioinstrumentation, imaging, and optics; systems engineering and instrumentation; or biomaterials and biomechanics. Because of the number of options, students should consult early with departmental advisers to plan a program that meets their needs.

Degree Requirements for the B.S. Degree in Bioengineering

For general university requirements, see Graduation Requirements (pages 18–20). The curriculum for a B.S. degree in bioengineering requires 94 credit hours, which count toward the total of 134 hours required to graduate.

Preparation. Students considering a major in bioengineering should take as freshmen MATH 101 and 102 or PHYS 126 or PHYS 125, MECH 211, BIOS 201, and MECH 211. BIOE 252 Bioengineering Fundamentals should be taken the second semester of the sophomore year. BIOE 322 and BIOE 324 Systems Physiology should be taken the second semester of the sophomore year.

Concentration Areas. Students in the B.S.B. program will choose courses from three specialization areas:
• Cellular and molecular engineering
• Bioinstrumentation, imaging, and optics
• Biomaterials and biomechanics

Students majoring in bioengineering must complete the following courses.

Core Courses

Bioengineering
BIOE 252 Bioengineering Fundamentals
BIOE 322 Systems Physiology
BIOE 324 Physiology Lab Module
BIOE 332 Thermodynamics
BIOE 342 Tissue Culture Laboratory
BIOE 372 Introductory Biomechanics/Biomaterials
BIOE 383 Biomedical Instrumentation
BIOE 420 Biosystems Transport and Reaction Processes
BIOE 441 Advanced Bioengineering Laboratory
BIOE 452 Bioengineering Design

Biosciences
BIOS 201 Introductory Biology
BIOS 301 Biochemistry
BIOS 311 or 312 (1 hour) Laboratory Module
BIOS 341 Cell Biology

Computational and Applied Mathematics
CAAM 210 or CAAM 211 Introduction to Engineering Computation
CAAM 335 or CAAM 336 Foundations of Applied Math

Math
MATH 101 Single Variable Calculus I
MATH 102 Single Variable Calculus II
MATH 211 ODEs and Linear Algebra
MATH 212 Multivariable Calculus

Please note that some of these courses may not be listed in the Courses of Instruction section of this publication. As these courses become available, they will be listed in the schedule of courses.

Specialization Areas

Four bioengineering-area elective courses, at least 2 of which must be at the senior level, will be required in one of the three areas:
• Cellular and molecular engineering
• Bioinstrumentation, imaging, and optics
• Biomaterials and biomechanics

The elective courses in these concentration areas will be announced in future course listings.

Graduate Program. The bioengineering graduate program at Rice educates its students so that they can directly interact with physicians and cell and molecular biologists, while still excelling in the quantitative capabilities so important for engineering applications.

Degree Requirements for the M.S. and Ph.D. Degrees in Bioengineering

For general university requirements, see Graduate Degrees (pages 62-67).

M.S. Program. Candidates for the M.S. degree must:
• Complete at least 18 semester hours of foundation, supporting, and advanced courses with high standing
• Fulfill a teaching requirement
• Submit an original research thesis
• Defend the thesis in a public oral examination

Ph.D. Program. Candidates for the Ph.D. degree must:
• Complete at least 36 approved semester hours of foundation, supporting, and advanced courses, with high standing. With departmental approval, the course requirements may be reduced to not less than 22 hours for students already holding an M.S. degree.
• Fulfill a teaching requirement. After their first two semesters in residence, students may be asked to spend the equivalent of 6 to 10 hours per week for a total of three semesters on teaching assignments.
• Pass the Ph.D. qualifying examinations. All Ph.D. students must pass the Ph.D. qualifying examinations usually given during the first year of study. The qualifying examinations are comprehensive tests on the knowledge acquired in the bioengineering foundation courses.

• Submit a thesis proposal. Ph.D. students must submit and successfully defend their thesis proposals by the end of their fifth semester in residence.

• Complete a three to six month industrial internship. This requirement may be waived for those with adequate previous industrial experience.

• Submit a thesis that provides evidence of their ability to carry out original research in a specialized area of bioengineering.

• Defend the thesis in a public oral examination.

Graduate students take required courses and electives in the following areas:

• Cellular and molecular engineering
• Bioinstrumentation, imaging, and optics
• Biomaterials and biomechanics

See BIOE in the Courses of Instruction section.
# Biosciences

## Biochemistry and Cell Biology

**The Wiess School of Natural Sciences**

**Chair**
Frederick B. Rudolph

<table>
<thead>
<tr>
<th>Professors</th>
<th>Assistant Professors</th>
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<tbody>
<tr>
<td>Kathleen Beckingham</td>
<td>Seiichi P.T. Matsuda</td>
</tr>
<tr>
<td>George N. Bennett</td>
<td>Edward P. Nikonowicz</td>
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<tr>
<td>Zenaido Camacho</td>
<td>Michael Stern</td>
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<tr>
<td>Raymon M. Glantz</td>
<td><strong>Assistant Professors</strong></td>
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<tr>
<td>Richard H. Gomer</td>
<td>Mary Ellen Lane</td>
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<tr>
<td>Jordan Konisky</td>
<td>Kevin R. MacKenzie</td>
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<td>Kathleen Shive Matthews</td>
<td>James A. McNew</td>
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<td>John Steven Olson</td>
<td>Yousif Shamo</td>
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<td>Ronald J. Parry</td>
<td>Scott F. Singleton</td>
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<td>Charles R. Stewart</td>
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<th>Professors Emeriti</th>
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<td>James Wayne Campbell</td>
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<td>Graham Palmer</td>
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<td>James B. Walker</td>
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<th>Associate Professors</th>
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<td>Bonnie Bartel</td>
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<td>Janet Braam</td>
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<td>Susan L. Gibson</td>
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<td>Michael C. Gustin</td>
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<tr>
<th>Lecturers/Laboratory Coordinators</th>
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<tbody>
<tr>
<td>Beth Beason-Armendarez</td>
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<tr>
<td>David R. Caprette</td>
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<td>M. Susan Cates</td>
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<tr>
<th>Adjunct Professor</th>
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<tbody>
<tr>
<td>George N. Phillips, Jr.</td>
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<tr>
<td>Florante A. Quirocho</td>
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<table>
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<tr>
<th>Faculty Fellow</th>
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<tr>
<td>Marian Fabian</td>
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# Ecology and Evolutionary Biology

**The Wiess School of Natural Sciences**

**Chair**
Ronald L. Sass

<table>
<thead>
<tr>
<th>Professors</th>
<th>Adjunct Assistant Professors</th>
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<tbody>
<tr>
<td>Paul A. Harcombe</td>
<td>Nancy Grieg</td>
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<tr>
<td>David C. Queller</td>
<td>Rosine Hall</td>
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<tr>
<td>Joan E. Strassmann</td>
<td><strong>Huxley Fellows</strong></td>
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<tr>
<td>Calvin H. Ward</td>
<td>Kevin Foster</td>
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<td>Professors Emeriti</td>
<td>William Rogers</td>
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<td>Frank M. Fisher, Jr.</td>
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<td>Charles Philpott</td>
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<td>Stephen Subtelny</td>
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<th>Associate Professors</th>
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<tbody>
<tr>
<td>Lisa Meffert</td>
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<td>Evan Siemann</td>
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<th>Lecturer/Laboratory Coordinator</th>
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<td>Barry Sullender</td>
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<th>Huxley Fellows</th>
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<td>Kevin Foster</td>
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<td>William Rogers</td>
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<th>Faculty Fellow</th>
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<td>Florante A. Quirocho</td>
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Degrees Offered: B.A., M.A., Ph.D.

The undergraduate curriculum in the biosciences is administered jointly by two departments: the Department of Biochemistry and Cell Biology and the Department of Ecology and Evolutionary Biology. This curriculum offers majors in biochemistry and in biology. Courses in the biosciences include animal behavior, animal biology, biochemistry, biophysics, cell biology, developmental biology, ecology, endocrinology, evolutionary biology, genetics, immunology, microbiology, molecular biology, neurobiology, and plant biology.

The graduate programs in biochemistry and cell biology focus on topics in biochemistry, biophysics, cell biology, development, genetics, molecular biology, and neurobiology. In the ecology and evolutionary biology program, the focus is on behavior, biogeochemistry, molecular evolution, plant community ecology, population biology, sociobiology, and wetland ecosystems.

Degree Requirements for B.A. in Biosciences

For general university requirements, see Graduation Requirements (pages 18–20). Students majoring in biosciences must complete at least 48 semester hours of courses at the 300-level or higher. The total semester hours at graduation should be at least 129 hours (128 hours if students choose the PHYS 101/102 option, and 132 hours if they choose the MATH 111/112 option). All biosciences majors must complete the following:

Mathematics

- MATH 101/102 Single Variable Calculus I and II
- MATH 211 Ordinary Differential Equations and Linear Algebra

Any 2 of the following advanced laboratory courses:

- BIOS 312 Lab Module in Molecular Biology I
- BIOS 313 Lab Module in Molecular Biology II
- BIOS 314 Lab in Cell and Developmental Biology
- BIOS 315 Lab in Physiology
- BIOS 316 Lab in Ecology
- BIOS 317 Lab in Behavior
- BIOS 318 Lab in Microbiology
- BIOS 319 Tropical Field Biology
- BIOS 320/BIOE 342 Lab in Tissue Culture
- BIOS 530 NMR Spectroscopy and Molecular Modeling
- BIOS 532 Spectroscopy
- BIOS 533 Computational Biology
- BIOS 535 Practical X-Ray Crystallography

Chemistry

- CHEM 121/122 General Chemistry with Laboratory
- CHEM 211/212 Organic Chemistry
- CHEM 215 Organic Chemistry Lab

Physics

- PHYS 125/126 General Physics I and II

Biosciences

- BIOS 201/202 Introductory Biology
- BIOS 301 Biochemistry
- BIOS 211 Introductory Lab in Biological Sciences (2 credit hours)
- BIOS 213 Introductory Lab in Ecology and Evolutionary Biology
- BIOS 311 Lab in Protein Purification

Options. One of the advanced laboratory course requirements may be satisfied by taking any of the following: (1) STAT 305 (if used to satisfy a lab requirement, this may not also be used to satisfy a lecture course requirement); or (2) BIOS 310, if taken for at least 2 credits; or (3) HONS 470/471, if the research supervisor is from one of the biosciences departments or if the research is biological in nature and preapproved by the student’s adviser; or (4) BIOS 401/402, one semester may be used to meet an advanced laboratory course requirement, and the other semester may be used to meet the requirement for a group A or B course. Students may substitute MATH 111 Fundamental Theorem of Calculus and MATH 112 Calculus and its Applications for MATH 101. They may substitute CHEM 151/152 Principles of Chemistry for CHEM 121/122. Although PHYS 125 and 126 are the preferred physics courses for biosciences majors, students who want to keep open the option of a different major may satisfy the physics requirement by taking PHYS 101 or 111 Mechanics and PHYS 102 or 112 Electricity and Magnetism (with their respective labs).

Course Sequence. Students should take the 100-level mathematics and chemistry courses in the freshman year, the 100-level physics courses and the 200-level biosciences courses in either the freshman or the sophomore year, and the 200-level chemistry courses in the sophomore year. Those with a limited background in chemistry should complete CHEM 121/122 before taking BIOS 201/202. Taking BIOS 201/202 in the freshman year gives students earlier access to upper-level courses, and is recommended for students with sufficient chemistry preparation.

Undergraduate Research. Undergraduate majors are encouraged, but not required, to pursue independent supervised research in BIOS 401/402 Undergraduate Honors Research; those who do must register concurrently in BIOS 411/412 Undergraduate Research Seminar and complete a thesis. Students may also undertake research projects in BIOS 310 Undergraduate Independent Study and HONS 470/471. See Honors Programs (page 32).

Biochemistry Major. Students majoring in biochemistry must take the following in addition to those required of all biosciences majors.

- BIOS 352 Physical Chemistry for Biosciences or CHEM 311/312 Physical Chemistry
- BIOS 302 Biochemistry
- BIOS 341 Cell Biology
- BIOS 344 Molecular Biology and Genetics
- 1 additional biosciences course from Group A
- 1 additional course for 3 or more hours at the 200 level or higher in mathematics, physics, computer science, statistics, or computational and applied mathematics; or BIOS 322, BIOS 325, or BIOS 334
- 1 additional course for 3 or more hours at the 300 level or higher in chemistry or Group A biosciences

Students may substitute 1 semester of honors research, BIOS 401 or 402, for 1 of the elective courses from Group A if their faculty supervisor is from the Department of Biochemistry and Cell Biology. NEUR 511 and 512 may be substituted for one Group A course. Biochemistry majors are assigned an adviser from the biochemistry and cell biology department.

Biology Major. Students majoring in biology must take the following in addition to the courses that are required of all biosciences majors:

- 2 biosciences courses from Group A
- 1 biosciences course from Group B
- 4 additional biosciences courses from Groups A and/or B

Students may substitute STAT 305 Introduction to Statistics for Biosciences for one of the last 4 courses provided that STAT 305 has not been used to satisfy a lab requirement.

Students may also substitute 1 semester of honors research, BIOS 401 or 402, for one of the courses from Group A if their faculty supervisor is from the Department of Biochemistry and Cell Biology, or from Group B, if their supervisor is from the
Department of Ecology and Evolutionary Biology. NEUR 511 and 512 may be substituted for one Group A course. The recommended courses for those taking a limited number of Group A courses are BIOS 302 Biochemistry, BIOS 341 Cell Biology, BIOS 344 Molecular Biology and Genetics, and BIOS 352 Physical Chemistry for Biosciences.

Students who choose to specialize in ecology and evolutionary biology should choose their 4 additional biosciences courses from Group B. Students who choose cell and molecular biology for their specialization should choose their 4 additional biosciences courses from Group A. Specialization is not required, and students may switch from one to the other if they wish. Biology majors are assigned an adviser from one of the two biosciences departments according to their specialization; those electing a general biology program may request advisers from either department. Students interested in environmental careers should consult with the ecology and evolutionary biology department for a list of recommended courses. See also Environmental Studies listings (page 175) and Environmental Science Double Major (pages 129–130).

Admission Requirements for Accelerated B.A./Ph.D. Program in Biochemistry and Cell Biology

Qualified undergraduates at Rice may apply for admission to the biochemistry and cell biology graduate program in their senior year. This allows them to complete certain course requirements for graduate studies at the same time as their upper-level undergraduate degree requirements; laboratory research performed as part of their undergraduate thesis project can serve as the initial phases of their Ph.D. thesis work. Students thus should be able to obtain their Ph.D. degree more quickly—approximately three years after earning their B.A. degree.

Criteria for admission include academic performance (grade point average of 3.30 or higher), high scores on the Graduate Record Examination (GRE), motivation, previous research experience, and personal qualities. The department Graduate Admissions Committee makes the selection.

Interested students must complete two and one-half years (or their equivalent) of undergraduate studies at Rice before applying for enrollment in the accelerated B.A./Ph.D. program. To continue in the program, they must:

- Take the GRE before receiving the B.A. degree and earn scores greater than 80 percent in the analytical and quantitative tests
- Maintain a B average in all courses in their senior year

The usual graduate requirements will apply for continuation in the program.

Degree Requirements for M.A. and Ph.D. in Biochemistry and Cell Biology

Admission. Applicants for graduate study in the Department of Biochemistry and Cell Biology must have:

- B.A. degree in biochemistry, biology, chemistry, chemical engineering, physics, or some equivalent
- Strong ability and motivation, as indicated by academic record, Graduate Record Examination (GRE) scores, and recommendations

Although the department offers an M.A. degree in biochemistry and cell biology, only on rare occasions are students who do not intend to pursue the Ph.D. degree admitted to the graduate program. The department provides a program guide titled “Graduate Program for Biochemistry and Cell Biology,” which is updated annually. For general university requirements, see Graduate Degrees (pages 62–67).

Both Ph.D. and M.A. Programs. Most of the formal course studies will be completed in the first year of residence to allow the students to commence thesis research at the end of their second semester at Rice. During the first year, all graduate students will be advised by the Graduate Advisory Committee (current composition: Braam, Gustin, MacKenzie, and Stern). This committee will determine the formal course program to be taken during the first year in residence. Students are required to have training in biochemistry, cell biology, genetics, and physical chemistry or biophysics. If students lack formal training in these subjects, they are required to take the equivalent background courses during their first year. The corresponding courses at Rice include the following:

- BIOS 301 Biochemistry
- BIOS 302 Biochemistry
- BIOS 311, 312, 313 Laboratories for the Biosciences
- BIOS 341 Cell Biology
- BIOS 344 Molecular Biology and Genetics
- BIOS 352 Physical Chemistry for the Biosciences

All Ph.D. students are required to take the following graduate-level courses:

- BIOS 575 Introduction to Research
- BIOS 581, 582 Graduate Research Seminars
- BIOS 583 Molecular Interactions
- BIOS 587 Research Design, Proposal Writing, and Professional Development

Students should complete BIOS 583 and BIOS 587 in their first and second years, respectively, and they will be responsible for the content of those course programs in their admission to candidacy examination (see below). Students also gain teaching experience by serving as discussion leaders and graders in undergraduate sections during their second year. Safety and ethics presentations are provided for first-year students.

Evaluation of Progress in Graduate Study. The Graduate Advisory Committee evaluates each student’s undergraduate record and identifies any deficiencies to be corrected (usually in the first year). Thesis advisers may require additional course work of a more specialized nature. Students must complete all additional courses before taking the admission to candidacy examination.

At the end of each semester, the department chair, in consultation with the committee and faculty, reviews student performance in the formal course work; after students complete two semesters at Rice, the faculty conducts a review. Students must maintain at least a B average and demonstrate outstanding motivation and potential for research.

Evaluation after the first year includes:

- Ongoing review of research progress by the thesis research adviser
- A research progress review examination given each year by the student’s Research Progress Review Committee
- Presentation of research progress at least once a year after the second year until submission of a complete doctoral thesis
• Completion of an oral admission to candidacy examination before the beginning of the student’s sixth semester
• Defense of the Ph.D. thesis research and text in a final public seminar presentation and oral examination attended by the student’s Thesis Committee

M.A. Program. All the above requirements and evaluation procedures apply to M.A. candidates with the following exceptions. The research progress review examination held during the M.A. student’s second full year, which is identical in format to that for Ph.D. students, replaces the admission to candidacy examination; no other preliminary examination is held before the final oral defense of the master’s thesis. M.A. candidates must complete a thesis and make a public oral defense of their research work to their Thesis Committee and other interested parties.

Degree Requirements for M.S., M.A., and Ph.D. in Ecology and Evolutionary Biology

Admission. Applicants for graduate study in the Department of Ecology and Evolutionary Biology must have:
• B.A. degree or equivalent
• Scores from the Graduate Record Examination (GRE), including the advanced examination in biology
• Strong background in biology
• Completed course work in physics, mathematics (including calculus), and chemistry (including organic chemistry)

These requirements do not preclude admission of qualified applicants who have majored in areas other than biology. Deficiencies should be made up during the first year of residence; some may be waived at the discretion of the student’s faculty adviser and the department chair.

Entering students will meet with a faculty adviser to form a course of study for the first year. All first-year students will demonstrate basic proficiency in ecology and evolutionary biology EITHER by completing one ecology course (from the following choices: BIOS 322, BIOS 324, BIOS 325, BIOS 329, or BIOS 336) and one evolutionary biology course (from the following choices: BIOS 321 or BIOS 334) OR by performing satisfactorily on a written examination that tests basic knowledge in both ecology and evolutionary biology.

All graduate students are required to complete the following graduate-level courses:
BIOS 561 Topics in Evolution, BIOS 562 Topics in Behavioral Biology, BIOS 563 Topics in Ecology, BIOS 568 Topics in Biological Diversity, BIOS 585/586 Graduate Seminar in Ecology and Evolutionary Biology. Students may substitute BIOS 432 Advanced Evolutionary Biology for BIOS 561 or BIOS 562. Students are required to complete two semesters of BIOS 591 Graduate Teaching. Students typically complete a Ph.D. in no less than 3 and no more than 5 years.

M.S. Program. In addition to the general university requirements and those listed above, the Master of Science in Ecology and Evolutionary Biology requires 10 hours of research credit.

M.A. Program. In addition to the general university requirements and those listed above, the Master of Arts in Ecology and Evolutionary Biology requires the completion and public defense of a thesis embodying the results of an original investigation.

Ph.D. Program. In addition to the general university requirements and those listed above, applicants for the Ph.D. degree in Ecology and Evolutionary Biology must:
• Maintain a grade average of B or better in courses taken in the department and satisfactory grades in courses taken outside the department
• Pass the admission to candidacy examination given by the Graduate Advisory Committee (this examination may be oral and/or written)
• Complete an original investigation and a doctoral thesis worthy of publication in a scientific journal
• Present a departmental seminar on the research
• Publicly defend the doctoral thesis

See BIOS in the Courses of Instruction section.
The Center for the Study of Languages (CSL) was founded in August 1997 to promote and enhance the study of languages at Rice University. The role of the center is to establish innovative approaches to language education, expand opportunities for language learning across the curriculum, and increase Rice students’ participation in study and work abroad. To accomplish these goals, CSL regularly sponsors professional development for instructors and graduate students in language departments.

CSL organizes workshops, lectures, and seminars as forums for departmental discussions of curricular design, assessment, and technology integration.

Through CSL, two cross-listed graduate seminars are offered: In the fall, students can take FREN 610, GERM 510, LING 610, or SPAN 610; in the spring, FREN 611, GERM 611, LING 611, or SPAN 611.

A sequence of 3 undergraduate courses on cross-cultural awareness are offered: UNIV 321, UNIV 322, and UNIV 323.
Chemical Engineering
The George R. Brown School of Engineering

Chair
Kyriacos Zygourakis

Professors
Constantine Armeniades
Walter G. Chapman
George J. Hirasaki
Larry V. McIntire
Antonios G. Mikos
Clarence A. Miller
Marc A. Robert
Ka-Yiu San
Mark Weisner

Associate Professor
Jennifer L. West

Professors Emeriti
William W. Akers
Sam H. Davis
Derek C. Dyson
Joe W. Hightower
Riki Kobayashi

Assistant Professors
Jacqueline L. Goveas
Nikolaos Mantzaris
Matteo Pasquali
Michael S. Wong

Adjunct Professor
G. D. Fisher

Adjunct Associate Professors
Thomas W. Badgwell
Waylon V. House
Glenn A. Taylor

Adjunct Assistant Professors
R. Donald Bartusiak
David A. Hokanson

Lecturers
Kenneth R. Cox
Herbert C. McKee

Degrees Offered: B.A., B.S.Ch.E., M.Ch.E., M.S., Ph.D.

This major gives undergraduates a sound scientific and technical grounding for further development in a variety of professional environments. Courses in mathematics, chemistry, physics, and computational engineering provide the background for the chemical engineering core, which introduces students to chemical process fundamentals, fluid mechanics, heat and mass transfer, thermodynamics, kinetics, reactor design, process control, and process design. Course electives may be used to create a focus area in one of the following four disciplines: bioengineering, environmental engineering, materials science/engineering, and computational engineering. Upon completing either the flexible B.A. requirements or the more scientific and professional B.S.Ch.E. requirements, students may apply for a fifth year of study leading to the nonthesis Master of Chemical Engineering (M.Ch.E.) degree. A joint M.B.A./M.Ch.E. degree is also available in conjunction with the Jesse H. Jones Graduate School of Management.

Students admitted for graduate studies leading to the M.S. or Ph.D. degrees must complete a rigorous program combining advanced course work and original research that must be formalized in an approved thesis. Graduate research is possible in a number of areas, including thermodynamics, interfacial phenomena, complex fluids, polymer science and rheology, process control and optimization, reaction engineering and catalysis, reservoir engineering, biotechnology, and biomedical engineering.
Degree Requirements for B.S. in Chemical Engineering

For general university requirements, see Graduation Requirements (pages 18–20). The B.S. degree is accredited by the Accreditation Board for Engineering and Technology (ABET). Through careful selection of other engineering and science courses, a student can develop a focus (or concentration) area in any of the following 4 engineering disciplines: environmental science/engineering, bioengineering, materials science/engineering, and computational engineering. These elective programs can be completed within the framework of a B.S. in chemical engineering and will be recognized as a separate item on a student’s transcript. Students majoring in chemical engineering must complete 100 hours in specified courses for a minimum of 132 hours at graduation. They must complete the following courses.

Chemistry
CHEM 121/122 General Chemistry with Laboratory
or CHEM 151/152 Honors Chemistry with Laboratory
CHEM 211/212 Organic Chemistry
CHEM 217 Organic Chemistry Lab
CHEM 311/312 Physical Chemistry
Any 2 of CHEM 212, CHEM 311, or CHEM 312

Chemical Engineering
CENG 301 Chemical Engineering Fundamentals
CENG 303 MATLAB, FORTRAN and MAPLE for Chemical Engineers
CENG 305 Computational Methods for Chemical Engineers
CENG 343 Chemical Engineering Lab I
CENG 390 Kinetics and Reactor Design
CENG 401/402 Transport Phenomena I and II
CENG 403 Equipment Design
CENG 404 Process Design
CENG 411/412 Thermodynamics I and II
CENG 443 Chemical Engineering Lab II
CENG 470 Process Dynamics and Control

Mathematics
MATH 101/102 Single Variable Calculus I and II
MATH 211 Ordinary Differential Equations and Linear Algebra

MATH 212 Multivariable Calculus or equivalent honors courses
CAAM 336 Differential Equations in Science and Engineering or MATH 381 Introduction to Partial Differential Equations

Physics
PHYS 101 or 111 Mechanics
PHYS 102 or 112 Electricity and Magnetism

Mechanical Engineering
MECH 211 Engineering Mechanics

Other Courses
1 approved basic science course
3 courses from the following:
ELEC 243 Electrical Circuits
MSCI 301 Materials Science
CIVI 300 Mechanics of Solids
ENVI 434 Chemical Transport and Fate in the Environment

Corequisites
CENG 303
CHEM 121/122 or CHEM 151/152
MATH 211/212

Other Courses
BIOE 420 Biosystems Transport and Reaction Processes
BIOE 460 Biotechnological Processes
ENVI 411 Air Resource Management

With the written consent of the instructor, students may register for a course without completing the required prerequisite(s). Waivers, however, are not transferrable.

Degree Requirements for M.Ch.E., M.S., and Ph.D. in Chemical Engineering

For general university requirements, see Graduate Degrees (pages 62–67).

M.Ch.E. Program. For the M.Ch.E. degree, students must complete at least 30 hours of courses beyond those counted for their undergraduate degree. At least 6 of the courses taken must be upper-level courses in chemical engineering and 1 must be an approved mathematics course. The chemical engineering courses selected should include process design (two semesters) and process control, unless courses in these subjects were taken during the student’s undergraduate studies.

M.S. Program. Candidates for the M.S. degree must:
• Complete at least 18 approved semester hours with high standing
• Submit an original research thesis
• Defend the thesis in a public oral examination
Ph.D. Program. Candidates for the Ph.D. degree must:

• Demonstrate competence in the areas of applied mathematics, thermodynamics, transport processes, and chemical kinetics and reactor design by passing qualifying examinations, usually during the first year of study.

• Complete at least 36 approved semester hours with high standing (with department approval, the course requirements may be reduced to 24 hours for students already holding an M.S. degree).

• Submit a thesis that provides evidence of their ability to carry out original research in a specialized area of chemical engineering.

• Defend the thesis in a public oral examination.

See CENG in the Courses of Instruction section.
Chemistry

The Wiess School of Natural Sciences

Chair
Kenton H. Whitmire

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W. Edward Billups
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Robert F. Curl, Jr.
Paul S. Engel
Graham P. Glass
John S. Hutchinson
James L. Kinsey
John L. Margrave
Ronald J. Parry
Ronald L. Sass
Gustavo E. Scuseria
Richard E. Smalley
James M. Tour
R. Bruce Weisman
Kenton H. Whitmire
Lon J. Wilson

Associate Professors
Vicki L. Colvin
Seiichi P. T. Matsuda

Assistant Professors
Victor Behar
Cecilia Clementi

Jeffrey Hartgerink
Anatoly Kolomeisky
Scott F. Singleton

Adjunct Professors
Marco Ciufolini
Tohru Fukuyama
Peter Harland
Michael Metzker
Graham Scott
M. Robert Willcott

Instructor
Sue Wiediger

Lecturers
Lawrence B. Alemany
Mary E. R. McHale

Distinguished Faculty Fellows
Robert H. Hauge
Ken A. Smith

Senior Faculty Fellow
Bruce R. Johnson

Faculty Fellow
Valery Khabashesku

Visiting Professor
Raphael Levine

Degrees Offered: B.A., B.S., M.A., Ph.D.

Recognizing the wide range of studies encompassed by chemistry, the department encourages undergraduates to explore offerings in other departments such as mathematics, computational and applied mathematics, biochemistry, and physics as well as upper-level courses in chemistry. An interdepartmental major is offered in chemical physics. Taking advantage of the department’s extensive facilities, each B.S. degree candidate carries out a program of individual research under the supervision of a faculty member.

Graduate studies emphasize individual research, together with a fundamental understanding of chemistry beyond the students’ specific interests. Faculty research interests include the synthesis and biosynthesis of organic natural products; the synthesis of small cycloalkanes, molecular recognition, and biological catalysis; bioinorganic and organometallic chemistry; main group element and transition metal chemistry; the chemistry of group 13 (III) elements; high-pressure and high-temperature chemistry; fluorine chemistry; chemical vapor deposition; the design of nanophase solids; molecular photochemistry and photophysics; infrared kinetic spectroscopy, laser and NMR
spectroscopy; the study of oriented molecular beams; theoretical and computational chemistry; and the study of giant fullerene molecules carbon nanotubes and their derivatives, polymer synthesis and characterization, molecular electronics, and molecular machines.

Degree Requirements for B.A. in Chemistry

For general university requirements, see Graduation Requirements (pages 18–20). Students choosing to receive a B.A. in Chemistry must have a total of at least 120 semester hours at graduation, including the following courses required of all majors.

Core Courses

Chemistry

CHEM 121/122 General Chemistry with Laboratory (or CHEM 151/152 Honors Chemistry with Laboratory)
CHEM 211/212 Organic Chemistry
CHEM 215 Organic Chemistry Lab
CHEM 311/312 Physical Chemistry
CHEM 351 Introductory Module in Experimental Chemistry I
CHEM 352 Introductory Module in Experimental Chemistry II
CHEM 353 Introductory Module in Analytical Methods
CHEM 360 Inorganic Chemistry

Mathematics

MATH 101/102 Single Variable Calculus I and II (or MATH 121/122)
MATH 211 Ordinary Differential Equations and Linear Algebra
MATH 212 Multivariable Calculus (or MATH 221/222 Honors Calculus III and IV)

Physics

PHYS 101 or 111 Mechanics
PHYS 102 or 112 Electricity and Magnetism

Other

NSCI 230 Computation in the Natural Sciences (or equivalent)

Additional Lecture Courses

At least 1 course from the following:
CHEM 401 Advanced Organic Chemistry
CHEM 430 Quantum Chemistry
CHEM 495 Transition Metal Chemistry

Additional Laboratory Courses

At least 3 advanced laboratory module credit hours from the following list:
CHEM 373 Advanced Module in Fullerenes Chemistry
CHEM 374 Advanced Module in Synthetic Chemistry
CHEM 375 Advanced Module in Inorganic Chemistry
CHEM 376 Advanced Module in Materials Chemistry
CHEM 377 Advanced Module in Catalysis
CHEM 381 Advanced Module in Physical Chemistry, A
CHEM 382 Advanced Module in Physical Chemistry, B
CHEM 383 Advanced Module in Instrumental Analysis, A
CHEM 385 Advanced Module in Polymer Chemistry
CHEM 391 Advanced Module in Catalysis
CHEM 435 Methods of Computational Quantum Chemistry

To ensure that students receive suitable breadth in their laboratory experience, advanced module selections must be approved by the student’s major committee. Other advanced laboratory courses from chemically related disciplines (biochemistry, materials science, environmental engineering, etc.) may be substituted for these advanced modules, with approval of the committee. Chemistry majors may also substitute 2 advanced organic laboratory module credit hours for CHEM 215, with approval of the committee. Three hours of CHEM 491 (taken for one entire semester) may be substituted for 1 advanced laboratory module if no other CHEM 491 credit is taken in the same semester.

Students in the chemistry B.A. major must satisfy the university distribution requirements and complete no fewer than 64 semester hours in addition to the departmental requirements for the chemistry major, giving a minimum total of 120 hours for graduation.

Degree Requirements for B.S. in Chemistry

The core chemistry, math, physics, and NSCI 230 requirements for the B.S. degree are the same as those for the B.A. degree. PHYS 201 Waves and Optics and PHYS 202 Modern Physics are recommended but not required.

In addition to the core requirements, the B.S. degree requires the following additional course and laboratory work:

• 2 courses from the Additional Lecture Courses list
• 3 advanced modules from the Additional Laboratory Courses list. As with the B.A. degree, 2 advanced laboratory modules may be substituted for CHEM 215 with departmental approval.
• At least 3 semester hours in undergraduate research (CHEM 491) in no less than 2-hour segments. With departmental approval, students may satisfy this requirement with HONS 470/471, which requires participation in CHEM 491 meetings. Students may also satisfy 3 of the 6 required hours in upper-level courses with additional research.
• 6 hours credit in upper-level courses (300 level or higher) in chemistry, mathematics, computational and applied mathematics, physics, biochemistry, or other subjects with adviser approval.

Students in the chemistry B.S. major must satisfy the distribution requirements and complete no fewer than 60 semester hours in addition to the departmental requirements for the chemistry major, giving a minimum total of 128 hours for graduation.

American Chemical Society Certification. The Rice Department of Chemistry is on the approved list of the Committee on Professional Training of the American Chemical Society and so can certify that graduates have met the appropriate standards. The B.A. degree is not certifiable. For certification, students must complete:

• All degree requirements for the B.S. degree listed above
• CHEM 495 Transition Metal Chemistry
• A department-approved course in biochemistry
• 9 hours total in upper-level courses from chemistry, physics, mathematics, computational and applied mathematics, biochemistry, or other courses in science or engineering with the approval of the department. The required course in biochemistry listed above counts toward this total.

A foreign language, preferably German, is recommended.

Chemical Physics Major. The chemical physics major leading to a B.S. degree is offered in conjunction with the Department of Physics. Students take upper-level courses in both chemistry and physics, focusing on the applications of physics to chemical systems. Students majoring in chemical physics must complete the following courses:
Chemistry 125

Core Courses
Chemistry
CHEM 121/122 General Chemistry with Laboratory
or CHEM 151/152 Honors Chemistry with Laboratory
CHEM 211 Organic Chemistry
CHEM 311/312 Physical Chemistry

Physics
PHYS 101 or 111 Mechanics
PHYS 102 or 112 Electricity and Magnetism
PHYS 201 Waves and Optics
PHYS 202 Modern Physics
PHYS 231 Elementary Physics Lab II
PHYS 301 Intermediate Mechanics
PHYS 302 Intermediate Electrodynamics

Mathematics
MATH 101/102 Single Variable Calculus I and II

or MATH 121/122
MATH 211 Ordinary Differential Equations and Linear Algebra
MATH 212 Multivariable Calculus
or MATH 221/222 Honors Calculus III and IV

Additional Courses
1 course from CHEM 212 or CHEM 360
2 courses from PHYS 311, PHYS 312, CHEM 430, or CHEM 415
6 hours from CHEM 215, CHEM 351, CHEM 352, CHEM 373–391, PHYS 331, or PHYS 332. Up to 2 hours of independent research (CHEM 491 or PHYS 491/492 may be counted toward this requirement.)
2 courses from NSCI 230, CAAM 211, CAAM 212, or mathematics or computational and applied mathematics at the 300 level or above

Admission Requirements for Accelerated B.S./Ph.D. Program in Chemistry

The high level of training provided in the Rice B.S. program enables certain specially-qualified undergraduates to enter an accelerated program that allows them to complete a Ph.D. degree within two or three years after receiving their B.S. degree. Students electing this option must begin their research during the summer following their junior year and continue the research by taking CHEM 491 during their senior year.

Degree Requirements for M.A. and Ph.D. in Chemistry

For general university requirements, see Graduate Degrees (pages 62–67). Students who have completed course work equivalent to that required for a B.A. or B.S. in chemistry may apply for admission to the Ph.D. program. For more information, see Admission to Graduate Study (pages 67–68).

M.A. Program. Students are NOT normally admitted to study for an M.A. degree. However, this degree is sometimes awarded to students who do not wish to complete the entire Ph.D. program. Candidates for the M.A. degree must:

• Complete 6 one-semester courses
• Produce a thesis that presents the results of a program of research approved by the department
• Pass a final oral examination

Students who are admitted to Ph.D. candidacy may apply for an automatic master’s degree.

Ph.D. Program. The Ph.D. is primarily a research degree. Graduate education is aimed at developing each student’s ability to conduct independent, creative research and to develop habits of inquiry that will ensure continuing intellectual development throughout their careers. The completion of the Ph.D. program is expected to take no more than five years of full-time study. Ph.D. students must:

• Complete 6 one-semester graduate-level courses. No courses are specified. Courses are chosen with the approval of the student’s advisory committee and/or faculty adviser. Courses should be at the 400 level or higher. Certain 300 level courses in other departments may be acceptable with departmental approval.
• Pass an examination involving a written and oral presentation of an original research proposal. The written proposal must conform to the format and guidelines established by the department. The guidelines are available in the department office. The proposal must be given to the committee at least one week before the date of the examination. The examination, including any follow-up work deemed necessary by the committee, must be completed within two months of the end of the student’s fourth semester.
• In addition to the course work listed above, the student must participate in CHEM 600, 601, or 602 each semester that the student is in residence.
• The student is required to participate in CHEM 700, Teaching Practicum, for four semesters.
• Submit and defend a publishable thesis that represents an original and significant contribution to the field of chemistry.

See CHEM in the Courses of Instruction section.
Civil and Environmental Engineering

The George R. Brown School of Engineering

Chair
Joseph B. Hughes

Professors
Philip B. Bedient
Ahmad J. Durrani
Arthur A. Few, Jr.
Joseph B. Hughes
Mason B. Tomson
Pul D. Spanos
Anestis S. Veletsos
Calvin H. Ward
Mark R. Wiesner

Professors Emeriti
Ronald P. Nordgren
John E. Merwin

Associate Professors
Panos Dakoulas
Satish Nagarajaiah

Assistant Professors
Matthew P. Fraser
Michael Terk
James B. Blackburn
Jean-Yves Bottero
Carroll Oubre

Adjunct Professors
James B. Blackburn
Jean-Yves Bottero
Carroll Oubre

Adjunct Assistant Professor
Charles J. Newell

Lecturers
Milton Hanks
Moyeen Haque
Stergios Liapis
John E. Merwin
Pat H. Moore
James Murtha
John M. Sedlak
Ed Segner, III
Taufiq Sheikh
Christof Spieler

Degrees Offered: B.A., B.S.C.E., M.C.E., M.E.E., M.E.S., M.S., Ph.D.

Civil and Environmental Engineering (C&EE) is a broad and diverse field of study that offers students an education with several degree options. The most flexible degree options are at the bachelor’s level, where students can major in civil engineering or complete a double major with any other Rice University major. The double major has two tracks, one in environmental engineering sciences (EES), and the other in environmental sciences (ES). For students desiring an accredited professional degree, the B.S.C.E. is offered with sub-specialization in one of three areas of concentration: structural engineering, environmental engineering, or engineering management. Three nonthesis graduate degrees (M.C.E., M.E.E., and M.E.S) are available to students who desire additional education and specialization in civil engineering, environmental engineering, or environmental sciences. Joint M.B.A./Master of Engineering degrees are also available in conjunction with the Jesse H. Jones Graduate School of Management.

Students admitted for graduate study leading to M.S. or Ph.D. degrees must complete a rigorous course of study that combines advanced course work with scholarly research culminating in the public defense of a written thesis. Graduate research is carried out in a range of areas reflecting the interests of the department’s faculty. Examples include structural engineering and mechanics, earthquake engineering, geotechnical engineering, computer-aided design, hydrology, water resources and water quality engineering, air pollution and its control, and hazardous waste treatment.

Degree Requirements for B.S.C.E. in Civil Engineering

The B.S.C.E. degree is a professional degree accredited by the Accreditation Board for Engineering and Technology (ABET). Students in the B.S. program may choose among the three specialization options as follows:

- structural engineering
- environmental engineering
- engineering management

For the B.S.C.E. degree, students must have a total of at least 134 semester hours at graduation, including the following required courses:

General Science (39 hours)
- MATH 101 Single Variable Calculus I
- MATH 102 Single Variable Calculus II
- CHEM 121 General Chemistry
- CHEM 122 General Chemistry

Structural Engineering Option: (12 hours)
- PHYS 101 Mechanics with Laboratory
- PHYS 102 Electricity and Magnetism with Laboratory
- MATH 211 Ordinary Differential Equations and Linear Algebra
- MATH 212 Multivariable Calculus
- 500 Level Approved Elective

Environmental Engineering Option: (12 hours)
- ENVI 306 Global Environmental Law and Sustainable Development
- 500 Level Approved Elective

Engineering Management Option: (12 hours)
- CIVI 322 Engineering Economics and Management
- ACCO 305 Introduction into Accounting
- 500 Level Approved Elective

Recommended Electives: (12 hours)
- ENGI 302 Ethical Decision-making for Engineers
- ENGI 321 The Professional Engineer: Roles and Responsibilities
- CIVI 201 Civil Engineers and the World We Build
- CIVI 251 Plane Surveying

See Civil Engineering website for a complete list.

Required Courses: 80 hours
Specialization Option: 12 hours
Free Electives: 18 hours
University Distribution: 24 hours
B.S. Civil Engineering Requirement: 134 hours
### Degree Requirements for B.A. in Civil Engineering

For general university requirements, see Graduation Requirements (pages 18–20). For the B.A. degree, students majoring in civil engineering must have a total of at least 120 semester hours at graduation. The B.A. is not accredited as a professional degree; detailed requirements are available from the department office.

### Degree Requirements for B.A. in Environmental Science and Engineering (as a double major)

The Department of Civil and Environmental Engineering offers the B.A. as a double major with any other major at Rice University. The double major has two tracks, one in environmental engineering sciences (EES), and one in environmental sciences (ES). Faculty from the Wiess School of Natural Sciences work with C&EE faculty in offering courses, advising, and administering the ES track of this double major. The double major is designed to accommodate:

- Students wishing to obtain a solid preparation for later graduate study in environmental engineering, environmental science, or other careers as environmental professionals (e.g., environmental economics or environmental law), and
- Students pursuing nonenvironmental careers (e.g., historians, lawyers, mechanical engineers, chemists) who will nonetheless benefit from a knowledge of the environmental dimensions of problems and issues they will confront.

The 68-semester-hour (minimum) double major in environmental science and engineering may be taken in conjunction with any stand-alone major offered in any school of the university. The EES track is highly recommended for students wishing to pursue graduate study in environmental engineering. Students wishing to obtain an ABET-accredited degree in engineering should pursue the environmental specialization within the B.S.C.E. or through a similar offering provided by the Department of Chemical Engineering. Students choosing the ES track are encouraged to select one of the following participating faculty members from the Wiess School of Natural Sciences as their adviser:

- John Anderson (Earth Science)
- Andrè Droxlter (Earth Science)
- Arthur Few (Physics and Astronomy and Environmental Science)
- F. M. Fisher (Ecology and Evolutionary Biology)
- P. A. Harcombe (Ecology and Evolutionary Biology)
- William Leeman (Earth Science)
- D. Queller (Ecology and Evolutionary Biology)
- R. L. Sass (Ecology and Evolutionary Biology)
- Dale Sawyer (Earth Science)
- J. E. Strassmann (Ecology and Evolutionary Biology)
- A. Thornhill (Ecology and Evolutionary Biology)

The key components of the double major include:

- Foundation course work in mathematics, physics, chemistry, and biology required in both tracks.
- A set of 5 undergraduate core courses, required of all double majors, that acquaint undergraduates with a range of environmental problems encountered by scientists, engineers, managers, and policy makers. Core courses in the EES track cover the breadth of water, soil, and air media within the context of engineering technologies and approaches to problem solving, and stress quantitative analytical tools used to address environmental problems. Core courses in the ES track stress the components of the global environment and their interactions.

- 24 semester hours of environmental electives, in both tracks, from four categories: (1) social sciences and business, (2) humanities and architecture, (3) natural sciences, and (4) engineering. Students may petition to have electives, in addition to those currently listed, apply toward the double major.

### Specific Course Requirements for a Double Major (B.A.) in Environmental Science and Engineering include:

**General Prerequisites**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 121 or 151</td>
<td>General Chemistry with Laboratory</td>
</tr>
<tr>
<td>CHEM 122 or 152</td>
<td>General Chemistry with Laboratory</td>
</tr>
<tr>
<td>MATH 101</td>
<td>Single Variable Calculus I</td>
</tr>
<tr>
<td>MATH 102</td>
<td>Single Variable Calculus II</td>
</tr>
<tr>
<td>PHYS 101 or 125 or 111</td>
<td>Mechanics</td>
</tr>
<tr>
<td>PHYS 102 or 126 or 112</td>
<td>Electricity and Magnetism</td>
</tr>
<tr>
<td>BIOS 201</td>
<td>Introductory Biology</td>
</tr>
<tr>
<td>BIOS 202</td>
<td>Introductory Biology (Environmental sciences track only)</td>
</tr>
<tr>
<td>NSCI 230</td>
<td>Computation in Natural Science (Environmental sciences track only)</td>
</tr>
<tr>
<td>MATH 211</td>
<td>Ordinary Differential Equations and Linear Algebra (Environmental engineering sciences track only)</td>
</tr>
</tbody>
</table>

**Core Courses: Environmental Sciences Track**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS 325</td>
<td>Ecology</td>
</tr>
<tr>
<td>GEOL 326</td>
<td>Environmental Geology</td>
</tr>
<tr>
<td>PHYS 443</td>
<td>Atmospheric Science (or ENVI 411 Air Resource Management)</td>
</tr>
</tbody>
</table>

**I of the following 3 courses:**

- ENVI 401 Introduction to Environmental Chemistry
- ENVI 412 Hydrology and Watershed Analysis
- GEOL 451 Analysis of Environmental Data

**Core Courses: Environmental Engineering Sciences Track**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVI 401</td>
<td>Introduction to Environmental Chemistry</td>
</tr>
<tr>
<td>ENVI 403 Principles of Environmental Engineering</td>
<td></td>
</tr>
<tr>
<td>ENVI 411 Air Resource Management</td>
<td></td>
</tr>
<tr>
<td>ENVI 412 Hydrology and Watershed Analysis</td>
<td></td>
</tr>
<tr>
<td>ENVI 434 Chemical Transport and Fate in the Environment</td>
<td></td>
</tr>
</tbody>
</table>

### Sample Curriculum in the Environmental Engineering Sciences Track

#### Freshman Year

<table>
<thead>
<tr>
<th>Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 101</td>
</tr>
<tr>
<td>PHYS 101</td>
</tr>
<tr>
<td>CHEM 121</td>
</tr>
<tr>
<td>Electives</td>
</tr>
<tr>
<td>HPER 101</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 102</td>
</tr>
<tr>
<td>PHYS 102</td>
</tr>
<tr>
<td>CHEM 122</td>
</tr>
<tr>
<td>Electives</td>
</tr>
<tr>
<td>HPER 102</td>
</tr>
</tbody>
</table>

#### Sophomore Year

<table>
<thead>
<tr>
<th>Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 211</td>
</tr>
<tr>
<td>BIOS 201</td>
</tr>
<tr>
<td>Environmental Elective*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Elective</td>
</tr>
<tr>
<td>Environmental Elective</td>
</tr>
</tbody>
</table>

*ENVI 201 Introduction to Environmental Systems recommended as environmental elective
## Sample Curriculum in Environmental Sciences Track

### Freshman Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 101: Single Variable Calculus I</td>
<td>NSCI 230: Computation in the Natural Sciences</td>
</tr>
<tr>
<td>PHYS 101: Mechanics</td>
<td>BIOS 201: Introductory Biology</td>
</tr>
<tr>
<td>CHEM 121: General Chemistry with Laboratory</td>
<td>Environmental Elective</td>
</tr>
<tr>
<td>Electives</td>
<td>Environmental Elective</td>
</tr>
<tr>
<td>HPER 101</td>
<td>HPER 102</td>
</tr>
<tr>
<td><strong>Spring</strong></td>
<td><strong>Spring</strong></td>
</tr>
<tr>
<td>MATH 102: Single Variable Calculus II</td>
<td>BIOS 202: Introductory Biology</td>
</tr>
<tr>
<td>PHYS 102: Electricity and Magnetism</td>
<td>Environmental Elective</td>
</tr>
<tr>
<td>CHEM 122: General Chemistry with Laboratory</td>
<td>Environmental Elective</td>
</tr>
<tr>
<td>Electives</td>
<td>Environmental Elective</td>
</tr>
</tbody>
</table>

### Sophomore Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVI 401: Introduction to Environmental Chemistry</td>
<td>NSCI 310: Principles of Environmental Science</td>
</tr>
<tr>
<td>Electives</td>
<td>Environmental Elective</td>
</tr>
<tr>
<td><strong>Spring</strong></td>
<td><strong>Spring</strong></td>
</tr>
<tr>
<td>ENVI 411: Air Resource Management</td>
<td>BIOS 203: Introduction to Environmental Chemistry</td>
</tr>
<tr>
<td>Electives</td>
<td>Environmental Elective</td>
</tr>
</tbody>
</table>

### Junior Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVI 403: Principles of Environmental Engineering</td>
<td>ENV 434: Chemical Transport and Fate in the Environment</td>
</tr>
<tr>
<td>Electives</td>
<td>Environmental Elective</td>
</tr>
<tr>
<td><strong>Spring</strong></td>
<td><strong>Spring</strong></td>
</tr>
<tr>
<td>ENV 412: Hydrology and Watershed Analysis</td>
<td>Electives</td>
</tr>
</tbody>
</table>

### Senior Year

24 semester hours of environmental electives are required, with at least 6 semester hours of course work from each of four categories. Consult the faculty adviser or Department of Environmental Science and Engineering for a list of approved electives.

## Degree Requirements for M.C.E., M.E.E., M.E.S., M.S., and Ph.D.

### Admission

Applicants pursuing graduate education in structural engineering, structural mechanics, and geotechnical engineering should have a B.S.C.E. with a significant emphasis on structural engineering, but students with other undergraduate degrees may apply if they have adequate preparation in mathematics, mechanics, and structural analysis and design. Courses such as engineering technology or construction technology, however, do not represent adequate preparation. Applicants for the M.E.E. and the M.E.S. must have a B.S. or B.A. in related areas of science and engineering. Successful applicants typically have at least a 3.00 (B) grade point average in undergraduate work and high Graduate Record Examination (GRE) scores. For general university requirements, see Graduate Degrees (pages 62–67) and Admission to Graduate Study (pages 67–68).

### M.C.E. Program

The Master of Civil Engineering (M.C.E.) is a professional nonthesis degree requiring 30 hours of study. Students with a B.S. in Civil Engineering are eligible to apply. Areas of study include structural dynamics, offshore technology, reinforced concrete and prestressed concrete, reliability of systems, random vibrations, soil dynamics, soil-structure interaction, and structural control. For general university requirements, see Graduate Degrees (pages 62–67). To earn a M.C.E. degree, students must:

- Complete 30 semester hours of approved courses

### M.B.A./M.C.E. Program

For general university requirements, see Graduate Degrees (pages 62–67). See also Accounting and Management. To earn a M.B.A./M.C.E. degree, students must:

- Complete 24 semester hours of civil engineering courses
- Complete 52 semester hours of business administration courses

### M.E.E. Program

The Master of Environmental Engineering (M.E.E.) is a professional nonthesis degree requiring 30 hours of study. Students who have a B.S. degree in any field of engineering may apply. Areas of study include hydrology and water resources engineering, water treatment, water chemistry, air pollution and its control, and hazardous waste treatment. Although the program is open to all qualified applicants, candidates usually are completing undergraduate programs in environmental engineering and wish to extend their education into a fifth year of specialized study.

### M.E.S. Program

The Master of Environmental Science (M.E.S.) is a professional nonthesis degree requiring 30 hours of study. To enter the M.E.S. program, applicants must have a B.A. or B.S. degree in any of the natural or physical sciences. Areas of study include hydrology and water resources engineering, water treatment, water chemistry, air pollution and its control, and hazardous waste treatment. Although the program is open to all qualified applicants, candidates typically are completing undergraduate programs in environmental science and wish to extend their education into a fifth year of specialized study.

### M.S. Program

The Master of Science degree is offered in both Civil Engineering and Environmental Engineering. For general university requirements, see Graduate Degrees (pages 62–67). To earn a M.S. degree, students must:

- Complete at least 24 semester hours of approved courses. For students studying Environmental Engineering this must include one course each in environmental chemistry, water treatment, hydrology, and air quality (comparable course work completed previously may be substituted for the core courses)
• Select a thesis committee according to department requirements and conduct original research in consultation with the committee
• Present and defend in oral examination an approved research thesis

Students take the oral exam only after the committee determines the thesis to be in an acceptable written format for public defense. Normally, students take two academic years and the intervening summer to complete the degree.

Students intending to extend their studies into the Ph.D. degree program should note that the department does not grant an automatic M.S. degree to candidates who have not written a satisfactory master’s thesis.

**Ph.D. Program in Civil Engineering.** For general university requirements, see Graduate Degrees (pages 62–67). To earn a Ph.D. degree in Civil Engineering, students must:

• Complete at least 48 semester hours of approved courses with high standing
• Pass a comprehensive preliminary examination testing the candidate’s knowledge of the field and ability to think in a creative manner
• Pass an oral qualifying examination on the proposed thesis research and related topics
• Complete a thesis that constitutes an original contribution to knowledge
• Pass a final public oral examination on the thesis and related topics

**Ph.D. Program in Environmental Engineering.** To earn a Ph.D. degree in environmental engineering sciences, candidates must successfully accomplish the following (spending at least four semesters in full-time study at Rice):

• Complete 90 semester hours of approved course work with high standing
• Pass a preliminary written examination on the field of environmental engineering sciences
• Pass a qualifying examination on course work, proposed research, and related topics
• Complete a dissertation indicating an ability to do original and scholarly research
• Pass a formal public oral examination on the thesis and related topics

Ph.D. candidates in environmental engineering sciences take the preliminary exam, administered by department faculty, after two semesters of course work. Candidates who pass this exam then form a doctoral committee according to department requirements. The qualifying examination administered by the doctoral committee after candidates develop a research proposal evaluates their preparation for the proposed research and identifies any areas requiring additional course work or study.

See CIVI and ENVI in the Courses of Instruction section.
Classics

The School of Humanities

Degree Offered: B.A.

The Classics major offers instruction in the Greek and Latin languages, in Greek and Roman literature (studied in the original and in translation), in the classical civilizations surveyed as a whole, and in particular themes, genres, and periods of classical culture and its influence through subsequent ages.

We recognize that students come to the study of ancient Greece and Rome with a whole spectrum of different kinds of interest. Some will want to concentrate on learning the ancient languages and reading the classical texts in the original Greek or Latin. Others will desire a broader introduction to the cultures of Greece and Rome and their legacy. Still others will be looking for some combination of these two approaches. With this in mind, the Classics major provides maximum flexibility without sacrifice of focus. We cater to students who wish to prepare for graduate school in Classics and also to students who are interested in Greek and Roman culture for other reasons and who wish to take a less specialized approach. Students will be able to explore ancient Greece and Rome from a variety of different angles and with whatever emphasis best suits their individual needs and goals.

To satisfy the requirements for the Classics major, students must complete 30 semester hours of courses listed under “Greek,” “Latin,” and “Classics.” Courses listed under “Greek” and “Latin” concentrate on the acquisition of language skills and on the reading and interpretation of texts in the original languages. Courses listed under “Classics” explore, in translation, the literature, history, philosophy, art, and other aspects of Greek and Roman civilization and also the effect that Greece and Rome have had on literature and other traditions in the West. These courses in translation regularly include freshman seminars.

Classics majors will also, if they wish, have the opportunity to engage in research. In the final semester of study, a student majoring in Classics may enroll in CLAS 493, in which the student writes a senior thesis on a topic of the student’s choice in close consultation with a particular faculty member.

Further information on the Classics major is available from faculty members. Faculty also help students arrange travel to Greece or Italy, whether to work on a dig or to study at the Intercollegiate Center for Classical Studies in Rome.

Degree Requirements for B.A. in Classics

For general university requirements, see Graduation Requirements (pages 18–20).
Students majoring in Classics must complete at least 30 semester hours (10 courses) listed under “Greek,” “Latin,” or “Classics.” The precise combination of Greek, Latin, and Classics courses is to be determined by the student in consultation with the undergraduate coordinator, in such a way as to ensure an individual course of study that is tailored to the student’s own interests and goals.

Courses taught in other departments, such as History, Philosophy, and Art History, may be cross-listed in Classics and count towards the Classics major.

Note: the requirements for the Classics major have changed. The new requirements (above) will be effective for students declaring a Classics major in 2002–03 or later. (Others should consult the General Announcements for 2001–02, or talk to the undergraduate coordinator.)

See CLAS, GREE, and LATI in the Courses of Instruction section.
Cognitive Sciences

The School of Social Sciences

Professor
Eric Margolis

John W. Clark, Jr.
Philip W. Davis
Richard E. Grandy
Stephen L. Klineberg
Randi C. Martin
Daniel Osherson
Stephen A. Tyler
Michael Watkins

Professors Emeriti
James E. Copeland
Sydney M. Lamb

Associate Professor
Suzanne E. Kemmer
David M. Lane
Eric Margolis
Devika Subramanian

Assistant Professors
Michel Achard
Michael Barlow
Michael Byrne
Nancy Niedzielski
Geoffrey Potts
Tony Ro

Degree Offered: B.A.

The cognitive sciences provide a multidisciplinary study of the mind. Researchers in this field seek to understand such mental phenomena as perception, thought, memory, the acquisition and use of language, learning, concept formation, and consciousness.

Research projects in the cognitive sciences may involve observing the development of mental skills in children, programming computers to engage in complex problem solving, or analyzing the nature of meaning. Methods include observation and analysis, model building, experimentation, and the computer simulation of mental structures and processes. Some investigators focus on relationships between brain structures and behavior, some work with computer simulation, and others work at more abstract philosophical levels.

Degree Requirements for B.A. in Cognitive Sciences

Students planning to major in cognitive sciences should take 1 or more of the following courses during their first and second years: PSYC 101 Introduction to Psychology, PHIL 103 Philosophical Aspects of Cognitive Science, LING 200 Introduction to the Scientific Study of Language, PSYC 203 Introduction to Cognitive Psychology. Students should try to complete the required 200-level core courses (see below) by the end of their sophomore year.

For general university requirements, see Graduation Requirements (pages 18–20). Cognitive sciences majors will be required to take a total of 7 core courses (see below) plus 5 additional courses. For some of the core courses, students may select from two or more options. Any of these options not used to satisfy the core may be used to satisfy the additional course requirements. Among the 5 additional courses, a minimum of 3 and a maximum of 4 of these courses should be in an area of concentration. The available areas of concentration are: linguistics, philosophy, psychology, neuroscience, and applied cognitive sciences. Suitable courses in the first 3 of these areas are listed below under their respective department headings. Suitable courses in neuroscience include any of the 3- or 4-credit courses under the neuroscience course heading below or: BIOS 421
Neurobiology, CSCI 420 Brain and Behavior, ELEC 481 Fundamentals of Systems Physiology and Biophysics, LING 411 Neurolinguistics, and PSYC 362 Biopsychology. Appropriate courses in the applied cognitive sciences concentration include PSYC 441 Human-Computer Interaction (required of all students in this concentration), PSYC 340 Research Methods, PSYC 370 Introduction to Human Factors, COMP 360 Computer Graphics, and PSYC 409 Methods in Human-Computer Interaction.

Honors program. Students in the honors program will conduct an independent research project of either one or two semesters under the guidance of one or more faculty members in the cognitive sciences program. Students intending to go into this program should consult with one or more faculty about their project before the end of their junior year. Their proposals must be accepted by their adviser(s) and the director of the program by the end of the semester preceding initiation of the project—that is, during the spring of the junior year for projects beginning in the fall, and during the fall of the senior year for projects beginning in the spring. In cases where the director is the adviser, the proposal must be approved by an additional member of the Cognitive Sciences Steering Committee. Students in the program will enroll in one or both of CSCI 481 Honors Project (fall, 3 hours) and 482 Honors Project (spring, 3 hours). Students who undertake a two-semester project will be allowed to continue into the second semester only if their adviser(s) judge(s) that they have made substantial progress during the first semester. At the end of the project, each student in the honors program will make an oral presentation of his/her project at a meeting to which all cognitive science students and faculty will be invited and will submit a final written project report to his/her adviser(s) and to the director of the program.

Core Courses
COMP 200 Elements of Computer Science (3 hours)
or COMP 210 Introduction to Principles of Scientific Computation (4 hours)
COMP 440 Artificial Intelligence
or CSCI 410 Computational Modeling of Cognitive Processes
or PSYC 352 Formal Foundations of Cognitive Sciences
or LING 317 Language and Computers
LING 200 Introduction to the Scientific Study of Language
or LING 300 Linguistic Analysis
LING 306 Language and the Mind
or LING 315 Semantics
PHIL 305 Mathematical Logic
or PHIL 312 Philosophy of Mind
PSYC 203 Introduction to Cognitive Psychology
PSYC 351 Psychology of Perception
or PSYC 362 Biopsychology

Additional Courses
Cognitive Sciences
CSCI 390 Supervised Research in Cognitive Science
CSCI 410 Computational Modeling of Cognitive Processes
CSCI 420 Brain and Behavior
CSCI 481/482 Honors Project

Computer Science
COMP 212 Intermediate Programming
COMP 440 Artificial Intelligence
COMP 450 Algorithmic Robotics

Linguistics
LING 200 Introduction to the Scientific Study of Language
LING 300 Linguistic Analysis
LING 301 Phonetics and Phonology
LING 306 Language and the Mind
LING 315 Semantics
LING 317 Language and Computers
LING 402 Syntax and Semantics
LING 403 Modern Linguistic Theory
LING 411 Neurolinguistics
LING 412 Language and Intelligence
LING 467 Computational Projects
LING 490 Discourse Analysis

Neuroscience
NEUR 500 Functional Neuroanatomy and Systems Neuroscience
NEUR 501 Cognitive Neuroscience I
NEUR 502 Cognitive Neuroscience II
NEUR 503 Molecular Neuroscience I and II
NEUR 504 Cellular Neurophysiology I and II
NEUR 505 Optical Imaging in Neuroscience
NEUR 506 Learning and Memory
NEUR 511, 512 Integrative Neuroscience Core Course (two semesters)
NEUR 515 Neural Development

Note: Many of these courses are taught by Baylor College of Medicine faculty and listings may change year to year. Check the Neuroscience website http://www.ruf.rice.edu/~neurosci/ for the latest listings.

Philosophy
PHIL 103 Philosophical Aspects of Cognitive Science
PHIL 303 Theory of Knowledge
PHIL 305 Mathematical Logic
PHIL 312 Philosophy of Mind
PHIL 353 Philosophy of Language
PHIL 357 Incompleteness, Undecidability, and Computability

See CSCI in the Courses of Instruction section.
Computational and Applied Mathematics

The George R. Brown School of Engineering

Chair
William W. Symes

Professors
John Edward Akin (joint: MEMS)
Michael M. Carroll (joint: MEMS)
Steven J. Cox
Danny C. Sorensen
William W. Symes
Richard A. Tapia

Professors Emeriti
Robert E. Bixby
Sam H. Davis (joint: CENG)
John E. Dennis
Angelo Miele (joint: MEMS)
Paul E. Pfeiffer
Henry Rachford
Chao-Cheng Wang (joint: MEMS)

Associate Professors
Liliana Borcea
Nathaniel Dean
Matthias Heinkenschloss
Yin Zhang

Assistant Professors
Mark Embree
Petr Kloucek

Adjunct Professors
J. Bee Bednar
Richard Carter
Evin Joyce Cramer
Elmer Eisner
Roland Glowinski
Emilio J. Núñez
Donald W. Peaceman
Michael B. Ray
Jacques R. Tabanou
Phuong A. Vu

Adjunct Associate Professors
Amr El-Bakry
Michael W. Troset

Adjunct Assistant Professors
Charles Audet
Aladin M. Boriek
Cassandra M. McZeal

Research Professors
Robert E. Bixby
John E. Dennis

Faculty Fellows
Alan Carle
Michael Fagan

Degrees Offered: B.A., M.C.A.M., M.C.S.E., M.A., Ph.D.

Courses within this major can provide foundations applicable to the many fields of engineering, physical sciences, life sciences, behavioral and social sciences, and computer science. Undergraduate majors have considerable freedom to plan a course of study consistent with their particular interests. The professional degree (M.C.A.M.), for persons interested in practicing within this field, emphasizes general applied mathematics, operations research and optimization, and numerical analysis, while the M.A. and Ph.D. programs concentrate on research. Faculty research interests fall in the four general areas of numerical analysis and computation, physical mathematics, operations research and optimization, and mathematical modeling in physical, biological, or behavioral sciences.

A further advanced degree program in computational science and engineering (C.S.E.) addresses the current need for sophisticated computation in both engineering and the sciences. Such computation requires an understanding of parallel and vector capabilities and a range of subjects including visualization, networking, and program-ning environments. An awareness of a variety of new algorithms and analytic techniques is also essential to maximizing the power of the new computational tools.

A joint M.B.A./Master of Engineering degree is also available in conjunction with the Jesse H. Jones Graduate School of Management.

Degree Requirements for B.A. in Computational and Applied Mathematics

Students majoring in computational and applied mathematics are required to complete the 51 semester hours spelled out in the following program of study.

Introductory Courses: Typically completed during the first two years
MATH 101 and 102 Single Variable Calculus I and II
(or honors equivalent)

MATH 211 Ordinary Differential Equations and Linear Algebra

Intermediate Courses: Typically completed by the end of the third year
CAAM 321 Introduction to Real Analysis
CAAM 322 Introduction to Real Analysis II
CAAM 335 Matrix Analysis

Advanced Courses: Two full-year sequences chosen from the following 5 areas
Numerical Analysis
CAAM 451 Numerical Linear Algebra
CAAM 453 Numerical Analysis and Ordinary Differential Equations

Differential Equations
CAAM 436 Partial Differential Equations I
CAAM 437 Partial Differential Equations II

Operations Research
CAAM 471 Linear Programming
CAAM 475 Integer and Combinatorial Optimization

Scientific Computation
CAAM 420 Computational Science I
CAAM 421 Computational Science II

Optimization
CAAM 454 Optimization Problems in Computational Engineering and Science

Electives
At least 3 courses, at or above the 300 level, selected upon consultation with the CAAM undergraduate adviser. The department strongly recommends that majors include ENGL 308 Engineering Communications among their electives.

Degree Requirements for M.C.A.M., M.A., and Ph.D. in Computational and Applied Mathematics

Admission. Admission to graduate study in computational and applied mathematics is open to qualified students holding bachelor’s or master’s degrees (or their equivalent) in engineering, mathematics, or the physical, biological, mathematical, or behavioral sciences. Department faculty evaluate the previous academic record and
students must:

- Complete at least 30 semester hours of course work approved by the department.
- Produce an original thesis acceptable to the department.
- Perform satisfactorily on a final public oral examination on the thesis proposal.

Financial Assistance. Graduate fellowships, research assistantships, and graduate scholarships are available and are awarded on the basis of merit to qualified students. Current practice in the department is for most doctoral students in good standing to receive some financial aid.

Degree Requirements for M.C.S.E. and Ph.D. in Computational Science and Engineering

C.S.E. Program Area. Recognizing the increasing reliance of modern science and engineering on computation as an aid to research, development, and design, the Department of Computational and Applied Mathematics, in conjunction with the Departments of Biochemistry and Cell Biology, Earth Science, Computer Science, Chemical Engineering, Electrical and Computer Engineering, Environmental Science and Engineering, and Statistics, has established an advanced degree program in an area called computational science and engineering (C.S.E.). The program focuses attention on modern computational techniques and provides a resource of training and expertise in this area.

The program is administered by a committee of faculty chosen by the deans of engineering and natural sciences, with ultimate oversight by the provost. The Computational Science Committee (CSC) helps students design an appropriate course of study and sets the examination requirements.

Students may enter the C.S.E. program either directly or indirectly through one of the participating departments (see list above). In all cases, however, students must fulfill the admissions requirements of one department, which acts as their associated department. Students then meet the normal requirements for graduate study within that department in every way (including teaching and other duties) except that the curriculum and examination requirements are set by the CSC.

M.C.S.E. Program. This program’s intent is to produce professional experts in scientific computing able to work as part of an interdisciplinary research team. Training is concentrated in state-of-the-art numerical methods, high-performance computer architectures, use of software development tools for parallel and vector computers, and the application of these techniques to at least one scientific or engineering area. For general university requirements, see Graduate Degrees (pages 62–67).

For the M.C.S.E. degree, students must complete at least 30 semester hours of course work approved by the CSC; no more than 2 of the courses may be taken at the 300 level, taken outside the C.S.E. program area, or satisfied by transfer credit. Each student’s program of study must meet the requirements listed below. Modification of requirements can be requested by petition.

Required Courses

- COMP 412 Compiler Construction (or ELEC 425 Computer Systems Architecture)
- CAAM 420 Computational Science I (taken as soon as possible)
- CAAM 421 Computational Science II (taken as soon as possible)

1 course from the following:

- CAAM 451 Numerical Linear Algebra
- CAAM 452 Computational Methods for Differential Equations
- CAAM 453 Numerical Analysis—Ordinary Differential Equations
- CAAM 454 Optimizing Problems in Computational Engineering and Science
- CAAM 471 Linear Programming

Computational Science Electives

4 courses selected from an approved list of COMP or CAAM courses (at least 2 courses at the 500 level)

Open Electives

2 approved courses other than CAAM or COMP courses at the 300 level or above (a computational project taken within a participating department also satisfies this requirement)

Application Areas

An appropriate sequence of courses from a participating application area at the 300 level or above

Ph.D. Program. Study at the doctoral level seeks to advance the field through original research. For general university requirements, see Graduate Degrees (pages 62–67). For the Ph.D. in computational science and engineering, students must:

- Complete a course of study approved by the CSC, including at least 2 courses outside the major area.
- Perform satisfactorily on preliminary and qualifying examinations and reviews.
- Complete 2 courses or a reading examination on an approved foreign language.
- Produce an original thesis acceptable to the CSC.
- Perform satisfactorily on a final public oral examination on the thesis.

See CAAM in the Courses of Instruction section.
Computer science is concerned with the study of computers and computing, focusing on algorithms, programs and programming, and computational systems. The main goal of the discipline is to build a systematic body of knowledge, theories, and models that explain the properties of computational systems and to show how this body of knowledge can be used to produce solutions to real-world computational problems. Computer science is the intellectual discipline underlying information technology, which is widely accepted now as the ascendant technology of the next century. Students in computer science at Rice benefit from the latest in equipment and ideas as well as the flexibility of the educational programs. The research interests of the faculty include algorithms and complexity, artificial intelligence and robotics, compilers, distributed and parallel computation, graphics and visualization, operating systems, and programming languages.

The department offers two undergraduate degrees: the Bachelor of Arts degree (B.A.) and the Bachelor of Science in Computer Science degree (B.S.C.S.). The department offers two master’s degrees: the professional Master of Computer Science degree (M.C.S.) and the research-oriented Master of Science degree (M.S.). The department also offers a doctoral degree (Ph.D.).

A joint M.B.A./Master of Engineering degree is also available in conjunction with the Jesse H. Jones Graduate School of Management.

Degree Requirements for B.A. in Computer Science

For general university requirements, see Graduation Requirements (pages 18–20). The undergraduate program in computer science has been designed to accommodate a wide range of student interests. The program is sufficiently flexible for a student to customize it to her or his interests. A student can develop a broad educational program that couples computer science education with a variety of other fields in engineering, natural sciences, the humanities, or social sciences. Alternatively, a program might be designed for a student preparing for graduate study in computer science or possibly for a career in computing and information technology.

The undergraduate program consists of required core courses, which are introductory courses covering material required of all majors; required breadth courses, which are upper-level courses ensuring knowledge in a broad range of areas; and electives that give students the freedom to explore specific interests. Students majoring in computer science must complete between 58 and 60 semester hours of courses in these three categories.

Core Courses (8 courses for a total of 28 hours, required for all majors, usually taken in the freshman and sophomore years)

MATH 101/102 Single Variable Calculus I and II
COMP 210 Introduction to Principles of Scientific Computation
COMP 212 Intermediate Programming
COMP 280 Mathematics of Computer Science
COMP 314 Applied Algorithms and Data Structures
COMP 320 Introduction to Computer Organization

1 course from the following:
MATH 211 Ordinary Differential Equations and Linear Algebra
MATH 221 Honors Calculus III

Degrees Offered: B.A., B.S.C.S., M.C.S., M.S., and Ph.D.
Ph.D. Program. The Ph.D. degree is for students planning to pursue a career in computer science research and education. The doctoral program normally requires four to six years of study. To earn a Ph.D. in computer science, students must:

- Meet departmental course requirements
- Complete a COMP 590 project by the end of the third semester
- Complete a master’s thesis by the end of the fifth semester, if a previous master’s thesis has not been approved by the graduate committee
- Pass a qualifying examination in an area of specialization within seven semesters after entering the Ph.D. program
- Conduct original research, submit an acceptable Ph.D. thesis proposal, and successfully defend the thesis proposal
- Submit an acceptable Ph.D. thesis that reports research results and pass a final oral defense

Students who successfully meet the first three requirements are awarded the Master of Science degree. Students successfully meeting all requirements, plus any departmental and university requirements, are awarded the Ph.D. degree.

Financial Assistance. Fellowships and research assistantships are available to students in the Ph.D. program. Both provide a monthly stipend for the academic year and cover all tuition expenses. More substantial monthly stipends may be available during the summer for students working on departmental research projects. In all cases, continued support is contingent on satisfactory progress in the program. Ph.D. students also are expected to assist in the teaching and administration of undergraduate and graduate courses.

Additional Information. For further information and application materials, write the Department of Computer Science–MS 132, Rice University, P.O. Box 1892, Houston, Texas 77251-1892.
Earth Science

The Wiess School of Natural Sciences

Chair
Alan Levander

Professors
John B. Anderson
Hans G. Avé Lallemant
Richard G. Gordon
William P. Leeman
Dale S. Sawyer
Manik Talwani

Associate Professors
Gerald R. Dickens
André W. Droxler
Andreas Luttge
Colin A. Zelt

Assistant Professors
Cin-Ty Lee
Adrian Lenardic
Julia Morgan

Adjunct Professors
K. K. Bissada
Carlos A. Cramer
Stephen H. Danbom
Jeffrey J. Dravins
Robert B. Dunbar
Paul M. Harris
Garry D. Jones
M. Turhan Taner
John C. Van Wagoner
Gerard M. Wellington
James L. Wilson

Adjunct Associate Professors
James Pindell
W. C. Rusty Riese

Adjunct Assistant Professors
Vitor Abreu
Robert Herrick
Scott A. Morton
Paul D. Spudis
Gabor Tari
Yitian Xiao

Degrees Offered: B.A., B.S., M.A., Ph.D.

The undergraduate program in geology focuses on a strong core of courses in all areas of earth materials, processes, and history, as well as in allied sciences. Students also gain experience with analytical equipment, computer systems, and in fieldwork. The undergraduate geophysics major combines courses that apply physics to the study of the earth’s interior with course work in geology and mathematics. The program emphasizes computational geophysics and reflection seismology. A second major can lay the foundation for a career in environmental geology, and students may also acquire certification in courses toward science as a teaching field.

Advanced graduate work is available in marine geology and paleoceanography, stratigraphy, carbonate and siliciclastic sedimentology, igneous petrology, geochemistry, structural geology, regional tectonics, global plate tectonics, reflection and crustal seismology, and computational geophysics and geodynamics. Ideally, programs of study and research incorporate more than one of these specialties.

Degree Requirements for B.S. in Geology

For general university requirements, see Graduation Requirements (pages 18–20). Completing the requirements of this major as well as university graduation requirements will involve completing about 129 credit hours. Students must complete the following courses:

Earth Science
ESCI 101 The Earth
or ESCI 102 Evolution of the Earth
or ESCI 107 Oceans and Global Change
or ESCI 108 Crises of the Earth
ESCI 105 Introductory Lab for Earth Science
ESCI 311 Mineralogy and Optics
ESCI 312 Petrology
ESCI 331 Structural Geology
ESCI 332 Sedimentology
ESCI 334 Geological and Geophysical Techniques
ESCI 390 Field Geology
ESCI 442 Exploration Geophysics I
ESCI 444 Exploration Geophysics II
or ESCI 446 Solid Earth Geophysics

Math and Other Sciences
MATH 101/102 Single Variable Calculus I and II
MATH 211 Ordinary Differential Equations and Linear Algebra
CHEM 121/122 General Chemistry with Laboratory
or CHEM 151/152 Honors Chemistry with Laboratory
PHYS 101 or 111 Mechanics
PHYS 102 or 112 Electricity and Magnetism
NSCI 230 Computation in Natural Science
or CAAM 210 Introduction to Engineering Computation (C)
or CAAM 211 Introduction to Engineering Computation (F)
or COMP 210 Introduction to Principles of Scientific Computation

Required Electives. Majors must also complete at least 12 hours in additional science and engineering courses at the 300 level or higher from an approved list; double majors must complete only 6 hours.

Environmental Geology. Students interested in careers in environmental geology are encouraged to take some of the following courses as electives.

ESCI 353 Environmental Geochemistry
ESCI 326/426 Environmental Geology
ESCI 451 Analysis of Environmental Data
ESCI 454 Geographic Information Science
ENVI 306 Global Environmental Law and Sustainable Development
ENVI 401 Introduction to Environmental Chemistry
ENVI 406 Introduction to Environmental Law
ENVI 412 Hydrology and Watershed Analysis

In addition, students may consider a second major in environmental science and engineering.

Degree Requirements for B.S. in Geophysics

Completing the requirements for this major as well as university graduation requirements will involve completing about 129 credit hours. Students must complete the following courses:
**Degree Requirements for B.A. in Geology**

For general university requirements, see Graduation Requirements (pages 18–20). Students completing the B.A. program should have a total of at least 120 hours at graduation. Students must complete the following courses:

<table>
<thead>
<tr>
<th>Earth Science</th>
<th>Math and Other Sciences</th>
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<tbody>
<tr>
<td>ESCI 101 <em>The Earth</em></td>
<td>MATH 101/102 Single Variable Calculus I and II</td>
</tr>
<tr>
<td>or ESCI 102 Evolution of the Earth</td>
<td>MATH 211 Ordinary Differential Equations and Linear Algebra</td>
</tr>
<tr>
<td>or ESCI 107 Oceans and Global Change</td>
<td>MATH 212 Multivariable Calculus</td>
</tr>
<tr>
<td>or ESCI 108 Crises of the Earth</td>
<td>CHEM 121/122 General Chemistry with Laboratory</td>
</tr>
<tr>
<td>ESCI 105 Introductory Lab for Earth Science</td>
<td>or CHEM 151/152 Honors Chemistry with Laboratory</td>
</tr>
<tr>
<td>ESCI 311 Mineralogy and Optics</td>
<td>PHYS 810 or 111 Mechanics</td>
</tr>
<tr>
<td>or ESCI 332 Sedimentology</td>
<td>PHYS 810 or 112 Electricity and Magnetism</td>
</tr>
<tr>
<td>ESCI 331 Structural Geology</td>
<td>PHYS 201 Waves and Optics</td>
</tr>
<tr>
<td>ESCI 334 Geological and Geophysical Techniques</td>
<td>PHYS 231 Elementary Physics Lab II</td>
</tr>
<tr>
<td>ESCI 390 Field Geology</td>
<td>NSCI 230 Computation in Natural Science</td>
</tr>
<tr>
<td>ESCI 442 Exploration Geophysics I</td>
<td>or CAAM 210 Introduction to Engineering Computation (C)</td>
</tr>
<tr>
<td>ESCI 444 Exploration Geophysics II</td>
<td>or CAAM 211 Introduction to Engineering Computation (F)</td>
</tr>
<tr>
<td>ESCI 446 Solid Earth Geophysics</td>
<td>or COMP 210 Introduction to Principles of Scientific Computation</td>
</tr>
<tr>
<td>ESCI 441 Geophysical Data Analysis</td>
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<tr>
<td>or ESCI 462 Tectonophysics</td>
<td></td>
</tr>
<tr>
<td>or ESCI 464 Global Tectonics</td>
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</tbody>
</table>

**Required Electives.** Students must also complete at least 12 hours in additional courses in Science and Engineering (including ESCI) at the 200 level or higher, from an approved list.

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**Undergraduate Independent Research**

The department encourages, but does not require, both geology and geophysics undergraduate majors to pursue independent supervised research in ESCI 481/482 Research in Earth Science. See also Honors Programs (page 32).

**Degree Requirements for M.A. and Ph.D. in Earth Science**

All incoming students should have a strong background in physics, chemistry, and mathematics and should have, or should acquire, a broad grounding in fundamental earth science. The department encourages applications from well-qualified students with degrees in the other sciences and mathematics. For general university requirements, see Graduate Degrees (pages 62–67). The requirements for the M.A. and Ph.D. in earth science are similar, but the Ph.D. demands a significantly higher level of knowledge, research skills, and scholarly independence. Most students need at least two years beyond the bachelor’s degree to complete the M.A. and at least two years beyond the M.A. degree for the Ph.D.

Candidates determine, with their major professor and advisory committee, a course of study following the Guidelines for Advanced Degrees in the Department of Earth Science distributed to all incoming students. For both degrees, candidates must:

- Complete 20 semester hours of course work at the 400 level and above (or other approved courses), not including research hours
- Pass a written preliminary exam
- Maintain a grade point average of 3.00 (B) or better
- Prepare a written thesis
- Produce a publishable thesis that represents an original contribution to science
- Defend the research and conclusions of the thesis in an oral examination

Students of exceptional ability with a bachelor’s degree and department approval may work directly toward the Ph.D., in which case the course of study is equivalent to that required for both degrees; performance on the examinations and the thesis, however, should be at the level required for the Ph.D.

Because the graduate programs require full-time study and close interaction with faculty and fellow students, the department discourages students from holding full (or nearly full) time jobs outside the university. Outside employment must be approved by the chair.

**See ESCI in the Courses of Instruction section.**
Economics

The School of Social Sciences

Chair
Peter Hartley

Professors
Dagobert L. Brito
Bryan W. Brown
James N. Brown
John B. Bryant
Mahmoud El-Gamal
Malcolm Gillis
Simon Grant
Peter Mieszkowski
Hervé Moulin
Joon Park
Robin C. Sickles
Ronald Soligo
George R. Zodrow

Professors Emeriti
Donald L. Huddle
Gordon W. Smith

Associate Professors
Eli Berman
Suchan Chae
Yoonsun Chang
Marc Peter Dudy

Assistant Professors
Anna Bogomolnaia
Juan Carlos Cordoba
Yuka Ohno

Adjunct Professors
Bruce M. Lairson
John Michael Swint

Adjunct Associate Professor
Charles E. Begley

Degrees Offered: B.A., M.A., Ph.D.

Undergraduates may major in either economics or mathematical economic analysis. The latter is recommended for students who intend to continue on to graduate work in economics or pursue a business or governmental job in which analytical and quantitative skills are required.

The eight major fields available for graduate study are econometrics, economic development, economic theory, industrial organization and regulation, international trade and finance, labor, macroeconomics and/or monetary theory, and public finance.

Degree Requirements for B.A. in Economics or Mathematical Economic Analysis

Economics Major. All economics majors must complete a minimum of 10 courses with a grade point average of at least 2.00.

(1) These courses include 9 economics courses and 1 course in quantitative analysis as specified in (4) below. Major requirements are not reduced for multiple majors, although some courses can satisfy the requirements for more than one major. (Please note that students may not pursue a double major in economics and mathematical economic analysis.)

(2) The following courses are required for all economics majors:

- ECON 211 Principles of Economics I
- ECON 212 Principles of Economics II
- ECON 370 Microeconomic Theory

- And either ECON 355 Financial Markets and Institutions, ECON 375 Macroeconomic Theory, or ECON 455 Money and Financial Markets.

We suggest that economics majors take ECON 211 and 212 in the freshman year and take ECON 370 in the first semester of their sophomore year, leaving the junior and senior years for advanced electives. This plan is optional, but please note that failure to take prerequisite courses in earlier years may cause scheduling problems in later years.

(3) Given that item (2) has been satisfied, at least 3 of the remaining 5 required economics courses must be selected from the following courses in applied economics.

- ECON 301 History of Economic Analysis
- ECON 355 Financial Markets and Institutions
- ECON 375 Macroeconomic Theory
- ECON 415 Labor Economics
- ECON 416 Economic History of the U.S., 1700–1945
- ECON 417 Comparative History of Industrialization
- ECON 420 International Economics
- ECON 421 International Finance
- ECON 430 Comparative Economic Systems
- ECON 435 Industrial Organization
- ECON 436 Government Regulation of Business
- ECON 437 Economics of Information, Common Property Resources, and Public Goods
- ECON 438 Economics of Law I
- ECON 439 Economics of Law II
- ECON 440 Risk, Uncertainty and Information
- ECON 445 Managerial Economics

Please note that if you count ECON 355, 375, or 455 as 1 of the required courses in item (2), you may not also count that course as 1 of the 3 courses satisfying item (3).

(4) The quantitative methods course may be selected from the following.

- ECON 382 Probability and Statistics
- ECON 400 Econometrics
- ECON 446 Applied Econometrics and Economic Modeling
- ECON 475 Integer and Combinatorial Optimization
- ECON 477 Mathematical Structure of Economic Theory
- ACCO 305 Introduction to Accounting
- CAAM 210 Introduction to Engineering Computation
- CAAM 211 Introduction to Engineering Computation
- CAAM 321 Introduction to Real Analysis
- CAAM 322 Introduction to Real Analysis II
- CAAM 335 Matrix Analysis
- CAAM 336 Differential Equations in Science and Engineering
- CAAM 353 Computational Numerical Analysis
- CAAM 376 Introduction to Management Science
- CAAM 378 Introduction to Operations Research
- CAAM 400 Case Studies in Applied Mathematics
CAAM 435 Ordinary Differential Equations
CAAM 436 Partial Differential Equations I
CAAM 437 Partial Differential Equations II
CAAM 451 Numerical Linear Algebra
CAAM 452 Computational Methods for Differential Equations
CAAM 453 Numerical Analysis and Ordinary Differential Equations
CAAM 454 Optimization Problems in Computational Engineering Science
CAAM 460 Optimization Theory
CAAM 471 Linear Programming
CAAM 474 Theory of Linear Inequalities
CAAM 475 Integer and Combinatorial Optimization
CAAM 483 Markov and Martingale Sequences—Renewal Processes
COMP 212 Intermediate Programming
COMP 312 Program Construction
COMP 314 Applied Algorithms and Data Structures
COMP 440 Artificial Intelligence
COMP 480 Concrete Mathematics
COMP 482 Design and Analysis of Algorithms
STAT 305 Introduction to Statistics for Biosciences
STAT 310 Probability and Statistics
STAT 331 Applied Probability
STAT 381 Introduction to Applied Probability
STAT 400 Econometrics
STAT 410 Introduction to Statistical Computing and Linear Models
STAT 421 Introduction to Time Series Analysis
STAT 431 Mathematical Statistics
STAT 450 Practicum in Statistical Modeling
STAT 486 Market Models

Or an equivalent or higher-level course approved in advance by the chairman of the undergraduate committee.

(5) We strongly recommend that students take two semesters of calculus (MATH 110/111 or MATH 111/112) and a course in probability and statistics (ECON 382/STAT 310). Failure to take these courses will limit the range of electives available to the student.

(6) No more than 3 of the 9 economics courses may be transferred from other schools. Additional transfer credits in economics may count toward meeting university graduation requirements but not toward fulfillment of the departmental major requirements. The required course in quantitative analysis may also be transferred. AP credits do not count as transfer credits. In order to transfer either ECON 211 or ECON 212, the student must pass a qualifying examination. Students wishing to take either the ECON 211 or ECON 212 qualifying examination must apply to the economics department office in Baker Hall 266B. For additional information on transfer credits, consult “Procedures for Transfer Credit,” available in the economics department office.

(7) Students may graduate with “Honors in Economics” by achieving a B+ (3.33) average in all economics courses and doing two semesters of independent research (for details, consult “Economics 403/404—Senior Independent Research,” available in the Economics Department Office.

(8) For additional course information, consult “Economics Course Descriptions,” compiled by the Rice chapter of the Omicron Delta Epsilon National Economics Honor Society.

(9) Please note that it is primarily the responsibility of the student to satisfy all degree requirements, including the “University Credit Requirements” and “University Distribution Requirements” specified in the General Announcements. Consult with the appropriate departmental adviser, who must sign all registration forms for each major.

(10) Students who are considering either graduate work in economics or a business or governmental job in which analytical and quantitative skills are required should seriously consider obtaining the alternative major in mathematical economic analysis.

Mathematical Economic Analysis Major. Students majoring in mathematical economic analysis must take at least 16 courses:

(1) The major in mathematical economic analysis is designed for students who are interested in graduate work in economics or a business or governmental job in which analytical and quantitative skills are required.

(2) Students must choose between the 2 majors offered by the economics department; that is, students may not double major in economics and mathematical economic analysis. Major requirements are not reduced for students with multiple majors.

(3) A minimum of 16 courses (*) in 6 areas is required. These courses must include:

(a) 5 courses in Economic Principles:
ECON 211 Principles of Economics I
ECON 212 Principles of Economics II
ECON 370 Microeconomic Theory
ECON 375 Macroeconomic Theory

(b) 3 courses in Applied Economics, selected from:
ECON 355 Financial Markets and Institutions
ECON 415 Labor Economics
ECON 416 Economic History of the U.S., 1700-1945
ECON 417 Comparative History of Industrialization
ECON 420 International Economics
ECON 421 International Finance
ECON 430 Comparative Economic Systems
ECON 435 Industrial Organization
ECON 436 Government Regulation of Business
ECON 437 Economics of Information, Common Property Resources, and Public Goods
ECON 438 Economics of Law I
ECON 439 Economics of Law II
ECON 440 Financial Theory
ECON 445 Managerial Economics
ECON 446 Applied Econometrics and Economic Modeling

(c) 1 additional 400-level course in Applied Economics as listed in (b) or a course in advanced analysis, selected from:

ECON 475 Integer and Combinatorial Optimization
CAAM 451 Numerical Linear Algebra
CAAM 452 Computational Methods for Differential Equations
CAAM 453 Numerical Analysis and Ordinary Differential Equations
CAAM 454 Optimization Problems in Computational Engineering Science
CAAM 480 Concrete Mathematics
CAAM 482 Design and Analysis of Algorithms
ECON 477 Mathematical Structure of Economic Theory
ECON 475 Macroeconomic Theory
ECON 480 Mathematical Methods in Computational Engineering and Science
ECON 481 Health Economics
ECON 482 Distributional Justice—A Microeconomic Approach
ECON 483 Public Finance—Tax Policy and Social Insurance
ECON 484 Public Expenditure Theory and Social Insurance
ECON 485 Contemporary Economic Issues
ECON 486 Contemporary Economic Issues
(d) 1 course in Econometrics: ECON 400 Econometrics

(e) 5 courses in Mathematics and Statistics:

- MATH 101 Single Variable Calculus I
- MATH 102 Single Variable Calculus II
- MATH 211 Ordinary Differential Equations and Linear Algebra
- MATH 355 Linear Algebra or CAAM 335 Matrix Analysis
- MATH 212 Multivariable Calculus or MATH 221 Honors Calculus III
- ECON 382/STAT 310 Probability and Statistics
- or STAT 410 Introduction to Statistical Computing and Linear Models
- or STAT 431 Mathematical Statistics

(f) 1 Senior Seminar or Senior Research: ECON 495/496 Senior Seminar or ECON 403/404 Senior Independent Research

(4) No more than 3 of the required economics courses and 2 of the required Mathematics (or computational and applied mathematics or statistics) courses may be transferred from other schools. Additional transfer credits in economics, mathematics, computational and applied mathematics or statistics may count toward meeting university graduation requirements but not toward fulfillment of the departmental major requirements. AP credits do not count as transfer credits. In order to transfer either 211 or 212, the student must pass a qualifying examination. Students wishing to take either the 211 or 212 qualifying examinations must apply to the economics department office in Baker Hall 266B. For additional information on transfer credits, consult “Procedures for Transfer Credit,” available in the economics department office.

(5) Students may graduate with “Honors in Mathematical Economic Analysis” by achieving a B+ (3.33) average in the 16 courses required for the major and any other economics electives taken.

(6) For additional course information, consult “Economics Course Descriptions,” compiled by the Rice chapter of the Omicron Delta Epsilon National Economics Honor Society.

(7) Please note that it is primarily the responsibility of the student to satisfy all degree requirements, including the “University Credit Requirements” and “University Distribution Requirements” specified in the General Announcements. Consult with the appropriate departmental adviser, who must sign all registration forms for each major.

Substituting Economics Graduate Courses for Undergraduate Courses.

Undergraduate majors satisfying the course prerequisites may, subject to the approval of the instructor and of the departmental undergraduate program chair, substitute certain graduate courses for undergraduate courses. Only highly motivated students with excellent aptitudes for economics and a strong background in mathematics should consider making such substitutions. Typically, but not necessarily, such students will be majors in mathematical economic analysis. Permitted substitutions are as follows:

- ECON 501 for ECON 370 (if student has completed ECON 211 at Rice)
- ECON 502 for ECON 375 (if student has completed ECON 212 at Rice)
- ECON 504 for ECON 382
- ECON 510 for ECON 400
- Furthermore, ECON 505 and ECON 508 also may be taken by undergraduates and may be used toward satisfying MTEC requirements. Specifically, ECON 505 could be used as 1 of the courses in the applied economics category or in the advanced analysis category, while ECON 508 could be used only in the advanced analysis category.

Note that this set of substitutable graduate courses includes 6 of the 7 courses required during the first year of the Ph.D. program at Rice. Accordingly, such advanced course work would be excellent preparation for graduation study in economics or in some related field such as finance. Taking such graduate courses should also open more opportunities for the student who will be seeking employment immediately after graduation.

The Five-Year M.A. Program

Advanced undergraduate students can, subject to the approval of the departmental five-year M.A. adviser, enter our five-year M.A. program. In this program, a student who has taken advantage of the full menu of graduate course substitutions available could, with an additional year of study at Rice, earn an M.A. in economics.

To obtain the M.A. degree, students must satisfy all of the requirements for Ph.D. candidacy. In particular, students must pass general examinations in microeconomic theory and in macroeconomic theory and econometrics, must pass an examination in a specialized field of study in economics, and must complete an original research project (a dissertation prospectus) that could be developed into a Ph.D. dissertation under the supervision of a faculty member. This work could be an extension of a paper written as a senior independent research project (ECON 403/404). In some cases, at the discretion of the independent research adviser, the paper produced in ECON 403/404 may fulfill this requirement. Finally, the first-year graduate requirement to take ECON 507 Mathematical Economics would be waived with the approval of the departmental five-year M.A. adviser.

Note that any student who subsequently decides to enter the economics Ph.D. program at Rice would be given graduate credit for all 500 level economics courses completed while an undergraduate. The completion of the Ph.D. dissertation typically requires at least one additional year of research (but no additional courses) beyond the M.A. degree.

Students who opt for the five-year M.A. degree program will have different backgrounds and interests on entering Rice and will choose to pursue this option at different stages in their academic careers. The following illustrates two (of many) possible paths to satisfying the MTEC major requirements, while at the same time completing all of the requirements for the M.A. degree over a five-year period.

Courses: Sample Path One

The student enters with AP credit for ECON 211/212 and MATH 101/102, and has an early interest in the five-year M.A. program.

Freshman Year
ECON 370, 375, 477, and MATH 211/212

Junior Year
ECON 502, 504, 505, 510, and 1 course from Applied Economics category

Sophomore Year
ECON 501: 1 course from Applied Economics category; and MATH 355 or CAAM 310

Senior Year
ECON 403/404 and ECON 508
Courses: Sample Path Two

The student has no relevant AP credit and/or decides to enter the five-year M.A. program only near the end of the sophomore year.

Freshman Year
ECON 211/212 and MATH 101/102

Sophomore Year
ECON 370, 375, 477, and 1 course from applied economics category; MATH 211/212

Senior Year
ECON 504, 510, 403/404, and 1 course from applied economics category

Junior Year
ECON 501, 502, 505, 508; MATH 355 or CAAM 310

Fifth Year
Complete all remaining graduate courses and pass all remaining examinations required to achieve Ph.D. candidacy.

Degree Requirements for Ph.D. in Economics

Preparation for Ph.D. Program. Applicants to the Ph.D. program should have had at least two semesters in calculus and one in linear algebra. Students who have not met these requirements may complete these prerequisites as Class III students (pages 82–83) before being admitted to the graduate program. All applicants are required to take the Graduate Record Exam.

Requirements. For general university requirements, see Graduate Degrees (pages 62–67). Candidates for the Ph.D. degree usually spend from two to two and one-half years in full-time course work and at least one year writing the dissertation; four to five years is a reasonable goal for completing the program. For the Ph.D., students must:

- Complete an approved program of at least 14 courses not including ECON 593/594 Workshop in Economics I and ECON 595/596 Workshop in Economics II
- Complete an approved program of at least 4 sections of ECON 593/594 Workshop in Economics I and ECON 595/596 Workshop in Economics II
- Perform satisfactorily on written general examinations in economic theory and econometrics
- Demonstrate proficiency in a major field by taking the relevant courses in that field and performing satisfactorily on a written examination
- Complete and defend orally a doctoral dissertation setting forth in publishable form the results of original research

See ECON in the Courses of Instruction section
No degree is offered through the Education Department. This department offers opportunities for students to explore the background, purposes, and organization of American schools as well as the major issues facing education today. Research seminars allow students to engage in projects in a wide range of topics significant to education. Most courses require observation in the classroom.

Please see the section on Education Certification under Interdepartmental Majors for information on the three teacher education plans offered at Rice: (1) a secondary teaching certificate in combination with the undergraduate degree in the elected subject field(s), (2) a Master of Arts in Teaching (M.A.T.), and (3) a postbaccalaureate plan for Class III students that involves taking those courses and state examinations needed for certification but that does not confer a degree.
Education Certification

Students in the teacher education program at Rice show a commitment to teaching, a strong record of scholarship in their subject areas, and promise as thoughtful, engaging teachers. The program emphasizes a sound liberal arts education; extensive knowledge of the subject(s) or area(s) to be taught; professional knowledge, including the relevant historical, philosophical, social, and psychological bases of education; and skills in classroom teaching, which include working with both children and adults. Graduates emerge from the program fully prepared for the teaching profession, trained in a multitude of teaching styles and methods to meet the needs of the diverse student population in schools today.

Rice offers three teacher education plans: (1) a secondary teaching certificate in combination with the undergraduate degree in the elected subject field(s), (2) a Master of Arts in Teaching (M.A.T.), and (3) a postbaccalaureate plan for Class III students that involves taking those courses and state examinations needed for certification but that does not confer a degree. All three plans include student teaching in the Rice Summer School for Grades 8–12.

To complete the program, students must:

- Make grades of C- or better in all teaching field courses and education courses (B- or better for M.A.T. students)
- Pass appropriate ExCET or TExES exams
- Be exempted from or pass the state’s Texas Academic Skills Program (TASP) exam prior to enrolling in any education courses
- Complete the courses specified by the major field adviser(s). Lists of courses for each subject are available in the Education Certification Office.
- Complete 18 hours in professional education courses as follows: either: EDUC 301/501 Philosophical, Historical, and Social Foundations of Education or EDUC 330/530 The American High School or EDUC 420 Curriculum Development
- 3 hours in the appropriate seminar(s) in teaching methods
- 6 hours in student teaching (see following)
- Satisfy a state requirement for computer literacy by completing one course in computer use or by taking the department proficiency exam. EDUC 340 Computers in Education is recommended.
- Complete all university and program requirements specified for undergraduates, M.A.T. candidates, or nondegree (Class III) candidates
- Make grades of C- or better in all teaching field courses and education courses (B- or better for M.A.T. students)
- Pass appropriate ExCET or TExES exams

Requirements for Secondary Teaching Certificate

Admission. Students may apply to the Rice University Education Certification Office for admission to the teacher education program if they show:

- Attainment of junior standing at Rice (bachelor’s degree for M.A.T. candidates) by the semester of admission to the program
- Grades of C- or better in all semester hours attempted in their teaching field(s), with an overall grade point average of 2.5 or better
- Evidence of adequate physical vigor to perform as a teacher in a classroom
- Exemption or satisfactory scores on all required preprofessional skills tests
- A completed Plan of Study approved by department representatives and the major field adviser is required before admission to the program is complete

Completion of Program. To complete the program, students must:

- Be exempted from or pass the state’s Texas Academic Skills Program (TASP) exam prior to enrolling in any education courses
- Complete the courses specified by the major field adviser(s). Lists of courses for each subject are available in the Education Certification Office.
- Complete 18 hours in professional education courses as follows: either: EDUC 301/501 Philosophical, Historical, and Social Foundations of Education or EDUC 330/530 The American High School
- EDUC 420 Curriculum Development
- 3 hours in the appropriate seminar(s) in teaching methods
- 6 hours in student teaching (see following)
- Satisfy a state requirement for computer literacy by completing one course in computer use or by taking the department proficiency exam. EDUC 340 Computers in Education is recommended.
- Complete all university and program requirements specified for undergraduates, M.A.T. candidates, or nondegree (Class III) candidates
- Make grades of C- or better in all teaching field courses and education courses (B- or better for M.A.T. students)
- Pass appropriate ExCET or TExES exams

Student Teaching. Apprenticeship (Plan A) and Internship (Plan B) programs are available. Unpaid apprenticeships are for undergraduates who wish to complete the teacher education program in four years and two six-week summer sessions. Candidates enroll for the summer sessions following their junior and senior years. Apprentices create and teach courses under the supervision of experienced master teachers and university faculty in the Rice Summer School for Grades 8–12.

Paid internships are undertaken by Master of Arts in Teaching candidates, by some Class III students, and by undergraduates who begin earning certification in their senior year. Under this plan, students serve one apprenticeship in the Rice Summer School and are then supervised through their first semester of a full-time, paid internship in a neighboring, cooperating school system. Permission for the internship is contingent upon completing a successful apprenticeship.
Apprenticeship Plan (Plan A)
(For students beginning certification in junior year and for some Class III students)

Junior Year
EDUC 301 Philosophical, Historical, and Social Foundations of Education
EDUC 305 Educational Psychology
EDUC 410–416 Relevant seminar(s) in teaching methods
EDUC 420 Curriculum Development
EDUC 440 Supervised Teaching: Summer School

Senior Year
EDUC 420 Curriculum Development

After Graduation
EDUC 440 Supervised Teaching: Summer School

Internship Plan (Plan B)
(For students beginning certification in senior year, for some Class III students, and for M.A.T. students)

Before Graduation
EDUC 301/501 Philosophical, Historical, Social Foundations of Education
or EDUC 330/530 The American High School
EDUC 305 Educational Psychology
EDUC 410–416 Relevant seminar(s) in teaching methods
EDUC 420 Curriculum Development
EDUC 440 Supervised Teaching: Summer School

After Academic Year
EDUC 540 Internship (paid internship in the fall in a local, accredited secondary school)

Requirements for M.A.T.

Admission. Applicants must have a bachelor’s degree, scholarly ability, and an interest in teaching, and they must have taken the Graduate Record Examination (GRE) aptitude test. Education faculty review each application. A limited number of tuition waivers is available. See Admission to Graduate Study (pages 65–68). Admitted students must pass or be exempted from the state’s Texas Academi7 Skills Program (TASP) exam prior to enrolling in any education courses.

Degree Requirements. For general university requirements, see Graduate Degrees (pages 60–65). The M.A.T. is a professional degree program for students who want to qualify for secondary school teaching following a liberal arts education. Most candidates entering the program have had no professional education courses. By completing the program, candidates fulfill all requirements for a Texas Provisional Teaching Certificate for grades 8–12. To earn the professional M.A.T. degree, students must complete, with grades of B- or higher, at least 33 semester hours (the need to remove deficiencies may require additional courses for certification). Requirements are as follows:

- Courses in secondary school educational theory, teaching strategies, educational practice, and evaluation
- Graduate or upper-level courses in the relevant teaching field(s) taken at Rice
- Supervised full-time teaching for one summer in the Rice Summer School for Grades 8–12, including design and implementation of courses, teaching, and evaluation
- Approval to begin an internship, based on a successful summer school teaching experience
- Supervised teaching internship for one semester in a cooperating secondary school, including the accompanying seminar

The cooperating school districts pay a regular salary for internship teaching, which covers the small cost of graduate tuition.

Requirements for Class III Certification

A nondegree (Class III) plan leading to secondary teacher certification is available for those who have earned a B.A. but do not choose to pursue a graduate degree. Candidates complete all requirements for secondary teacher certification, including professional education courses and courses in their selected fields. Interested students should direct their queries to the Education Certification Office.

Higher Education Act Title II Reports

The Higher Education Act (HEA) of the U.S. Congress requires each institution of higher education with a teacher preparation program enrolling students receiving federal assistance under this Act to report annually “to the State and the general public” certain information. This information consists of the pass rate of program completers on assessments required by the state for teacher licensure or certification, the statewide pass rate on those assessments, and other basic information on the teacher preparation program.

Rice University's Teacher Education program is accredited by the State of Texas. The first year pass rate for program completers on assessments required by the state for 2000–01 was 100% compared with 88% for the overall state pass rate. The combined cumulative pass rate for program completers on assessments required by the state for 1999–2001 was 100% compared to 93% for the overall state pass rate. A total of 20 students were enrolled in the program in 2000–01. The students spent an average of 40 hours per week in supervised student teaching with a student/faculty ratio of 2-to-1. Rice teacher education program graduates are regularly recruited by school districts in the Houston and surrounding areas because of their innovative ideas, leadership abilities, and dedication to the teaching profession.

See EDUC in the Courses of Instruction section.
The George R. Brown School of Engineering

Electrical and Computer Engineering

Chair
Don H. Johnson

Professors
Behnaam Aazhang
Athanasios C. Antoulas
Richard G. Baraniuk
Joseph R. Cavallaro
John W. Clark, Jr.
Naomi J. Halas
Don H. Johnson
J. Robert Jump
Erzsébet Merényi
Michael Orchard
Frank K. Tittel
William L. Wilson, Jr.
James F. Young

Professors Emeriti
James Boyd Pearson, Jr.
Thomas A. Rabson

Associate Professors
Edward W. Knightly
Robert D. Nowak
Peter J. Varman

Assistant Professors
Junichiro Kono
Daniel Mittleman
Vijay Pai

Adjunct Professors
Richard Barton
Akhil Bidani
John Byrne
Scott Cutler
Wayne Giles
Thomas Harman
Dirar Khoury
T. Randall Lee
Jorma Lilleberg
Gerd Marowsky
Alexander Oraevsky
Peter Saggau
Steve Sheafor
Markus Sigrist
Michael Smayling
Chiyoko Tsuchitani

Faculty Fellows
Hyeokho Choi
Rudolf H. Riedi
Ashutosh Sabharwal

Lecturers
Richard P. Massey
James B. Sinclair
James D. Wise

The specific courses required for each degree are listed in the section for that degree.

Basic Mathematics and Science Courses
MATH 101 Single Variable Calculus I
MATH 102 Single Variable Calculus II
CAAM 335 Matrix Analysis or MATH 355 Linear Algebra
MATH 212 Multivariable Calculus
PHYS 101 Mechanics
PHYS 102 Electricity and Magnetism
CHEM 121 General Chemistry
PHYS 201 Waves and Optics

Core Courses
ELEC 241 Fundamentals of Electrical Engineering I
ELEC 242 Fundamentals of Electrical Engineering II
ELEC 301 Introduction to Signals
(or COMP 212 Intermediate Programming)
ELEC 305 Introduction to Physical Electronics

Degrees Offered: B.A., B.S.E.E., M.E.E., M.S., Ph.D.

The electrical and computer engineering department strives to provide high quality degree programs that emphasize fundamental principles, respond to the changing demands and opportunities of technology, challenge the exceptional abilities of Rice students, and prepare these students for roles of leadership in their chosen careers.

In support of this goal, the electrical and computer engineering department’s objectives are to provide its undergraduate students with:

• A solid foundation in the fundamentals of electrical and computer engineering, mathematics, and science, enabling them to adapt easily to technological developments that will occur during their careers
• An in-depth exposure to one area of electrical and computer engineering, emphasizing its relationship to the basic framework of the discipline and to other appropriate topics outside that framework

• Courses and projects that actively involve them in their own education and enhance their ability to formulate and solve real-world design and research problems
• A broad education outside of engineering and science that emphasizes the role of electrical and computer engineering in society and builds the leadership skills necessary to deal with the increasing impact of technology

Graduate and undergraduate programs in electrical and computer engineering offer concentrations in areas that include system control theory, bioengineering, communications, quantum electronics and lasers, computer systems, and electronic materials, devices, and circuits. Bioengineering is primarily a graduate program, although undergraduates may take introductory courses in this field as electives or as part of their specialization area courses.

Undergraduate Program. The department offers two undergraduate degrees, the Bachelor of Arts (B.A.) and the Bachelor of Science in Electrical Engineering (B.S.E.E.). The B.A. program is highly flexible, permitting a student to tailor the program to his or her interests, be they broad or highly focused. The B.S.E.E. degree is approved by the Accreditation Board for Engineering and Technology (ABET); requires more scientific and professional courses, for a total of at least 134 semester hours; and has fewer electives. Outstanding students interested in careers in research and teaching may enter graduate school after either bachelor degree. Both degrees are organized around a core of required courses and a selection of elective courses from five specialization areas. Each student’s program must contain a depth sequence in one area and courses from at least two areas to provide breadth. The specialization electives provide a flexibility that can be used to create a focus, such as optical communications, that crosses traditional areas. Because of the number of options, students should consult early with departmental advisers to plan a program that meets their needs.

The B.A. degree provides a basic foundation in electrical and computer engineering that the student can build upon to construct a custom program. Because of its flexibility and large number of free electives, the B.A. can be combined easily with another major to create an interdisciplinary program. This may be particularly appropriate for students planning further study in law, business, or medicine.

The B.S.E.E. is the usual degree taken by those students planning a career of engineering practice. It is accredited by ABET and can reduce the time required to become a licensed professional engineer. Accreditation and professional licensing are important for some careers, and many states require licensure for those providing engineering services directly to the public, for example, as a consultant. The program for the B.S.E.E. degree requires greater depth than the B.A. degree but still provides considerable flexibility. Students who place out of required courses but who do not have credit must substitute other approved courses in the same area.

The requirements for the two degrees are grouped into four categories, listed below. The specific courses required for each degree are listed in the section for that degree.
Core Courses (cont.)
ELEC 320 Introduction to Computer Organization
ELEC 326 Digital Logic Design

Restricted Electives

Computation
CAAM 210 Introduction to Engineering Computation
CAAM 211 Introduction to Engineering Computation
COMP 210 Introduction to Principles of Scientific Computation (COMP 210 is a prerequisite for many other computer courses.)

Laboratory
ELEC 201 Introduction to Engineering Design
ELEC 303 Systems Laboratory
ELEC 327 Digital Logic Design Laboratory
ELEC 423 VLSI Design II
ELEC 433 Communications Systems Lab
ELEC 465 Physical Electronics Lab
ELEC 490 Electrical Engineering Projects

Specialization Areas. The following groups of courses focus on specific areas within electrical and computer engineering. The systems area involves the study of processing and communicating signals and information through systems of devices, control and robotics, signal and image processing, and communications. The computer engineering area provides a broad background in computer systems engineering, including computer architecture, hardware engineering, software engineering, and computer systems performance analysis. The physical electronics area encompasses studies of electronic materials, semiconductor and optoelectronic devices, lasers, and photonics.

Computer Engineering
COMP 212 Intermediate Programming
COMP 311 Programming Languages
ELEC 322 Applied Algorithms and Data Structures
ELEC 421 Operating Systems and Concurrent Programs
COMP 410 Software Construction Methodology
COMP 413 Distributed Program Construction
COMP 422 Parallel Computing
ELEC 422 VLSI Design
ELEC 424 Computer Systems Design
ELEC 425 Computer Systems Architecture
ELEC 426 Digital Systems Design
ELEC 428 Computer Systems Performance
ELEC 429 Introduction to Computer Networks

Bioengineering
ELEC 481 Computational Neuroscience
ELEC 482 Physiological Control Systems
ELEC 483 Introduction to Biomedical Instrumentation and Measurement Techniques

Systems: Control, Communications, and Signal Processing
ELEC 301 Introduction to Signals and Systems
ELEC 302 Introduction to Systems
ELEC 430 Communication Theory and Systems
ELEC 431 Digital Signal Processing
ELEC 436 Control Systems I

Electronic Circuits and Devices
ELEC 342 Electronic Circuits
ELEC 427 Pulse and Digital Circuits
ELEC 435 Electromechanical Devices and Systems
ELEC 442 Advanced Electronic Circuits
ELEC 443 Power Electronic Circuits
ELEC 462 Semiconductor Devices

Quantum Electronics
PHYS 202 Quantum Mechanics
ELEC 306 Electromagnetic Fields and Devices
ELEC 361 Electronic Materials and Quantum Devices
ELEC 462 Semiconductor Devices

The department may add or delete courses in the areas. In addition, graduate courses and equivalent courses from other departments may be used to satisfy area requirements with permission; consult with departmental advisers for the latest information. A course can satisfy only one program requirement. ELEC 491/492 may be used to satisfy requirements in any area, depending on the nature of the design project.

Degree Requirements for B.S. in Electrical Engineering

For general university requirements, see Graduation Requirements (pages 18–20). Students completing the B.S.E.E. program must have a total of at least 134 semester hours in order to graduate.

Basic Mathematics and Science. Students must take all of the courses listed under basic mathematics and science courses. They must also take additional math and science courses, approved by the department, to bring their total to 32 hours.

Core Courses. Students must take all of the courses listed under core courses, except that they need take only 1 of ELEC 301 and COMP 212.

Restricted Electives. 1 computation course and 1 laboratory course.

Specialization Areas. Students in the B.S.E.E. program choose courses from 2 or more specialization areas. Students must take at least 7 specialization courses, including at least 4 courses in one area and courses from at least 2 different areas. Students taking either ELEC 301 or COMP 212 to satisfy a core course requirement may not use that course to satisfy a specialization area requirement. Because of the number of options, students should consult early with departmental advisers to plan a program that meets their needs. Students going on to a technical career or graduate school may need to use unrestricted electives to create a coherent program.

Design Component. At least 1 of the specialization area courses must be an approved design course.

Degree Requirements for B.A. in Electrical and Computer Engineering

For general university requirements, see Graduation Requirements (pages 18–20). Students completing the B.A. program must have a total of at least 120 semester hours at graduation.

Basic Mathematics and Science. Students in the B.A. program must take all of the courses listed under basic mathematics and science courses, with the following exceptions: CHEM 121 is not required, and MATH 355 Linear Algebra, MATH 381 Introduction to Partial Differential Equations, or CAAM 553 Computational Numerical Analysis may be taken instead of ELEC 331.
Core Courses. All of the courses listed under core courses are required for the B.A. degree, except for COMP 212, ELEC 301, and ELEC 391. Students also have the following options: CAAM 353 Computational Numerical Analysis may be taken instead of MATH 212, and CHEM 121 General Chemistry may be taken instead of PHYS 201.

Restricted Electives. 1 computation course and 1 laboratory course.

Specialization Areas. A 2-course sequence in 1 area and courses from at least 2 areas.

Degree Requirements for M.E.E., M.S., and Ph.D. in Electrical and Computer Engineering

For general university requirements, see Graduate Degrees (pages 62–67). Students should also consult department advisers for specific courses of study.

Master’s Degree Programs. A candidate for the professional M.E.E. degree must complete an approved sequence of 10 advanced courses, totaling at least 30 hours. At least 4 of these must be technical courses at the 500 level or higher. At least 7 of the courses must be technical courses at the 400 level or higher. All 10 courses must be at the 300 level or higher and 2 credit hours or more. Specialization is possible in the general areas of bioengineering, signal processing, communication and control theory, electro-optics and physical electronics, and computer science and engineering. A candidate for the M.S. degree must complete both an approved course of study and an approved research program, culminating in an acceptable thesis. (The M.S. degree is not a terminal degree but part of the Ph.D. program.)

A joint M.B.A./Master of Engineering degree is also available in conjunction with the Jesse H. Jones Graduate School of Management.

Ph.D. Program. Candidates should expect to spend a minimum of three academic years of graduate study in this program. Normally, candidates complete the requirements for an M.S. degree as part of the Ph.D. program. For the Ph.D., students must:

• Obtain high standing in an approved course program
• Perform satisfactorily on qualifying examinations
• Complete a satisfactory dissertation of independent and creative research
• Pass a final oral examination

See ELEC in the Courses of Instruction section.
English

The School of Humanities

Chair
Susan Wood

Professors
Jane Chance
Terrence Arthur Doody
Linda P. Driskill
J. Dennis Huston
Walter Whitfield Isle
Helena Michie
Wesley Abram Morris
Robert L. Patten
Meredith Skura
Edward A. Snow

Professors Emeriti
Max Apple
Edward O. Doughtie
Alan Grob
John Meixner
David Lee Minter
William Bowman Piper

Associate Professors
José F. Aranda, Jr.
Scott S. Derrick
Lucille P. Fultz
Betty Joseph
Colleen R. Lamos
Caroline Levander
Susan Lurie

Assistant Professors
Krista Comer
Elizabeth A. Dietz
Sarah Ellenzweig
Kirsten Ostherr

Writer in Residence
Marsha Recknagel

Lecturers
Jill “Thad” Logan
Mary L. Tobin

Lecturers on Theatre
Mark Ramont
Patricia Rigdon

Degrees Offered: B.A., M.A., Ph.D.

The undergraduate program offers opportunities for students to improve their expository writing skills and explore literature while learning to appreciate it critically. The department also offers a variety of courses in creative writing, including poetry, fiction, and creative nonfiction. In addition, it also is home to the Theatre Program, which offers courses in theatre and dramatic literature. The graduate program in English offers concentrations in all fields of British and American literature and literary theory.

Degree Requirements for B.A. in English

For general university requirements, see Graduation Requirements (pages 18–20). Students majoring in English must complete 36 semester hours in English with at least 24 hours in courses at the 300 level or above. A double major requires 30 hours in English with at least 18 hours in the upper-level courses. HUMA 101 and 102 may be counted toward the English major. All English majors must take the following:
• ENGL 210 Major British Writers: Chaucer to 1800
• ENGL 211 Major British Writers: 1800 to Present
• ENGL 260 Introduction to the Study of American Literature
• 3 hours in upper-level courses in each of the following areas: (1) English literature before 1800, (2) English literature after 1800, and (3) American literature

The department recommends that all English majors take courses in English and American history and, if they plan to do graduate work, at least 6 hours of upper-level courses in a foreign language.

Degree Requirements for M.A. and Ph.D. in English

For general university requirements, see graduate Degrees (pages 62-67). As part of their training, graduate students participate in both the teaching and research activities of the department. Upon entering, students will be assigned a Program Advisory Committee (PAC), consisting of two or three faculty members. In consultation with their PAC, students will design their own individualized program structured by the minimal requirements listed below. For more detailed information, please ask for a copy of the Department’s Program Outline.

M.A. Program. The English department does not have an M.A. program, but offers the M.A. degree to those Ph.D. students who have achieved candidacy and are in the process of completing their doctorate, and to qualified Ph.D. students who leave the program before completing their doctorate. To receive an M.A. students must:
• Satisfactorily complete at least 30 hours of graduate work in English at Rice University. Courses must be those that count towards the Ph.D. in English. These include: courses numbered in the 500s and 600s in the English department excluding 510, 601/602, 603/604; up to 2 approved graduate or equivalent courses taken in other departments; and up to 2 approved courses in the English department numbered 400 and above. Courses taken to fulfill the language requirement are excluded. Students must satisfactorily complete ENGL 600 and distribution requirements for the Ph.D. (See below.)
• Satisfactorily complete 2 Teaching Assistantships (ENGL 601/602). These do not count toward the 30-hour requirement.

Ph.D. Program. To gain admission to Ph.D. candidacy, students must satisfy the first seven of the following requirements, and they must receive approval for their dissertation prospectus from the Department’s Graduate Committee. To earn a Ph.D. in English, candidates must also complete the last 2 requirements. Students must:
(1) Satisfactorily complete at least 33 hours of course work plus ENGL 510, exclusive of the thesis. Courses can include: graduate courses in the English department numbered 500 to 600, excluding 510, 601/602, 603/604; up to 2 approved undergraduate courses in another department; and up to 2 approved courses in the English department numbered 400 and above. Courses taken to fulfill the language requirement are excluded. Students must satisfactorily complete ENGL 600 and distribution requirements for the Ph.D. (See below.)
(2) Satisfactorily complete the following 2 required courses: ENGL 600, Professional Methods, and ENGL 605, Third-Year Writing Workshop. These count toward the 33-hour requirement.
(3) Satisfactorily complete the distribution requirement, which consists of 2 approved courses on literature before 1800 and 2 after 1800. These count toward the 33-hour requirement.
(4) Satisfactorily complete the teaching requirement by serving twice as a teaching assistant, by completing ENGL 510/511 Pedagogy, and by teaching a lower-level course designed in conjunction with the instructor of ENGL 510. ENGL 510 does not count toward the 33-hour requirement.
(5) Pass a six-hour written preliminary examination focusing on two lists of books, one representing the full range of a literary period as defined by the student and his or her preliminary committee, the other representing a second literary period, a single author, a genre traced over a period of time more comprehensive than that covered by the first list, or a particular theoretical or critical approach studied with reference to its own history and traditions as well as to the historical field of the first exam.
(6) Complete a dissertation prospectus that proposes a topic and an approach, offers a context to the topic in terms of work already done, that offers an outline of chapters or sections, and that includes a substantial bibliography.
(7) Complete a dissertation that demonstrates a capacity for independent and original work of high quality.
(8) Pass an oral exam on the dissertation and related fields of study.

Financial Support. Within the limits of available funds, qualified students may receive graduate scholarships or fellowships for up to four years. To qualify for this continuing financial aid, students must be approved for candidacy for the Ph.D. by the beginning of their seventh semester at Rice (fifth semester for those entering with an M.A.).

See ENGL in the Courses of Instruction section.
Environmental Analysis and Decision Making

The Wiess School of Natural Sciences

Director
Joseph B. Hughes

Professors
Andrew R. Barron
Katherine B. Ensor
Neal F. Lane
Kathleen S. Matthews
Erzsébet Merényi
Dale S. Sawyer
Tayfun E. Tezduyar

Associate Professors
Vicki L. Colvin
Matthias Heinkenschloss
Michael B. Heeley

Elective Courses:
(Students must take five; three should be in one focus area, and at least one should be from management and policy area.)

Degrees Offered: M.S.

Rice University will introduce a professional master’s degree in Environmental Analysis and Decision Making for the 2002–2003 academic year. This degree is geared to teach students rigorous methods that are needed by industrial and governmental organizations to deal with environmental issues. As an interdisciplinary program, it aims to give students the ability to predict environmental problems, not just solve them. It emphasizes core quantitative topics such as statistics, remote sensing, data analysis, and modeling. In addition, it teaches laboratory and computer skills and allows students to focus their education by taking electives in relevant fields.

The Environmental Analysis and Decision Making degree is one of three tracks in the new Professional Master’s Program at Rice housed in the Wiess School of Natural Sciences. These master’s degrees are designed for students seeking to gain further scientific core expertise coupled with enhanced management and communications skills. These degrees instill a level of scholastic proficiency that exceeds that of the bachelor’s level and create the cross-functional aptitudes needed in modern industry. This program will allow students to move more easily into management careers in consulting or research and development, design, and marketing of new science-based products.

Degree Requirements for M.S. in Environmental Analysis and Decision Making

The 21-month professional master’s program begins with two semesters of course work at Rice followed by a six-month industrial internship. After the internship, students return to Rice for a final semester of course work. In addition to taking technical courses, students in the Environmental Analysis and Decision Making program will take two management courses, one science policy and ethics course, and a seminar jointly with the students involved in the other professional master’s tracks. No thesis is required; however, students are required to present their internship projects in both oral and written form in the Professional Master’s Seminar. Students also are required to attend events organized by the Rice Alliance for Technology and Entrepreneurship and will be guided in courses by the efforts of the Cain Project in Engineering and Professional Communication.

For general university requirements for graduate study, see pages 67–68, and see also Professional Degrees, page 63.

To insure that all students obtain an excellent quantitative background, each student will be required to take the core courses listed below. If a student can demonstrate that s/he has learned the material elsewhere, s/he may be exempted. In addition to taking the core courses, the student will choose 5 electives from the list below. We recommend that three of the electives be in one focus area (biological sciences, chemistry, fluids and transport, engineering, policy, or advanced computation).

Year 1
Fall Semester
Elective
STAT 305 Introduction to Statistics for Biosciences with 1 hour environmental lab
ENVI 401 Introduction to Environmental Chemistry
MGMT 750 Management for Science and Engineering
NSCI 501 Professional Master’s Seminar

Spring Semester
2 electives
CAAM 353 Computational Numerical Analysis
STAT 410 Introduction to Statistical Computing and Linear Models
STAT 510 Advanced Environmental Statistics Lab
NSCI 501 Professional Master’s Seminar

Summer
Industrial Internship

Year 2
Fall Semester
NSCI 500 Industrial Internship
NSCI 501 Professional Master’s Seminar

Spring Semester
2 electives
Science Policy and Ethics
ESCI 450 Remote Sensing
NSCI 501 Professional Master’s Seminar

Elective Courses:

Biological Sciences
BIOS 322 Global Ecosystem Dynamics
BIOS 324 Wetland Ecosystems
BIOS 325 Ecolgy
BIOS 424 Microbiology and Biotechnology
BIOS 425 Plant Molecular Biology
ENVI 536 Environmental Biotechnology
ESCI 468 Paleoclimate and Human Response

Chemistry
ENVI 511 Atmospheric Chemistry and Physics
ENVI 550 Applied Water Chemistry
ESCI 353 Environmental Geochemistry
Environmental Studies

Directors
Paul A. Harcombe (Ecology and Evolutionary Biology)
Walter W. Isle (English)

Professors
Arthur A. Few (Physics and Environmental Science)
Neal Lane (University Professor)
Ronald J. Parry (Chemistry)
Ronald L. Sass (Ecology and Evolutionary Biology)
Mark R. Wiesner (Civil and Environmental Engineering)
Gordon G. Wittenberg (Architecture)

Associate Professors
Gerald R. Dickens (Earth Science)
Katherine M. Donato (Sociology)

Lecturer
Donald Ostdiek (Political Science)

The Environmental Studies Program offers several introductory courses. These courses are interdisciplinary and are often team-taught by faculty from various areas of study. The courses are intended as preparatory to the various majors in the environmental area.

Students may take one of three environmental tracks as a second major. Two tracks are offered in the Department of Civil and Environmental Engineering: one in environmental sciences engineering and one in environmental science. A third track in environmental policy is offered through the Policy Studies second major. For a full description of course requirements in each track, students should refer to the pages for the Department of Civil and Environmental Engineering and for the Policy Studies Program. Rice is a partner with Columbia University at Biosphere 2 Center, where Columbia offers a semester’s course in environmental studies, credit for which may transfer to Rice. Interested students should apply to the Environmental Studies Program directors.

Courses:

ENST 111 The Sustainable Environment
ENST 200/300 Introduction to the Environment
ENST 303 Environmental Issues

See ENST in the Courses of Instruction section.
French Studies

The School of Humanities

Chair
Bernard Aresu

Professors
Madeleine Alcover
Jean-Joseph Goux
Lynne Huffer
Deborah Nelson-Campbell

Associate Professors
Michel Achard
Deborah A. Harter
Philip R. Wood

Visiting Assistant Professor
Jean-Luc Robin

Senior Lecturer
Evelyne Datta

Lecturers
Brigitte Crull
Ombretta Frau

Degrees Offered: B.A., M.A., Ph.D.

Courses in this department hone language skills in French while placing a diverse, generalized knowledge of French literature within a broad spectrum of cultural, historical, philosophical, and theoretical concerns. Students are also urged to take courses in fields closely related to French studies, including European and English history, literature, and philosophy. The department encourages students to spend time studying in a francophone country and to that end the French Studies department and Office of Student Advising will help students select an appropriate program. Courses in Italian language and culture are included within this department.

Degree Requirements for B.A. in French Studies

For general university requirements, see Graduation Requirements (pages 18–20). Students majoring in French studies must complete at least 30 semester hours in upper-level courses (at the 300 or 400 level). A double major or an area major must complete 24 hours in upper-level courses.

Required Courses
FREN 301 Advanced French for Written and Oral Communications
FREN 311 Major Literary Works and Artifacts of Pre-Revolutionary France
FREN 312 Major Literary Works and Artifacts of Post-Revolutionary France: The Romantic Legacy

Electives
7 additional courses (for single majors)—
at least 3 courses at the 400 level and
at least 1 course from Group III (culture, history, and civilization)
5 additional courses (for double majors)—
at least 2 courses at the 400 level and
at least 1 course from Group III (culture, history, and civilization)

As many as 2 French courses taught in English may count toward a major in French studies. Students who have taken 300- and 400-level French courses (except those taught in English) cannot enroll simultaneously or afterward in 200-level French courses for credit. At least half of the courses for the major must be taken at Rice University. The department normally requires that the basic courses for the major (FREN 301, 311, or 312) be taken at Rice.

Students with diplomas from French-speaking institutions must consult with the department before enrolling in courses, and all majors and prospective majors must have their programs of study approved by an undergraduate adviser. Students wishing to complete the honors program in French studies should also consult one of the advisers.

Campus Activities. To acquaint students with French language and culture, the department sponsors a weekly French Table that meets at lunch in a college. The Club Chouette also organizes outings to French movies, sponsors guest lectures, and, in cooperation with the department, helps to produce a play during the spring semester. Students who maintain at least a B average in 2 or more advanced French courses and have a GPA of at least 3, are invited to join the Theta chapter of the honorary Pi Delta Phi.

Travel Abroad. The department encourages majors to spend time living and studying in a francophone country. The Alliance Française of Houston offers a summer scholarship of $3,000 each year to a qualified sophomore or junior for six weeks’ study in France. The Clyde Ferguson Bull Traveling Fellowship, awarded each year to one graduating senior with a major or double major in French studies, permits the recipient to spend an entire year in France. Information about study abroad is available from the department faculty and in the Office of Academic Advising.

Degree Requirements for M.A. and Ph.D. in French Studies

Admission to graduate study in French, granted each year to a limited number of qualified students, requires a distinguished undergraduate record in the study of French literature or a related field and a capacity for independent work. All candidates should have a near-native command of the French language. For general university requirements, see Graduate Degrees (pages 62–67).

M.A. Program. In most cases students take two years to complete work for the M.A. degree in French studies. While graduate students normally take 500-level courses, as many as 2 courses at the 400 level may count toward fulfillment of the following course requirements. M.A. candidates must:

• Complete LING 610 Topics in Language Methodology, a course normally required for all graduate teaching assistants
• Perform satisfactorily on a reading examination in one department-approved language other than French
• Perform satisfactorily on preliminary written and oral examinations conducted in French on works specified on the department reading list

Ph.D. Program. Candidates normally take 500-level courses, but students entering with a B.A. may count toward their Ph.D. degree as many as 3 courses at the 400 level that also have a 500-level listing; those entering with an M.A. may count 2 such courses. Graduate student enrollment in a course listed only at the 400 level, however, is subject to the instructor’s approval. Candidates for the Ph.D. degree must accomplish the following, being sure to complete the additional language requirement and their preliminary exams one year before they submit a dissertation:
• In a program approved by the department, complete with high standing at least 57 semester hours of course work plus 36 thesis hours (for those already holding an M.A. degree, the requirement is 39 hours of course work plus 36 thesis hours)

• In addition, complete LING 610 Topics in Language Methodology, a course normally required for all graduate language teaching assistants. Students entering with an M.A. who have completed the equivalent course are exempt from this requirement

• Satisfactorily complete 1 course at the 300 level or above in a language other than French or English, chosen in consultation with a graduate adviser for its relevance to their research interests. With the permission of the graduate committee, this requirement may also be met through satisfactory performance on a written language examination or by such other means as the graduate committee may direct

• Perform satisfactorily on preliminary written and oral examinations (the oral exam taken only after successful completion of the written exam) from a list of required, department-approved texts, including selected readings in French literature from all major periods and readings in crucial texts in philosophy and theory; history, cultural studies, and film; and postcolonial and gender studies

• Complete a dissertation, approved by the department, that represents an original contribution to the field of French studies

• Perform satisfactorily on a final oral examination on the dissertation

Italian Language and Culture

Italian language courses are available under the auspices of the Department of French Studies, as are courses in Italian literature and culture. The department also sponsors a weekly Italian Table at Will Rice College. Also this year, the Donne Di Domani Scholarship of $3,000 (based on merit) and need will be awarded to eligible undergraduates toward tuition and books.

See FREN and ITAL in the Courses of Instruction section.
German and Slavic Studies

The School of Humanities

Chair
Harvey Yunis

Professors
Steven Crowell
Margret Eifler
Ewa M. Thompson
Klaus Weissenberger
John Zammito

Associate Professor
Peter Caldwell
Maria-Regina Kecht
Uwe Steiner

Visiting Assistant Professor
Florian Kreutzer

Senior Lecturer
Richard Spuler

Lecturers
Christa Gaug
Harry Roddy
Dariusz Skorczewski

Degrees Offered: B.A. in German Studies, B.A. in Slavic Studies

German

The department offers instruction in the German language, in German literature (studied in the original and in translation), and in the achievements of German culture surveyed as a whole and in particular themes, genres, and periods. The department stresses linguistic competence, interdisciplinary study, and the role of German culture within the broad context of European history. Studies in film, cultural theory, and gender complement traditional studies of German literature, philosophy, history, and art.

The B.A. in German prepares students for graduate study in German, as well as for careers in law, business, international affairs, economics, and other academic fields. Our language acquisition courses maximize linguistic proficiency and prepare students for study abroad. Our freshman seminars are conducted in small groups and stress written and oral communication. Culture courses under the rubric “Mapping German Culture” are taught in English and consider major cultural and literary topics. For students who have some proficiency in German, the Mapping German Culture courses are accompanied by sections that conduct discussions and study sources in German. Upper-level literary courses and special topics seminars both polish linguistic skills and offer intensive study at a high level.

The department encourages and, by means of the Mitchell Fellowships, facilitates study abroad in Germany and Austria. There are weekly German tables in the colleges.

Degree Requirements for B.A. in German Studies

For general university requirements, see Graduation Requirements (pages 18–20). Students who have German as their only major must complete at least 27 semester hours above the 200 level. These 27 semester hours must include the following:
GERM 302 (bridge course in German literary language)
3 Mapping German Culture courses (GERM 321–360) with attached one-hour FLAC sections
GERM 411, 412 (basic German literature courses)
GERM 421, 422 (special topics seminars)
Option: GERM 301 *Composition and Conversation I* may be substituted for any one of the above courses except 302, 411, and 412.

Students who have German as a double major must complete at least 20 semester hours above the 200 level. These 20 semester hours must include the following:

GERM 302 (bridge course in German literary language)
2 Mapping German Culture courses (GERM 321–360) with attached one-hour FLAC sections
GERM 411, 412 (basic German literature courses)
Either GERM 421 or 422 (special topics seminars)
Option: GERM 301 *Composition and Conversation I* may be substituted for any one of the above courses except 302, 411, and 412.

**Honors.** Outstanding students are presented annually with the Max Freund Prize. The department also offers an honors program for majors excelling in their studies. Honors work consists of readings and research leading to a substantial honors essay under the supervision of a department faculty member (GERM 403). Students should consider this work to enhance preparation for graduate school.

**Slavic**

In the B.A. program in Slavic Studies, students acquire a proficiency in Russian and Eastern European languages, culture, and literature. A three-year study plan in Russian language is available. A variety of Russian literature courses are taught in English, including courses devoted to Tolstoy and Dostoevsky.

The department encourages and, by means of the Mitchell Fellowships, facilitates study abroad in a Slavic speaking country.

**Degree Requirements for B.A. in Slavic Studies**

For general university requirements, see Graduation Requirements (pages 18–20). Single majors in Slavic studies must complete 24 semester hours at the 300 level or above. Double majors must complete 18 semester hours at the 300 level or above. At least one of these courses must cover the entire Slavic area (e.g., SLAV 320 *Slavic Cultures*, RUSS 411 *Contemporary Russia*, or SLAV 412 *Contemporary Eastern and Central Europe*).

Courses in Polish are offered subject to availability of an instructor. Students may take two Slavic studies-related courses from outside the department, subject to approval by the Slavic studies advisor (Professor Thompson).

See GERM, PLSH, RUSS, and SLAV in the Courses of Instruction section.
Hispanic and Classical Studies

The School of Humanities

Chair
Maarten van Delden

Professors
James A. Castañeda
Beatriz González-Stephan
Harvey E. Yunis

Associate Professors
Robert Lane Kauffmann
Hilary S. Mackie
J. Bernardo Pérez

Assistant Professors
Scott McGill
Rafael Salaberry

Lecturers
Verónica Albin
María Álvarez
Suzana Bloem
Patricia Brogdon-Gómez
Coulter George
Raquel Gaytán
Gema Groskreutz
Robin Martinez
Jose Narbona
Marcela Salas
Jane Verm
Kristine Gilmartin Wallace
Elsa Zambosco-Thomas

Degrees Offered: B.A. and M.A. in Spanish, B.A. only in classics

Studies are available in Classics, Greek, Latin, Portuguese, and Spanish. For information on the B.A. degree in Classics, see Classics (pages 133–134). Undergraduate majors in Hispanic studies select one of four options: literature, linguistics, translation, or Latin American studies. Qualified students may undertake independent work.

Degree Requirements for B.A. in Hispanic Studies

Students majoring in Hispanic studies must complete at least 30 semester hours in upper-level courses (300 or 400 level); a double major must complete at least 24 semester hours in such courses. Requirements for the major differ according to the options selected. Majors should read the “Options for Spanish Majors” (available in department office) and consult with the undergraduate adviser regarding specific course prerequisites, requirements, and recommended sequence. The department must approve all major programs of study. At least half of the courses for the major must be taken at Rice University.

Degree Requirements for M.A. in Hispanic Studies

For general university requirements, see Graduate Degrees (pages 62–67). For the M.A. degree, candidates must:

• Complete with high standing an approved program that normally includes 24 semester hours in advanced courses, plus 6 hours of thesis work
• Pass a reading examination in one foreign language (other than Spanish) that has been approved by the department
• Perform satisfactorily on a written comprehensive examination in Spanish, which tests students’ competence in Hispanic literature and linguistics
• Take 1 semester of college Latin (or equivalent)
• Take SPAN 507 Teaching College Spanish
• Complete an acceptable thesis
• Perform satisfactorily on a final oral examination on the thesis

See PORT and SPAN in the Courses of Instruction section.
History

The School of Humanities

Chair
John H. Zammito

Professors
John B. Boles
Ira D. Gruber
Thomas L. Haskell
Allen J. Matusow
Atieno Odhiambo
Patricia Seed
Richard J. Smith
Gale Stokes
Martin J. Wiener
John H. Zammito

Professors Emeriti
Katherine Fischer Drew
Harold Hyman
Albert Van Helden

Associate Professors
Peter C. Caldwell
Edward L. Cox
Alex Lichtenstein
Michael Maas
Ussama Makdisi
Carol E. Quillen
Paula A. Sanders
Joel W. Wolfe

Assistant Professors
Alexander X. Byrd
Eva Haverkamp
Allison Sneider
Sarah Thal
Kerry R. Ward

Degrees Offered: B.A., M.A., Ph.D.

The undergraduate program offers courses in the four main areas of ancient-medieval history, modern European history, U.S. history, and the histories of Asia, Latin America, and Africa. Faculty interests range from ancient Greek and medieval Jewish history to modern British and German; from areas in American history that include Colonial America, the Old and New South, the Civil War, and intellectual history to world military history; and from the history of science to East Asian, Caribbean, and Middle Eastern. The department encourages its majors to acquaint themselves with other humanistic disciplines, such as literature, fine arts, and philosophy; the contributions of political science, sociology, economics, and anthropology also are vital to historical studies. The graduate program, which trains a limited number of carefully selected students, offers studies in American history, intellectual history, and global/world comparative history.

Degree Requirements for B.A. in History

For general university requirements, see Graduation Requirements (pages 18–20). Students majoring in history must complete at least 30 semester hours (10 courses) in history, with 18 hours (6 courses) at the 300 or 400 level. Students may apply advanced placement credit to no more than 6 of these hours (2 courses). Majors should select 2 of the required upper-level courses from a departmental list of seminars devoted mainly to writing and discussion. Departmental distribution requirements are as follows (students may not use advanced placement credit for these requirements):
Ancient medieval history—at least 1 course
Modern European history—at least 2 courses
U.S. history—at least 2 courses
Asian, Latin American, and African history—at least 2 courses

Some foreign language proficiency is desirable, and the department highly recommends that students who are contemplating graduate work in history study at least 1 foreign language in some depth.

Transfer Credit and Advanced Placement Credit. The Department of History grants transfer credit on a case-by-case basis to enrolled undergraduates (the registrar determines the hours to be credited). However, history majors must take at least 18 semester hours (6 courses) of the required 30 hours in history at Rice. No more than 4 courses may be satisfied through advanced placement and transfer credit. Advanced placement credit may not be used to satisfy departmental distribution requirements for a history major.

Rice students who wish to take classes for credit at another U.S. university should allow sufficient time to get advance confirmation from the department that the course is eligible: courses are eligible only if taken at a four-year institution. Rice students planning to study at a foreign university also must get course approval from the Office of International Programs.

After completing an approved course from either a domestic or a foreign university, students should submit a request for transfer credit, including evidence of the scope and work requirements of the course to be transferred (e.g., a syllabus, reading lists, and copies of exams and papers), to the department’s director of undergraduate studies.

Honors Program. Qualified undergraduates may enroll for 6 semester hours of directed honors research and writing, completing an honors thesis in their senior year (these 6 hours are in addition to the 30 hours required for the major). Students must complete both semesters of HIST 403/404 to receive credit; the grade for the final project applies to the full 6 hours. Interested students who have a grade point average of at least 3.50 in their history courses should submit a substantial historical essay, an honors thesis proposal, and recommendations from the instructor to whom the paper was submitted and from their proposed adviser. Financial assistance is available for honors students to conduct research on their honors theses during the summer between their junior and senior years. After their admission to the program, a periodic workshop allows honors students to share problems and ideas. Once the adviser and another reader have evaluated the completed thesis, the director of the honors program determines whether to award honors. Students who miss the final thesis deadline (which is well before the end of their senior year) will receive a grade and credit for completed work, but no honors.

Degree Requirements for M.A. and Ph.D. in History

The Rice University graduate program in history is primarily a Ph.D. program. Students who have a B.A. in history (or its equivalent) from an acceptable institution are eligible to apply to the Ph.D. and M.A. programs. Although many successful candidates to the Ph.D. program have an M.A. or other advanced degree, advanced study is not a requirement for admission. Graduate degrees are offered in U.S., European, intellectual, and other areas of history. Further information is available on request from the department. For general university requirements, see Graduate Degrees (pages 62-67).

The department awards graduate tuition waivers and fellowship stipends, within the limits of available funds, to qualified Ph.D. candidates with demonstrated ability. University funding is not available for masters program study only. All graduate students in the history department are expected to participate in the professional activities of the department as part of their training. These include, but are not limited to, assisting with the Journal of Southern History or the Papers of Jefferson Davis and serving as research assistants or teaching assistants for department members. Insofar as possible, these assignments are kept consistent with the interests of the students.

M.A. Program. The department gives priority to applicants for the Ph.D. Completion of the M.A. degree usually takes two years; no more than three years may elapse between graduate admission and the completion of the degree unless the department Graduate Committee approves an extension. M.A. degrees are awarded in two ways: (1) completion of one year of course work (24 credit hours) and a thesis written and defended in an oral examination during the second year; and (2) completion of two years of course work (48 credit hours), normally including at least 8 seminar research papers.

Ph.D. Program. Doctoral candidates must prepare themselves in three fields of history: two in their major area of concentration, whether European, U.S., or other history, and a third in an area outside of that concentration (e.g., if the major area is European history, the third field must be in U.S. or other non-European history, and if the major area is U.S. history, the third field must be in European or other non-U.S. history, and so on). Students who wish to pursue a third field in an area outside the department should petition the Graduate Committee by the end of their second semester.

The requirements for completing the degree will be administered as flexibly as possible within the bounds of the general university regulations. These requirements state that the Ph.D. degrees “will be awarded after successful completion of at least 90 semester hours of advanced study and an original investigation reported in an approved thesis.” Passing the qualifying exam and receiving approval of a dissertation prospectus allows the student to apply for formal admission to candidacy for the Ph.D. degree.

For the Ph.D., candidates must:
• Prepare themselves thoroughly in three examination fields.
• Take 8 graduate seminars, including Introduction to Doctoral Studies.
• Pass reading examinations in the principal language of research (unless it is English) and one other language (not English).
• Perform satisfactorily on written and oral examinations. For students entering with a B.A., those examinations will normally be taken before the beginning of the fifth semester and no later than the beginning of the sixth semester. Students entering with an M.A. may take their examinations earlier, with departmental approval.
• Complete a dissertation presenting the results of original research.
• Defend the thesis in a public oral examination.

See HIST in the Courses of Instruction section.
Kinesiology

The School of Humanities

Chair
Bruce Etnyre

Associate Professor

Professors
Nicholas K. Iammarino
Dale W. Spence

Professors Emeriti
Eva J. Lee
Hally B.W. Poindexter

Associate Professor
James G. Disch

Assistant Professors
Brian T. Gibson
Peter Weyand

Adjunct Professors
William J. Bryan
Mark Jenkins

Julio Morales
George Steve Morris
Daniel O'Connor
Armin D. Weinberg

Lecturers
Marlene A. Dixon
John F. Eliot

Part-time Lecturers
Gwendolyn Adam
Roberta Anding
Cassius B. Bordelon, Jr.
Allen W. Eggert
Kristy Vandenberg

Degree Offered: B.A.

A minimum of 120 semester hours is required for a bachelor of arts degree in kinesiology. Due to the interdisciplinary and diverse nature of the field of kinesiology, each student is required to specify an academic track concentration within the major. The department was one of the first academic programs of its kind in the nation to institute an academic track structure that allows students to concentrate their efforts on a more specific subdiscipline. Academic tracks include sports medicine, health science, and sport management. Detailed requirements of each track can be obtained on the departmental web page at http://www.ruf.rice.edu/~kines/.

Degree Requirements for the B.A. in Kinesiology

Sports Medicine

Directors: Dr. Dale Spence and Dr. Brian Gibson

Students who choose the sports medicine track of the kinesiology department typically continue their education at the graduate level or plan on attending medical school or other medically related professional schools such as physical therapy. Graduates may also be directly employed in medical and corporate settings, which include both preventative and rehabilitative programs. Graduates who choose not to seek post-baccalaureate education are generally encouraged to obtain certification for exercise testing, physical fitness evaluation, or exercise prescription through the American College of Sports Medicine at http://www.acsm.org/, or they may obtain athletic trainer certification through the National Athletic Trainers' Association at http://www.cewl.com/.

A specific intention of the sports medicine curriculum is to provide a strong natural science foundation and to interface this foundation with application to the human body.

Prerequisite courses in chemistry and physics, elective courses in biology and biochemistry, as well as an array of required and elective courses offered within the department provide this foundation. The sports medicine track is the only academic specialization on campus that provides exposure to human anatomy and human physiology. In addition, students receive a solid foundation in nutrition, biomechanics, sports psychology, motor learning, measurement and statistics, exercise physiology, and sports medicine and training. Practical experience is afforded through several academic labs. Other elective courses include writing for professional communication, epidemiology, case studies in human performance, motor control, advanced exercise physiology and preventative medicine, research methods, muscle physiology and plasticity, and seminar in sports medicine. During advising sessions, students are encouraged to select from these electives according to their respective career goals. Students in the sports medicine track are expected to develop a strong scientific knowledge base as well as adept critical reading, writing, and oral communication skills.

Qualified students of the sports medicine track will be encouraged to participate in an independent study. This independent study allows integral involvement in basic or applied research directed by a faculty adviser. The application (proposal) process for independent studies is outlined in the web page listed below. Qualified students also are encouraged to apply for any one of a variety of highly competitive internships. The internships generally provide students an opportunity to experience the application of preventative and rehabilitative sports medicine concepts and practice at a health care or corporate setting.

For more information, go to the sports medicine website at http://www.ruf.rice.edu/~kines/bgibson_index.html.
field and governing body from which Rice is in the process of obtaining national accreditation—is strongly recommended.

Highly qualified students will also be encouraged to seek an honors major, a double major, and/or consider pursuit of an advanced degree in business, law, sport management, or organizational psychology. Students will acquire a solid foundation in public speech, professional writing, and leadership and thus will be competitive for opportunities at the country’s best law and business schools, as well as with journalism programs and premier consulting corporations.

Health Sciences
Director: Dr. Nicholas K. Iammarino

The purpose and goal of the health science track is to provide students with a fundamental and broad background in health promotion and disease prevention that will enable them to understand and appreciate the complexities of maintaining an optimal level of personal health while also considering the role that health promotion plays in society and the mechanisms that affect community health. The health science track is viewed as an excellent option for undergraduate students who are preparing to enter graduate school in health education, health promotion, or public health as well as other health related graduate or professional schools such as in medicine, dentistry, etc.

The successful completion of the health science track requires students to complete a total of 42 semester hours in addition to other university degree requirements. The track currently consists of 6 required lecture courses (one of which is a KINE core course that is consistent across all four tracks) for a total of 18 required hours. The 5 remaining courses cover the structure and function of the human body (Anatomy and Physiology), an introductory course designed to acquaint students with the fundamental concepts of health and models of health promotion (Concepts of Health Science), methods of understanding the disease process (Epidemiology), and a course that provides an introduction to statistics and measurement (Measurement and Statistics).

The remaining 24 semester hours are drawn from elective courses that are both within the KINE department and, at present, more than 15 courses from other academic departments. In keeping with the university’s interest in an interdisciplinary approach to undergraduate education, this allows students to choose health-related courses within the natural sciences, social sciences, and humanities divisions.

See HEAL and KINE in Courses of Instruction section.
Linguistics

The School of Humanities

Chair
Philip W. Davis

Professors
Masayoshi Shibatani
Stephen A. Tyler

Professors Emeriti
James E. Copeland
Sydney M. Lamb

Associate Professors
Michel Achard
Suzanne E. Kemmer
Nanxiu Qian

Assistant Professors
Michael Barlow
Robert Englebretson
Nancy Niedzielski
Rafael Salaberry

Adjunct Associate Professor
Spike Gildea

Lecturer and Playwright in Residence
E. Douglas Mitchell

Degrees Offered: B.A., M.A., Ph.D.

Undergraduate Programs. The department offers both a major program in linguistics, and a Certificate in Teaching English as a Second Language, which may be earned with or without a linguistics major.

Linguistics Major. Because human language is a multifaceted object of study, linguistics is, by its nature, an interdisciplinary field. The undergraduate major in linguistics provides both an in-depth grounding in the field as well as cross-disciplinary breadth. Students beginning a linguistics major should take LING 200, which is a prerequisite for many upper-level courses in the department. All majors are required to take at least 8 courses (24 semester hours) in linguistics at the 300 level or above, including 4 core courses: LING 300, 1 of LING 301 or 311, 1 of LING 402 or 416, and 1 of LING 305, 315, or 415. No more than 1 independent study course may be counted toward the major requirement. In addition, competency in 1 language other than English is required. This requirement may be satisfied by 2 courses in a foreign language at the 200 level or above or equivalent; or at the 100 level or above for non-European languages.

Students may elect either a general linguistics major or one of four areas of concentration. Majors who plan to pursue graduate training in linguistics are recommended to choose one of the areas of concentration. These students also are urged to apply for admission to the honors program by the end of their junior year.

The general linguistics major requires, in addition to the 4 core courses and the language requirement, at least 4 upper-level linguistics electives. The requirements for the various concentrations include additional courses, as follows.

Language Concentration. In addition to the basic language competency required of all majors, the language concentration requires an advanced level competency in a different language. This can be satisfied by 2 language courses taught in a language other than English at the 300 level or above, or equivalent. In addition to the core courses, 4 advanced linguistics electives are required, which should be chosen in consultation with the linguistics adviser. Courses in the structure or history of the languages studied are especially appropriate.
Cognitive Science Concentration. In addition to the core courses, this concentration requires 3 courses focused on the cognitive aspects of human language, selected from LING 306, 315, 317, 411, and 412; 2 courses from cognitively related disciplines (psychology, computer science, anthropology, philosophy) as approved by the major adviser; and 2 other advanced linguistics electives.

Language, Culture, and Society Concentration. For an in-depth grounding in a particular language and culture, this concentration requires 2 language courses at the 300 level or above. The language may be the same as that used to satisfy the basic level language competency. Besides the 4 core courses, 2 additional courses from the following must be selected: LING 313, 406, or 415 and 2 more linguistics electives. Finally, 2 courses in sociocultural studies outside the department are required, and must be approved by the major adviser. Examples of appropriate courses are ANTH 353, PSYC 202, RELI 393, or HIST 250.

Second Language Acquisition Concentration. Two language courses at the 300 level or above are required; the language may be the same as that used to satisfy the basic-level language competency. In addition to the linguistics core courses, 4 additional courses are required as follows: LING 340 and LING 417, LING 394 or a foreign language equivalent (e.g., Structure of Spanish, Structure of German, etc.) as approved by the major adviser, and one of the following: LING 309, 313, 415, or 490.

In addition to the departmental requirements for the major, students must satisfy the distribution requirements and complete no fewer than 60 semester hours outside the departmental requirements for a total of at least 120 semester hours. See Graduation Requirements (pages 18–20).

Honors Program. The departmental honors program provides selected undergraduate majors with the opportunity to conduct supervised research within their area of specialization in the major. Majors planning to pursue graduate training in linguistics or a related field are strongly encouraged to apply, as well as others who wish to add the experience of an intensive, individualized research project to their undergraduate education.

Application to the honors program should be made in person to the undergraduate adviser in the second semester of a student’s junior year. In support of the application, the student should prepare a brief description of the proposed project signed by the faculty member who is to supervise the work. Acceptance into the program is by agreement of the linguistics faculty. On acceptance, the student will enroll in LING 482 Honors Project, with the supervising faculty member named as instructor. The honors program framework is designed to facilitate as far as possible the development of a mentoring relationship between student and faculty member. Students are thus expected to consult with the project supervisor periodically regarding their progress; the supervisor will provide research guidance and general support. With the appropriate completion of major requirements and the honors project or thesis, the student will graduate with departmental honors as follows: “With Distinction,” “With High Distinction,” or “With Highest Distinction,” as determined by the linguistics faculty.

Certificate in English Language Teaching. This program is designed for students who plan on teaching English to nonnative speakers in the U.S. or abroad. The Certificate Teaching English as a Second Language provides undergraduate-level training in applied linguistics and English language, as well as some practical preparation for English language teaching. It can be easily combined with a major in linguistics, education, or English. To enroll in the program, see the director of the ESL Certificate Program or the linguistics undergraduate adviser.

The program consists of 4 courses and a practical component. The courses are LING 200, 340, 394, and 1 of the following: LING 205, 309, 313, or 415. The practical component consists of a total of 20 contact hours of language teaching/tutoring experience. This requirement may be fulfilled by tutoring in the Rice Student Volunteer Program or by teaching in a high school or community ESL program. Students will be expected to write a short report on their teaching experience. Successful completion of the certificate program must be certified by the director of the ESL Certificate Program and will be indicated on the Rice transcript upon completion of degree requirements.

Doctoral Program. The doctoral linguistics program at Rice emphasizes the study of language use and functional/cognitive approaches to linguistic theory. Areas of particular research strength in the department include field studies of particular languages (e.g., languages of North and South America; Austronesia; Africa; Europe; and East Asia), typology, language and mind (cognitive linguistics, neurolinguistics, schema-based theories, lexical semantics), language change (diachronic typology, grammaticalization theory, semantic change, language classification, and Indo-European linguistics), and discourse analysis, including corpus linguistics. Additional research areas represented are second language acquisition and applied linguistics.

The program admits students planning to study for the Ph.D. degree on a full-time basis. Undergraduate preparation should ideally include language study and course work in linguistics or disciplines related to linguistics, such as anthropology, applied linguistics, psychology, or computational modeling. Interdisciplinary interests are encouraged. A master’s degree may be earned during progress to the Ph.D. degree. Admission to the program is competitive. Students admitted to the program are generally offered financial support in the form of tuition scholarships and/or stipends for living expenses.

During the first year of residence, each entering student works closely with the graduate adviser to choose a plan of study congruent with the demands of the program and the student’s interests. Emphasis throughout the program is on a close working relationship with faculty. Students should select areas of specialization that fit well with faculty research interests and activities. (See the departmental homepage at http://linguistics.rice.edu for faculty research specializations.)

Students with master’s degrees in linguistics will normally progress through the degree program in three to four years; those without in four to five. With no prior linguistics background, course work in the first two years will generally include 2 courses in the area of phonetics/phonology, 2 in the area of syntactic/semantic analysis, 1 two-course sequence in field methods, 1 problem-solving course in linguistic analysis, and at least 2 courses in other subfields of linguistics. Prior preparation in linguistics will be assessed with regard to its equivalence to particular Rice courses. Students are also normally expected to serve as teaching assistants for 1 course per year during the time they are receiving departmental support; such service is included in the normal course load. Graduate students are required to register for at least 12 hours credit per semester prior to advancing to candidacy.

At the end of the first year of study, students undergo an oral qualifying examination to assess their progress in the doctoral program. Continuation to the second year requires successful performance on this examination and in first-year course work. In each of the second and third years, in addition to their course work, students prepare an in-depth research paper on a topic chosen in consultation with a committee of faculty. These 2 papers will represent different areas of the field, and at least 1 should be on the structure of a non-Indo-European language. Students should work toward establishing a close working relationship with various faculty such that multiple faculty members are closely familiar with the student’s work. After the second research paper is accepted, a dissertation adviser is selected and a doctoral committee formed, by mutual agreement.
of the student and the relevant faculty members.

Before advancing to candidacy, students must demonstrate reading competency in 2 research languages other than English. It is also expected that students will submit their work for presentation at one or more professional meetings and publish such work in conference proceedings and/or journals. Funds may be available to defray the cost of travel to such meetings.

During the fourth year, students present to their doctoral committee a third research paper consisting of a substantial dissertation proposal and a comprehensive bibliography. This proposal, ideally building on their previous research, may take the form of a grant proposal to an external funding agency, particularly where fieldwork abroad is proposed. The proposal is also presented orally in a departmental forum. On acceptance of the proposal, the student formally advances to Ph.D. candidacy.

The doctoral research project may require fieldwork in residence or abroad prior to writing the dissertation. The student is expected to consult regularly with faculty members during the writing process. After a complete draft of the dissertation is submitted, the student defends the dissertation publicly. When the final version of the dissertation is accepted by the doctoral committee and filed with the university, and all other requirements are certified as filled, the degree is then granted.

See LING and SANS in the Courses of Instruction section.
The mission of the Lifetime Physical Activity Program (LPAP) is to provide a multifaceted learning experience via a program of physical activity to foster physical, social, and emotional wellness. The ultimate goal of the LPAP is to provide each student with:

- Knowledge of health-related concepts of physical activity
- Cognitive and behavioral skills
- An understanding of physical activity as a mode of improved quality of life throughout the life-span
- A sense of emotional well-being
- Satisfying social interaction
- Knowledge of rules and strategies
- An opportunity to learn an activity which is not necessarily mainstream in U.S. culture
- Professional instruction specific to the course material
- An introduction to intramural sports, sport clubs, dance theatre, and recreational programs
- Improved quality of life at Rice University

Lifetime physical activity classes are strongly recommended for all first-year students, including transfers who have not had an equivalent course elsewhere. Satisfactory completion of LPAP 101 and 102 is a requirement of the baccalaureate degree. Student should not repeat an activity in LPAP 102 that was taken in LPAP 101.

The LPAP offers approximately 40 sections each semester. Within scheduling constraints, a student may select a section which offers activities that satisfy his/her interests. The LPAP offers a variety of activities. Some of the current activities offered include racquet sports (tennis, racquetball, badminton, squash), fitness activities (aerobics, personal fitness, weight training, cycling), aquatics, dance (Latin ballroom, ballroom, modern, ballet, country western), martial arts, team sports (flag football, basketball, volleyball, soccer, softball), and other activities such as fencing, self defense for women, golf, disc golf, yoga, and wellness.

See LPAP in the Courses of Instruction section.
The Jesse H. Jones Graduate School of Management

Dean
Gilbert R. Whitaker, Jr.

Dean Swick
David Titus
Richard H. Ward, III

Lecturers
W. Clifford Atherton
David M. Austgen
John A. Baker
Lovett Baker
Sylvia Bennett
Donald D. Clayton
E. Scott Crist
Michele Daley
John D. Faucher
Susan Faust
Gary Globor
Lawrence Hampton
Sheila Harvey
Bradley Jackson
John Kehoe
Pamela Kennedy
Patricia R. Lawrence
Pilar Llusa
James P. Mandel
Robert McAshan III
Dennis E. Murphree
Elizabeth O’Sullivan
Phaedon Papadopoulos
Elizabeth A. Peters
Dale Qualls
Leslie Rohrer
Steven Russo
James R. Sowers
Russell Starbird
V. Richard Viebig, Jr.
Stuart Wagner
Alan Westheimer
Gale Wiley

Professors
Richard P. Bagozzi
Bala G. Dharan
Robert Dipboye
Linda P. Driskill
Jennifer M. George
G. Anthony Gorry
George Kanatas
David Lane
H. Albert Napier
Ronald N. Taylor
Wilfred C. Uecker
Robert A. Westbrook
Edward E. Williams
Duane Windsor
Stephen A. Zeff

Assistants
Miguel A. Quiñones
Barbara Ostdiek
Trichy Krishnan
Veronica Barlow
Sullivan

Research Professors
Bob Bixby
Marc J. Epstein

Associate Professors
Shannon Anderson
Richard R. Batsell
Steven C. Currall
Jeff Fleming
David L. Ikenberry
Trinchy Krishnan
Barbara Ostdieck
Miguel A. Quiñones
Douglas A. Schuler
R. Sukumar

Assistant Professors
Michele J. Daley
Utpal Dholakia
Gustavo Grullon
Michelle R. Hebl
Michael B. Heeley
Neelam Jain
Quintus R. Jett
Lisa R. Klein
Sharon F. Matusik
Karen Elisabeth Schnietz
D. Brent Smith

Admission Requirements for Jones Graduate School

For general information, see Admission to Graduate Study (pages 67–68). Applicants to the M.B.A. program must submit scores on the Graduate Management Admission Test (GMAT) rather than the Graduate Record Examination (GRE), and, unless they received an undergraduate degree from a U.S. college or university, foreign nationals whose native language is not English must submit recent scores on the Test of English as a Foreign Language (TOEFL). Admission to the Jones Graduate School is open to students regardless of their undergraduate major, but it is highly selective and limited to those who have performed with distinction in their previous academic work and on the GMAT.

M.B.A. Program. Although the M.B.A. program has not established specific prerequisite courses for admission, students may find it beneficial to have a background that includes undergraduate course work in principles of accounting, principles of microeconomics, and mathematics. Because spreadsheet and word-processing software are used extensively in course work, students should have a thorough understanding of these types of software packages before enrolling.

M.B.A. for Executives. In addition to meeting the standards for admission to the M.B.A. program, students admitted to the executive program typically have at least 10 years of relevant work experience.

Joint M.B.A./Master of Engineering Program. To enter the joint degree program, applicants must be accepted by both the Jones Graduate School and the engineering department in which they wish to enroll. The program requires the Jones Graduate School

Degrees Offered: M.B.A, M.B.A./Master of Engineering

The Jesse H. Jones Graduate School of Management was established in 1974 through a gift from Houston Endowment Inc. The school provides its highly select graduate students with unique opportunities for professional training in management. The master of business administration (M.B.A.) program includes elective offerings in accounting, entrepreneurship, finance, international business, information technology, marketing, operations management, organizational behavior and human resource management, healthcare management, and strategic management and planning.

The M.B.A. is also offered in a format designed for executives who do not wish to interrupt their careers while they pursue their degrees. Meeting every other weekend, the M.B.A. for Executives Program features the same content and faculty as the traditional two-year M.B.A. program, and is completed in 21 months. This general management program offers no tracks for specialization; however, much of the content of elective courses in the two-year M.B.A. has been incorporated into the course modules for the executive format. The M.B.A. for Executives Program offers 4 electives at the end of the 21-month period.

A joint M.B.A./master of engineering degree offered by the Jones Graduate School and the George R. Brown School of Engineering, in any of the departments of engineering or in statistics, prepares students to become managers in organizations requiring a high level of technical expertise and management skills.

A joint M.B.A./M.D. offered by the Jones Graduate School and Baylor College of Medicine prepares students to become both physicians and managers in institutions involved in the delivery of high-quality health care, as well as biotechnology-focused industries, health insurance/managed healthcare firms, and pharmaceutical and medical supply and equipment companies.

Although no undergraduate major is offered, undergraduate accounting courses are available.

Joint M.B.A./Master of Engineering Program.

To enter the joint degree program, applicants must be accepted by both the Jones Graduate School and the engineering department in which they wish to enroll. The program requires the Jones Graduate School
application and the GRE, rather than the GMAT. Some engineering departments require advanced tests as well.

**Joint M.B.A./M.D. Program.** To enter this joint degree program, applicants must first be accepted by Baylor College of Medicine and then apply separately to the Jones Graduate School. The MCAT is accepted rather than the GMAT. Two years of medical school are required before starting M.B.A. classes.

**Degree Requirements for M.B.A.**

For the M.B.A. degree, students must:

- Spend at least 2 academic years in residence at Rice
- Complete at least 60 semester hours in course work
- Register for no fewer than 15 hours and no more than 18 hours each semester (any other registration requires special permission)

All registration and drop/add forms require the signature of the M.B.A. program director or a designee. The school, which must approve all courses, specifies the sequence of required first-year courses at registration for each entering class.

**Waivers and Transfers of Credit.** At its sole discretion, the school may allow students to transfer credits (up to 6 hours). This does not necessarily reduce the residence requirement, but it does make additional elective courses available. Students otherwise must follow the prescribed curriculum of study and are not allowed to waive any core requirements.

**First-Year Courses.** Students must complete at least 32 approved credit hours. The modular core curriculum includes financial accounting, data analysis, business ethics, information technology, marketing, finance, managerial economics, organization behavior, competitive strategy, managerial and leadership skills, managerial communication, economic environment of business, globalization of business, cost management, operations management, business-government relations, organization theory and change management, and 2 electives. During the second semester, teams of students participate in an action learning project in which they work at a company to solve a specific problem. This project allows them to integrate the business disciplines they studied and to turn knowledge into action. The core courses serve as prerequisites for required and elective courses taken in the second year.

**Second-Year Courses.** Students must complete at least 28 credit hours that include required courses in entrepreneurship and strategy formulation and implementation, and 25 credit hours of electives.

**Areas of Interest.** Although M.B.A. students are not required to select a formal elective concentration for degree purposes, they may wish to choose 1 or more areas of interest from among the following: accounting, entrepreneurship, finance, general management, international business, information technology, marketing, operations management, organizational behavior and human resource management, healthcare management, and strategic management and planning. The M.B.A. program director and individual faculty members offer students advice on course selection. Students may also take upper-level or graduate courses from other departments at Rice. Students may not credit basic foreign language courses toward the M.B.A. degree, but advanced language courses may qualify with approval from the M.B.A. program director.

**Degree Requirements for M.B.A. for Executives**

This degree requires completion of 11 mini-semesters totaling 56 credits, including

Extended Learning Labs. The program is a lock-step progression in which all students take required courses in an identical sequence, except for the 4 elective courses at the end of the 21-month period.

**Degree Requirements for Joint M.B.A./Master of Engineering**

Students may earn this nonthesis engineering degree in the fields of chemical engineering, civil engineering, computational and applied mathematics, computer science, electrical and computer engineering, environmental science and engineering, mechanical engineering and materials science, and statistics. Ordinarily, the engineering degree takes one academic year to complete, whereas the M.B.A. requires two. Joint-degree candidates, however, can fulfill requirements for both degrees in two academic years.

For the joint M.B.A./master of engineering degree, students must complete:

- At least two academic years in residence at Rice
- 63 semester hours in approved course work:
  - 24 hours in an engineering discipline
  - 39 hours in business administration

Students plan their course schedules in consultation with the engineering department in which they are enrolled and with the M.B.A. program director.

**Degree Requirements for the Joint M.B.A./M.D. Program**

Students may earn both M.B.A. and M.D. degrees in five years. They divide their time as follows:

- Years one and two—medical training at Baylor College of Medicine
- Year three—core M.B.A. courses at Rice
- Year four—M.B.A. courses at Rice, including 3 semester hours of required courses and 12 semester hours of healthcare electives during the fall semester, and medical training at Baylor College of Medicine during the spring semester
- Year five—medical training at Baylor College of Medicine

Students use the summer between the third and fourth years to perform healthcare research programs or externships. Students receive their M.B.A. degree from Rice after they have completed 47 hours of approved management course work; they receive their M.D. degree after they have completed the requirements specified by Baylor College of Medicine.

**Academic and Professional Standards**

Students must meet both academic and professional standards to continue academic work and to graduate. In accepting admission to the M.B.A. degree program, all students agree to be governed by the standards and procedures for dismissal or disciplinary action stated below.

**Academic Standards.** A minimum cumulative grade point average of 3.00 (B) is required for graduation. All courses taken for the M.B.A. degree (including approved courses taken at the university but outside the Jones Graduate School) are counted in the cumulative grade point average calculation.

Students with a cumulative grade point average lower than 3.00 at the end of any semester will be notified of dismissal and may no longer register for courses. A student who has been notified of dismissal may appeal to the Academic Standards Committee of the Jones Graduate School. The committee will decide, based on the circumstances of the appeal, whether the student (1) may resume studies on probation, (2) is to be suspended
for one semester or an academic year, or (3) is to be dismissed from the M.B.A. program.

Students proposing to return after a period of academic suspension must apply to the Academic Standards Committee and receive permission to be readmitted.

Only grades of C and higher are counted for credit toward graduation. If students receive a grade lower than C in a course required for graduation, they must repeat the course. If students receive a grade lower than C in an elective course, they need not repeat the specific course, but they must make the required hours.

Students may retake a failed course only once and then only if their cumulative grade point average is 3.00 or higher, or if they have received the permission of the Academic Standards Committee to do so. Students who fail a course twice will be notified of dismissal. (Students may not take any course for which the failed course is a prerequisite unless they pass the prerequisite course.)

Students on academic probation cannot be candidates for student offices, cannot graduate or drop courses, and must complete all future courses with a grade of C or above. Students are removed from probation only upon achieving a cumulative grade point average of at least 3.00 at the end of the following semester of work.

Students who have completed the required number of hours for the M.B.A. degree, the joint M.B.A./master of engineering degrees, or the joint M.B.A./M.D. degree, but who have a cumulative grade point average lower than 3.00, are dismissed without graduation. If, in an appeal to the Academic Standards Committee, a student can substantiate a claim of extenuating circumstances, i.e., those beyond the student’s control, the student will be permitted to take additional course work at the university within the next year to raise his or her grade point average to 3.00.

Professional Standards. M.B.A. students are held to the high standards of professional conduct expected of managers—standards substantially exceeding those expected of them simply as students. Students may be dismissed or suspended for failure to meet professional standards, as defined in the University Code of Conduct. The dean may place a student on disciplinary probation for unacceptable conduct, giving oral and written notice that future misconduct will lead to filing of specific charges. (This probationary notice, however, is not required as a precondition for filing specific charges.)

Academic Grading Policy

Grading Policy

For All Courses:

• The grade of A+ should be given only as an exceptional grade reflecting extraordinary achievement by a student.
• Only grades of C and higher are counted for credit toward graduation. If students receive a grade lower than C in a (core) course required for graduation, they must repeat the course. If students receive a grade lower than C in an elective course, they need not repeat the specific course, but they must make the required hours.
• Grades are considered final and are rarely, if ever, changed for any reason other than calculation errors.
• Jones School students may not take courses pass/fail to count toward their degree requirements.
• Jones School students may audit course with departmental approval. The course will not count towards the M.B.A. or appear on the transcript.

For Core Courses:

• No more than half of all grade assigned by an instructor may be an A- or above.
• A course GPA (combining multiple sections where necessary) between 3.30 and 3.50 should be used as a “target” for assigning grades.
• Instructors in multi-section courses should coordinate the assignment of final grades such that they reflect a consistent grading philosophy for the overall course.

For Elective Courses:

• Regardless of class size, instructors “target” the course GPA (combining multiple sections where necessary) to fall between 3.50 and 3.80.
• To the extent that such course exists, instructors in multi-section electives should coordinate the assignment of final grade such that grades reflect a consistent grading philosophy for the overall course.

Guidelines to Students for Appeal Letter Upon Academic Dismissal

The Process. Students who wish to appeal a dismissal should address the following issues in their letter to the Academic Standards Committee. Send to Dr. Stephen Zeff. Appeals must be submitted in writing.

• What circumstances led to your academic performance last semester and to what degree were those circumstances beyond your control?
• If your performance in a particular course(s) last semester was sub par, describe any circumstances specific to that course which explain your performance.
• Do you expect the circumstances that created the problems for you last semester to change next semester? If so, how?

You may include any other information that you deem relevant in your appeal letter.

Timing. Time is of the essence in the appeal process because classes start immediately after the grades are distributed in January. Inform the director of the M.B.A. program (by e-mail or a written note, please) immediately of your intention if you wish to appeal. Submit your letter to the committee with expedience (within the first week of classes, if not sooner). Grades are considered final and are rarely, if ever, changed for any reason other than calculation errors. If you plan to appeal, attend your classes in January without registering. It will be important for you to keep up in your courses during the appeal process. If your appeal is accepted, you may register later with a letter from the M.B.A. program office.

Confidentiality. Your academic performance is confidential. The privacy of this information is protected by law. This office will not disclose your status to students, faculty, or staff (apart from the Academic Standards Committee and certain staff on a need-to-know basis) or to anyone outside of Rice. A probation, suspension, or dismissal does not show up on your official Rice transcript.

Grade Appeal Policy

The procedure below outlines the process by which a student may appeal a grade in a course.

1. The student should first pursue any grading question with the professor following whatever formal or informal process the professor has outlined for the course.
2. If the matter is not resolved in step 1 above, the student must file a written appeal to the professor and send a copy to the M.B.A. program director. This written appeal must be filed no later than 45 days after the last day of finals for the module (mini-semester) in which the course was offered.
Drop/Add Policy

If student is taking a ONE MODULE class:
- May drop/add a class without penalty during the first week of class with director of M.B.A. program’s approval;
- Must attend first class, and may not miss more than one class during the first week of class;
- Must obtain director of M.B.A. program and instructors’ permission to add class after the first week;
- May not drop courses after the first week of class

If student is taking a TWO MODULE class:
- May drop/add a class without penalty during the first week of class with director of M.B.A. program’s approval;
- Must attend first class, and may not miss more than two classes during the first two weeks of class;
- Must obtain director of M.B.A. program and instructors’ permission to add class after the second week;
- May not drop courses after the second week of class;
- Students may be charged drop/add fees by the registrar’s office after the first week of class;
- Students may not drop courses where the honor council has ruled a loss of credit;
- Students who drop courses after the first week but before the deadline noted above are charged for each drop/add form submitted according to the following fee schedule: Week 2.....$10

If student is taking a THREE MODULE class:
- May drop/add a class without penalty during the first week of class with director of M.B.A. program’s approval;
- Must attend first class, and may not miss more than three classes during the first two weeks of class;
- Must obtain director of M.B.A. program and instructors’ permission to add class after the second week;
- May not drop courses after the third week of class;
- Students may be charged drop/add fees by the Office of the Registrar after the first week of class;
- Students may not drop courses where the honor council has ruled a loss of credit;
- Students who drop courses after the first week but before the deadline noted above are charged for each drop/add form submitted according to the following fee schedule: Week 2.....$10 Week 3.....$15

Independent Study

Minimum Hours Requirement. Each 1-unit credit for independent study should contain approximately as much time content as a 1-module course at JGSM, which is 12 hours of class time, plus an average of at least 24–36 outside-class hours, for a minimum total of 36–48 hours of work. Most independent study projects can probably be accommodated in a 1- or 2-unit independent study; 3-unit independent study projects should be less frequent. Occasionally, a group independent study project may arise, though most independent studies will be undertaken by individual students.

The number of credits for an independent study should be negotiated at the beginning of a project. Increases to the number of project credit hours after the project overview has been filed with the M.B.A. program office must be approved by the Academic Standards Committee. The committee will rely on input from sponsoring faculty in making its decision about ex post credit increases. Requests to increase the number of project credit hours must be made before the end of the second week of classes in the module in which the project begins, except when a student is in their last semester, in which case such requests must be made before the end of the second week of the semester.

Restrictions. No student may take more than 3 credit hours of independent study without the approval of the Academic Standards Committee.

Independent study projects are work for academic credit, not for hire. Students may not earn credit for paid research assistance.

Independent study projects may not duplicate existing courses, or portions thereof. Independent study projects may not focus on topics or projects available to the student through the established curriculum. Questions regarding whether an independent study duplicates existing coursework available to a specific student should be addressed to the M.B.A./E. program director; appeals to the program director’s decision will be sent to the Academic Standards Committee.

Faculty Sponsorship. Independent study projects are normally sponsored only by full-time JGSM faculty. Students wishing for sponsorship by an adjunct faculty member must submit a project overview to the Academic Standards Committee and obtain the committee’s approval, before the module(s) in which the project is to begin.

Common Requirements. The goal of independent study projects is to advance or deepen a student’s knowledge or competency in a business discipline or activity. To facilitate these goals, independent study projects generally fall into two broad categories: (1) directed reading and study resulting in a research paper, or (2) an experiential or hands-on project resulting in an outcome such as an empirical analysis or a webpage/site with an executive summary of the “deliverable.”

While the content of individual independent study projects are at the discretion of a student and the sponsoring faculty member, JGSM would like to ensure relatively equal workloads per unit of independent study credit, and some common requirements between independent study projects. To that end, students and/or sponsoring faculty should:
1. Prepare and submit to the M.B.A. program office an overview of the independent study project with number of project credits, anticipated final results and a broad timeline of anticipated project milestones.

2. Meet to discuss the project, after the initial agreement on the project scope, at least once every 2–3 weeks.

3. Prepare a final paper (in the case of directed reading and research projects), or complete a concrete deliverable (for example, a completed webpage, computer program, survey results, empirical analyses, etc.) together with an executive summary of the project (in the case of experiential projects).

4. File a copy of each student’s final paper, or executive summary, with the M.B.A. program office.

**Class Attendance Policy**

Students are expected to be in class on the first day of each module. The faculty reserves the right to exclude students from their courses who do not show up on the first day. For special circumstances, see faculty and/or director of M.B.A. program immediately.

**Withdrawal Policy**

A Jones School student may voluntarily withdraw from school at any time. Rice University applies a sliding scale to tuition and fees, so early action to withdraw saves money.

**Jones School Student Handbook**

Generally, the Jones School adheres to the academic regulations of Rice University. However, the Jones School has unique policies and procedures that vary from the Office of Graduate Studies regarding, but not limited to, leave of absence, withdrawals and readmission, drop/add, academic discipline, dismissal, procedures for resolution of problems, and appeal of academic regulations. All Jones School students are responsible for adhering to policies and procedures listed in the *Jones School Student Handbook* given to students during pre-term. A copy of the handbook may also be obtained from the M.B.A. program office.

**Financial Aid**

Financial assistance by the Jones Graduate School is awarded only for a given semester or year. Continuation of assistance depends upon satisfactory academic performance, professional behavior, and availability of funds. Academic or disciplinary probation, suspension, or more than three grades below B- result in the removal of all forms of school financial assistance, whether scholarship, loan, or employment. Scholarships are awarded for a combination of need and academic merit.

See ACCO and MGMT in the Courses of Instruction section.
Managerial Studies

The School of Social Sciences

Degree Offered: B.A.

The major in managerial studies is an interdepartmental, nonprofessional program designed to provide undergraduates with an understanding of the environment in which businesses and other organizations exist today, and of some of the tools employed by management in the commitment of its financial and human resources. All students taking the managerial studies major must also complete at least one of the established departmental or interdepartmental majors, other than an area major. Managerial studies is not the equivalent of an undergraduate business major at other universities.

Degree Requirements for B.A. in Managerial Studies

For general university requirements, see Graduation Requirements (pages 18–20). For the B.A. degree, students majoring in managerial studies must complete the following 11 core courses in addition to satisfying all the requirements for their second departmental or interdepartmental major:

- ACCO 305 Introduction to Accounting
- *CAAM 376 Introduction to Management Science
- ECON 211 Principles of Economics I (microeconomics)
- ECON 212 Principles of Economics II (macroeconomics)
- **ECON 448 Corporation Finance
- MANA 404 Management Communications in a Consulting Simulation
- PSYC 101 Introduction to Psychology
- PSYC 231 Industrial and Organizational Psychology
- **STAT 280 Elementary Applied Statistics
- ***ECON 448 Corporation Finance
- MANA 404 Management Communications in a Consulting Simulation
- PSYC 101 Introduction to Psychology
- PSYC 231 Industrial and Organizational Psychology
- **STAT 280 Elementary Applied Statistics
- ***ECON 448 Corporation Finance
- MANA 404 Management Communications in a Consulting Simulation
- PSYC 101 Introduction to Psychology
- PSYC 231 Industrial and Organizational Psychology
- **STAT 280 Elementary Applied Statistics
- ***ECON 448 Corporation Finance
- MANA 404 Management Communications in a Consulting Simulation
- PSYC 101 Introduction to Psychology
- PSYC 231 Industrial and Organizational Psychology
- **STAT 280 Elementary Applied Statistics
- ***ECON 448 Corporation Finance
- MANA 404 Management Communications in a Consulting Simulation
- PSYC 101 Introduction to Psychology
- PSYC 231 Industrial and Organizational Psychology
- **STAT 280 Elementary Applied Statistics
- ***ECON 448 Corporation Finance
- MANA 404 Management Communications in a Consulting Simulation
- PSYC 101 Introduction to Psychology
- PSYC 231 Industrial and Organizational Psychology
- **STAT 280 Elementary Applied Statistics
- ***ECON 448 Corporation Finance
- MANA 404 Management Communications in a Consulting Simulation
- PSYC 101 Introduction to Psychology
- PSYC 231 Industrial and Organizational Psychology
- **STAT 280 Elementary Applied Statistics
- ***ECON 448 Corporation Finance
- MANA 404 Management Communications in a Consulting Simulation
- PSYC 101 Introduction to Psychology
- PSYC 231 Industrial and Organizational Psychology
- **STAT 280 Elementary Applied Statistics
- ***ECON 448 Corporation Finance
- MANA 404 Management Communications in a Consulting Simulation
- PSYC 101 Introduction to Psychology
- PSYC 231 Industrial and Organizational Psychology
- **STAT 280 Elementary Applied Statistics
- ***ECON 448 Corporation Finance
- MANA 404 Management Communications in a Consulting Simulation
- PSYC 101 Introduction to Psychology
- PSYC 231 Industrial and Organizational Psychology
- **STAT 280 Elementary Applied Statistics

1 course from the following:
- ECON 435 Industrial Organization
- ECON 436 Regulation
- ECON 438 Economics of the Law I
- ECON 439 Economics of the Law II
- POLI 335 Political Environment of Business
- POLI 338 Policy Analysis

1 course from the following:
- ACCO 406 Management Accounting
- ACCO 409 Financial Reporting and Analysis
- ECON 370 Microeconomic Theory
- or ECON 372 Mathematical Microeconomics
- STAT 420 Quality Process Control from an Experimental Design Perspective

* or CAAM 378, STAT/ECON 400, STAT 410, 421, 486
** Psychology, sociology, and political science majors may satisfy this requirement with PSYC 339/STAT 339, SOCI 398, or POLI 395 respectively. Students with a calculus background should take STAT 305, STAT 310/ECON 382, or STAT 331/ELEC 331.
*** or ENGI 303

MANA 404 is a capstone course that may not be taken until 8 of the 10 other required courses in the major have been completed. Students having strong mathematical backgrounds are encouraged to substitute courses that cover equivalent subject matter for STAT 280 and CAAM 376.

For more information, students should consult the program director, Ronald Soligo, in 268 Baker Hall.

See MANA in the Courses of Instruction section.
Mathematics

The Wiess School of Natural Sciences

Chair
Robin Forman

Professors
Michael Boshernitzan
Tim D. Cochran
Robert M. Hardt
F. Reese Harvey
John Hempel
Frank Jones
John C. Polking
Stephen W. Semmes
Richard A. Stong
William A. Veech
Michael Wolf

Associate Professor
Zhiyong Gao

Assistant Professor
Brendan Hassett

Instructors
Richard Evans
Donghooon (David) Hyeon
Joseph Masters
Joung (Jaime) M. N. Song
Tamas Wiandt

Degrees Offered: B.A., M.A., Ph.D.

The program in mathematics provides undergraduates with a spectrum of choices, from nontheoretical treatments of calculus and courses in modern algebra, combinatorics, elementary number theory, and projective geometry to a broad variety of sophisticated mathematics, including real and complex analysis, differential geometry, abstract algebra, algebraic and geometric topology, algebraic geometry, and partial differential equations.

Faculty research interests range from differential geometry, ergodic theory, group representation, partial differential equations, and probability, to real analysis, mathematical physics, complex variables, algebraic geometry, combinatorics, geometric topology, and algebraic topology.

Degree Requirements for B.A. in Mathematics

For general university requirements, see Graduation Requirements (pages 18–20). Students majoring in mathematics may choose between the regular math major and the double major. Regular math majors must complete:

• MATH 101 and 102 Single Variable Calculus I and II
• MATH 211 Ordinary Differential Equations and Linear Algebra and MATH 212 Multivariable Calculus
  or MATH 221 and 222 Honors Calculus III and IV
• At least 24 semester hours (8 courses) in departmental courses at the 300 level or above (in many instances, the math department will waive the 100- and 200-level courses for a math major)

The requirements for the double major are the same except that students may substitute approved mathematics-related courses for up to 9 of the 24 hours required at the 300 level or above.

Students receive advanced placement credit for MATH 101 by achieving a score of 4 or 5 on the AP AB-level test and for MATH 101 and 102 by achieving a score of 4 or 5 on the BC-level test. Students who have had calculus but have not taken the AP test may petition the department for a waiver of the calculus requirements. Entering students should enroll in the most advanced course commensurate with their background; advice is available from the mathematics faculty during Orientation Week.

Degree Requirements for M.A. and Ph.D. in Mathematics

Admission to graduate study in mathematics is granted to a limited number of students who have indicated an ability for advanced and original work. Normally, students take one or two years after the B.A. degree to obtain an M.A. degree, and they take four or five years to obtain a Ph.D. An M.A. is not a prerequisite for the Ph.D. For general university requirements, see Graduate Degrees (pages 62–67).

A number of graduate scholarships and fellowships are available, awarded on the basis of merit. As part of the graduate education in mathematics, students also engage in teaching or other instructional duties, generally for no more than 6 hours a week.

M.A. Program. Candidates for the M.A. in mathematics must:

• Complete with a grade of B or better a course of study approved by the department (students may transfer credits from another university only with the approval of both the department and the University Graduate Council)
• Perform satisfactorily on an examination in at least 1 approved foreign language (French, German, or Russian)
• Either complete all requirements for qualification as a candidate for the Ph.D. (see below) or present, and provide an oral defense of, an original thesis acceptable to the department

Ph.D. Program. Candidates for the Ph.D. in mathematics must:

• Complete with a grade of B or better a course of study approved by the department (students may transfer credits from another university only with the approval of both the department and the University Graduate Council)
• Perform satisfactorily on qualifying examinations (see below)
• Perform satisfactorily on examinations in 1 approved foreign language (French, German, or Russian)
• Write an original thesis acceptable to the department
• Perform satisfactorily on a final oral examination on the thesis

Qualifying Examinations. The qualifying examinations in mathematics consist of the general examinations and the advanced oral examination.

To complete the general examinations, students must take 3 exams, 1 each in algebra, analysis, and topology. Exams are offered every August and January. First-year students may take any combination of exams at any time. After two semesters of study, students must attempt to pass all remaining exams at each offering. Students must perform satisfactorily on all 3 by the start of their fifth semester. Students may take an exam several times.

To complete the advanced oral examination, students must select a special field (e.g., homotopy theory, several complex variables, or group theory) and submit it to the department Graduate Committee for approval. The committee schedules an advanced examination in the selected field, normally six to nine months after the student completes the general examinations. While students failing the advanced examination may, with the approval of the committee, retake it on the same or possibly on a different topic, they generally are not allowed to take the advanced examination more than twice.

See MATH in the Courses of Instruction section.
Mechanical Engineering and Materials Science

The George R. Brown School of Engineering

Chair
Tayfun E. Tezduyar

Professors
John E. Akin
Andrew R. Barron
Yildiz Bayazitoglu
Michael M. Carroll
Rex B. McLellan
Pol D. Spanos
James Tour

Assistent Professors
Marek Behr
S. Scott Collis
Chad M. Landis
Marcia E. O’Malley
Jeffrey D. Reuben
Keith Stein

Adjunct Associate Professors
Sarmad Adnan
Aladin Boriek
James B. Dabney

Adjunct Assistant Professors
Catherine G. Ambrose
Robert Cunningham
David M. McStravick

Boris I. Yakobson

Professors Emeriti
Franz R. Brotzen
Alan J. Chapman
Angelo Miele
Ronald P. Nordgren
Chao-Cheng Wang

Associate Professors
Enrique V. Barrera
Fathi Ghorbel
Andrew J. Meade

Degrees Offered: B.A., B.S.M.E., B.S.M.S., M.M.E., M.M.S., M.S., Ph.D.

Mechanical Engineering and Materials Science

Studys in mechanical engineering may lead to specialization in one of several areas, including mechanics, computational mechanics, stochastic mechanics, fluid dynamics, heat transfer, dynamics and control, robotics, biomedical systems, and aerospace sciences. Studies in materials science may lead to specialization in one of several areas, including nanotechnology, metals physics, statistical mechanics, metallic solid thermodynamics, materials chemistry, aspects of composites, coatings and thin films, and interface science.

The graduate program offers professional degrees in both materials science and engineering, which is based on undergraduate preparation in a number of related fields, and mechanical engineering, which permits specialization in the areas mentioned in the previous paragraph. Graduate students ma may pursue research degrees. Faculty research areas are indicated in the previous paragraph. A joint M.B.A./Master of Engineering degree is available in conjunction with the Jesse H. Jones Graduate School of Management. Also, a combined M.D. and advanced research degree for research careers in medicine is available with Baylor College of Medicine.

The graduate program collaborates with other departments in its comprehensive educational and research activities. The Department of Computational and Applied Mathematics supports research in applied analysis and computational mathematics. Work on expert systems and robotics is done in cooperation with the Departments of Electrical and Computer Engineering and Computer Science. Computer graphics research involves the cooperation of the Department of Computer Science and the School of Architecture. The campus-wide Rice Quantum Institute is also active in the research of electronic materials and other aspects of materials science. Finally, biomechanics and biomaterials research involves several institutions in the Texas Medical Center.

Degree Requirements for B.A., B.S.M.E. in Mechanical Engineering or B.A., B.S.M.S. in Materials Science and Engineering

The B.A. program in either mechanical engineering or materials science and engineering is highly flexible, involves less technical content, and allows students greater freedom to pursue areas of interest outside of engineering.

The two B.S. programs prepare students for professional practice of engineering. During their senior year, mechanical engineering students in the B.S. program take courses in design application while completing a major design project, and materials science and engineering students in the B.S. program work on a design problem in an industrial setting. The B.S.M.E. program is accredited by the Accreditation Board for Engineering and Technology (ABET). Departmental goals and objectives are available at http://mems.rice.edu/undergraduate/goals.html.

For general university requirements, see Graduation Requirements (pages 18–20). Lists of representative undergraduate courses and the usual order in which students take them are available from the department for either the B.A. or B.S. programs in both mechanical engineering and materials science and engineering. The B.S.M.E. degree contains a core of required courses and selected electives from 1 of 6 specialization areas. The requirements (131 hours) are:

Basic Mathematics and Science
(26 hours)
CHEM 121 Chemistry (4)
MATH 101 Single Variable Calculus I (3)
MATH 102 Single Variable Calculus II (3)
MATH 211 Ordinary Differential Equations and Linear Algebra (3)
MATH 212 Multivariable Calculus (3)
MSCI 301 Materials Science (3)
PHYS 101 Mechanics (3)
PHYS 102 Electricity and Magnetism (4)

Computational and Applied Mathematics (12 hours)
COMP 110 Computation in Science and Engineering (3)*
CAAM 211 Engineering Computation (3)
CAAM 335 Matrix Analysis (3)
CAAM 336 Differential Equations in Science and Engineering (3)

Senior Design (7 hours)
MECH 407 Mechanical Design Project I (3)
MECH 408 Mechanical Design Project II (4)

Labs (3 hours)
MECH 331 Mechanics Lab (1)
MECH 332 Thermo/Fluids Lab (1)
MECH 431 Senior Lab (1)

Other Courses (32 hours)
MECH 200 Classical Thermodynamics (3)
MECH 211 Engineering Mechanics (3)
MECH 311 Mechanics-Deformable Solids (3)
MECH 340 Industrial Process Lab (1)
MECH 343 Modeling of Dynamic Systems (4)
MECH 371 Fluid Mechanics I (3)
MECH 401 Machine Design (3)
MECH 412 Vibrations (3)
MECH 420 Feedback Control of Dynamic Systems (3)
MECH 481 Heat Transfer (3)

Limited electives (3)**
Specialization Area Cluster Courses (12 hours)
Distribution Electives (24 hours)
Free Electives (15 hours)

* Transition: Students who are currently (2001) in the mechanical engineering program may substitute another course for COMP 110 with approval of the chair of the mechanical engineering Curricular Advising Committee.
** Any 300 level or higher MATH, CAAM, STAT, or MECH course.
Specilization Area Options: The Specialization Area can be 1 of the following 5 clusters. Students must take at least 2 of the following Required Cluster courses for their selected cluster and 2 from the departmental list of the Suggested Cluster Elective courses. The cluster advisors will update elective courses as needed and maintain lists of electives in the department. Also, there is a General Mechanical Engineering cluster. The Required Cluster courses are:

1. Biomechanics
   - BIOE 372 Intro Biomechanics
   - MECH 380 Tissue Mechanics
   - MSCI 402 Mech. Properties of Materials

2. Computational Mechanics
   - MECH 417 Finite Element Analysis
   - MECH 454 Finite Elements in Fluids

3. Fluid Mechanics and Thermal Science
   - MECH 372 Fluid Mechanics, II
   - MECH 471 App. of Thermodynamics

4. Solid Mechanics and Materials
   - CIVI 400 Mechanics of Solids II

5. System Dynamics and Control
   - MECH 498 Intro to Robotics
   - MECH 435 Electromechanical Systems

6. General Mechanical Engineering
   - MECH 340 Mechanics of Solids
   - MECH 331 Fluid Mechanics, II

B.A. Program. Students seeking the B.A. degree with a major in mechanical engineering must complete 120 hours with at least 66 semester hours in courses specified by the department along with 24 hours of university distribution electives and 30 hours of free electives. Lists of courses, including general university requirements and the usual order in which students take them are available from the department. The B.A. program mirrors the B.S.M.E. program in the freshman and sophomore years with the exceptions that MECH 340 and MECH 331 are not required. Specific major requirements are completed in the junior and senior years along with electives. A summary appears below:

Freshman Year: Same as B.S. with 23 major and 9 elective hours for 32 hours.

Sophomore Year: Same as B.S. (except MECH 340 and 331 are not required) with 18 major and 15 elective hours for 33 hours.

Junior and Senior Years: 25 major and 30 electives for 55 hours. The following courses are required in junior and senior years:

- CAAM 335 Matrix Analysis (3)
- CAAM 336 Differential Equations in Science and Engineering (3)
- MECH 343 Modeling of Dynamic Systems (4)
- MECH 371 Fluid Mechanics I (3)

- MECH 401 Machine Design (3)
- MECH 412 Vibrations (3)
- MECH 420 Feedback Control of Dynamic Systems (3)
- MECH 481 Heat Transfer (3)

Students seeking the B.A. degree with a major in materials science and engineering must complete at least 52 hours in courses specified by the department plus additional hours for a total of 120 hours at graduation.

Students seeking the B.S.M.S. must complete at least 91 semester hours in courses specified by the department within the total requirements of 134 hours. Basic departmental course requirements for the B.S.M.S. are:

- CHEM 121–122 General Chemistry
- MATH 101 and 102 Single Variable Calculus I and II
- MATH 211 Ordinary Differential Equations and Linear Algebra
- MATH 212 Multivariable Calculus
- MECH 211 Engineering Mechanics
- MECH 301 Materials Science
- PHYS 101 Mechanics
- PHYS 102 Electricity and Magnetism

Specific requirements

- CAAM 211 Introduction to Engineering Computation
- CAAM 335 Matrix Analysis
- CIVI 300 Mechanics of Solids
- MECH 241 Fundamentals of Electrical Engineering I (or ELEC 243 Introduction to Electronics)

- MECH 301 Materials Science
- MECH 303 Materials Science Junior Lab
- MECH 311 Introduction to Design
- MECH 401 Thermodynamics and Transport Phenomena in Materials Science
- MECH 402 Mechanical Properties of Materials

Electives

1 course from the following

- PHYS 201 Waves and Optics
- CHEM 211 Organic Chemistry
- CHEM 311 Physical Chemistry

Degree Requirements for M.M.E., M.M.S., M.S., and Ph.D. in Mechanical Engineering or Materials Science and Engineering

Professional Degree Programs. The professional degrees offered by this department, the Master of Mechanical Engineering (M.M.E.) and the Master of Materials Science (M.M.S.), involve a fifth year of specialized study, which is integrated with the four undergraduate years leading to either the B.A. or the B.S. degree in the same areas of interest. The professional degree programs are open to students who have shown academic excellence in their undergraduate studies.

For general university requirements, see Graduate Degrees (pages 62–67). For both the M.M.E. and M.M.S. degrees, students must complete 30 semester hours of course work. Lists of suggested courses are available from the department. Students should develop a specific plan of study based on their particular interests.

Research Degree Programs. The programs leading to the M.S. and Ph.D. degrees are open to students who have demonstrated outstanding performance in their undergraduate studies. The granting of a graduate research degree presupposes academic work of superior quality and a demonstrated ability to do original research.

For general university requirements, see Graduate Degrees (pages 62–67). Course requirements for the research degrees vary, depending on the extent of individual undergraduate preparation as well as each student’s performance in graduate courses and on qualifying examinations. For both the M.S. and Ph.D. degrees, students must present a thesis that comprises an original contribution to knowledge and defend it in a public oral examination.

See MECH and MSCI in the Courses of Instruction section.
**Medieval Studies**

**The School of Humanities**

**Director and Adviser**
Honey Meconi

**Professors**
Jane Chance
Gilbert Morris Cuthbertson
Donald Ray Morrison
Deborah Nelson-Campbell

**Associate Professors**
Michael Maas
Linda E. Neagley
Naixiu Qian
Carol E. Quillen
Paula Sanders

**Assistant Professors**
David Cook
Eva Haverkamp
Scott McGill

**Lecturer and Playwright in Residence**
E. Douglas Mitchell

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**Degree Offered:** B.A.

This interdisciplinary major enables students to compare medieval cultures, noting both their differences and their common traditions, in the period between 500 and 1500 A.D. The program combines a broad background in various aspects of medieval culture with more specialized study in a selected field. These fields of emphasis include art history, history, medieval literature (English, French, or Latin), music, philosophy, or religion.

**Degree Requirements for B.A. in Medieval Studies**

For general university requirements, see Graduation Requirements (pages 18–20). Students majoring in medieval studies must complete at least 30 semester hours (10 courses); the minimum for double majors is 24 hours. All majors must complete 5 of these medieval studies courses at the 300 or 400 level.

**Required and recommended courses include the following:**

A minimum of 30 semester hours (10 semester courses), of which at least 5 courses must be at the 300/400 level. Double majors must complete a minimum of 24 semester hours.

1 course in medieval literature OR medieval art OR medieval music

Recommended courses:

**Literature:**
- MDST 217 Arthurian Literature
- MDST 316 Chaucer
- MDST 368 Mythologies
- MDST 414 Literature and Culture of the Middle Ages: Saints and Sinners
- MDST 415/425 Courtly Love in Medieval France

**Art:**
- MDST 330 Early Medieval Art: 5th Century–Romanesque Period
- MDST 331 Gothic Art and Architecture in Northern Europe: 1140–1300
- MDST 332 Late Gothic Art and Architecture in Northern Europe: 1300–1500

**Music:**
- MDST 222 Medieval and Renaissance Music
- MDST 429 Music in the Middle Ages

1 of the following courses:
- MDST 201 History of Philosophy I
- MDST 257/357 Jews and Christians in Medieval Europe
- MDST 382 Classical Islamic Culture

Two semesters of foreign language study, determined in consultation with the medieval studies adviser.

Three courses (at least two at the 300 or 400 level) in the student’s chosen field of emphasis—one of these may be a directed reading course.

**Recommended courses:**
- MDST 202 Introduction to Medieval Civilization: The Early Middle Ages
- MDST 203 Introduction to Medieval Civilization: The High Middle Ages
- MDST 315 Introduction to Medieval Culture: 1000–1492

For single majors, 3 additional courses in the medieval period, 1 of which may be a senior thesis (1 semester) on a topic in the student’s field of emphasis. For double majors, 1 additional course in the medieval period.

Students work out their programs of study in consultation with the program director. Those contemplating graduate work in medieval studies should study at least 1 foreign language in some depth (as most graduate schools require a reading knowledge of French and German for the Ph.D.).

Students may select from among the following to fulfill the course requirements for the major in medieval studies.

Please note that not all courses listed below will be offered during the academic year. For a current list of courses that will be offered in fall 2002 and spring 2003, please visit the Medieval Studies website at http://www.ruf.rice.edu/~medieval.

**Classics**
- MDST 101 Elementary Latin I
- MDST 102 Elementary Latin II
- MDST 211 Intermediate Latin I
- MDST 212 Intermediate Latin II
- MDST 300 Medieval Literature: Medieval Women Writers
- MDST 300 Medieval Literature: Dante (In Translation)
- MDST 311 Old English
- MDST 312 Survey of Old English Literature: Gender and Power in Old English
- MDST 313 Beowulf
- MDST 314 Survey of Middle English Literature
- MDST 315 Introduction to Medieval Culture: 1000-1492
- MDST 316 Chaucer
- MDST 317 Arthurian Literature
- MDST 318 J. R. R. Tolkien
- MDST 368 Mythologies
**MDST 395 History of the English Language**

**MDST 406 Christine de Pizan in 15th-Century England**

**MDST 412 Medieval Studies**

**MDST 416 Chaucer and the Subversive Other: Women, Gender, Nation, Class**

**MDST 417 Medieval Women Writers**

**MDST 445 Christine de Pizan in 15th-Century England (enriched version)**

**MDST 461 Directed Reading**

**MDST 462 Directed Reading**

**MDST 472 Old English and Contemporary Theory**

**MDST 478 Medieval Studies Special Topics**

**French**

**MDST 410 The Literary and Historical Image of the Medieval Woman**

**MDST 411 The Literary and Historical Image of the Medieval Woman (enriched version)**

**MDST 414 Literature and Culture of the Middle Ages: Saints and Sinners**

**MDST 415 Courtly Love in Medieval France**

**MDST 425 Courtly Love in Medieval France (enriched version)**

**MDST 436 Literature and Culture of the Middle Ages: King Arthur**

**History**

**MDST 202 Introduction to Medieval Civilization: The Early Middle Ages**

**MDST 203 Introduction to Medieval Civilization: The High Middle Ages**

**MDST 257 Jews and Christians in Medieval Europe**

**MDST 259 The Medieval Cultures of Judaism and Christianity**

**MDST 273 Ancient and Medieval Jewish History: 70–1492**

**MDST 281 The Middle East from the Prophet Muhammad to Muhammad Ali**

**MDST 303 Undergraduate Independent Reading**

**MDST 304 Undergraduate Independent Reading**

**MDST 308 The World of Late Antiquity**

**MDST 320 Science in Antiquity and the Middle Ages**

**MDST 321 Directed Readings in Medieval History**

**MDST 322 Directed Readings in Medieval History**

**MDST 325 Introduction to Medieval Civilization: The Early Middle Ages (enriched version)**

**MDST 326 Introduction to Medieval Civilization: The High Middle Ages (enriched version)**

**MDST 345 Early Modern Europe: Humanism and Expansion**

**MDST 357 Jews and Christians in Medieval Europe (enriched version)**

**MDST 359 The Medieval Cultures of Judaism and Christianity**

**MDST 373 Ancient and Medieval Jewish History: 70–1492 (enriched version)**

**MDST 382 Classical Islamic Culture**

**MDST 384 The Crusades: Holy War in Medieval Christendom and Islam**

**MDST 385 Christians and Jews in the Medieval Islamic World**

**MDST 387 Life on the Nile: Egyptian Politics, Culture, and Society: Medieval–Modern Times**

**MDST 438 Women and Gender in Islamic Societies**

**MDST 444 Memory and Commemoration in the Middle Ages**

**MDST 446 Jewish Communities in the Middle Ages and Early Modern Times**

**MDST 455 Guide to the Sources of Medieval History**

**MDST 460 Advanced Seminar in Ancient History: The Age of Justinian**

**MDST 465 Jews and Christians: Perceptions of the Other**

**MDST 488 Topics in Medieval History**

**Linguistics**

**MDST 311 Old English**

**MDST 395 History of the English Language**

**MDST 373 Ancient and Medieval Jewish History: 70–1492 (enriched version)**

**MDST 382 Classical Islamic Culture**

**MDST 384 The Crusades: Holy War in Medieval Christendom and Islam**

**MDST 385 Christians and Jews in the Medieval Islamic World**

**MDST 387 Life on the Nile: Egyptian Politics, Culture, and Society: Medieval–Modern Times**

**MDST 438 Women and Gender in Islamic Societies**

**MDST 444 Memory and Commemoration in the Middle Ages**

**MDST 446 Jewish Communities in the Middle Ages and Early Modern Times**

**MDST 455 Guide to the Sources of Medieval History**

**MDST 460 Advanced Seminar in Ancient History: The Age of Justinian**

**MDST 465 Jews and Christians: Perceptions of the Other**

**MDST 488 Topics in Medieval History**

**See MDST in the Courses of Instruction section.**
Military Science

Chair and Professor
Lieutenant Colonel Bryan Whalen
Assistant Professors
Sergeant First Class Tol Avery
Captain Dexter Caston
Major Paul Gass
Major Kerry A. Reyna

The goal of the U.S. Army ROTC program is to develop technically competent, physically fit, and highly motivated men and women for positions of responsibility as commissioned officers in the active army, the army reserve, and the National Guard. Upon completion of the curriculum, students will have an understanding of the fundamental concepts and principles of the military as an art and as a science. The leadership and managerial experience gained through ROTC provides great benefit for students in both their civilian endeavors and in their military careers.

Degree Requirements for Military Science Program

For general university requirements, see Graduation Requirements (pages 18–20). Further details on ROTC programs at Rice are available on pages 24–25. For more information on the Army ROTC program in particular, contact the military science department at the University of Houston by calling 713-743-3875.

Statutory Authority. General statutory authority for establishment and operation of the ROTC program, including the scholarship program, is contained in Title 10, United States Code, Chapter 103 (Sec. 2102-2111). Specific rules and procedures are found in U.S. Army Regulation 145-1.

Course Credit. ROTC classes may be taken for elective credit toward any degree plan at the University of Houston. Freshman- and sophomore-level classes are open to all students, regardless of age or physical condition. No military obligation is incurred as a result of enrollment in these courses. Junior- and senior-level courses are more restrictive and do require a military obligation. ROTC scholarship students also incur a military obligation.

Four-Year Program. The four-year program is divided into two courses: the basic course, which is normally attended by students during their freshman and sophomore years, and the advanced course, attended during the junior and senior years. Advanced course students attend a six-week advanced camp in Fort Lewis, Washington, normally between their junior and senior years.

The Basic Course. The basic course consists of four semesters of military science, which include MILI 121, MILI 122, MILI 201, and MILI 202. These freshman- and sophomore-level classes are open to all students without obligation.

The Advanced Course. Students entering the advanced course must enter into a contract to pursue and accept a commission in the active army, the army reserve, or the National Guard. To be considered for contracting into the advanced course, the student must be a full-time student in a course of instruction that leads to a degree in a recognized academic field, have a minimum of two years of academic work remaining in a curriculum leading to a baccalaureate or advanced degree, be under age 30 when commissioned, and pass a physical examination.

Two-Year Program. The two-year program is designed for students who did not take the basic course but are otherwise eligible to enroll in the advanced course. This program allows students completing their sophomore year to attend a five-week “basic camp” during June and July at Fort Knox, Kentucky, in lieu of taking the first two years of ROTC. There is no military obligation for attending basic camp. The army provides transportation, room, and board. Students are paid approximately $700 for the five-week period.

Laboratory Requirements. A military science laboratory is required for students enrolling in MILI 121, MILI 122, MILI 201, MILI 202, MILI 301, MILI 302, MILI 401, and MILI 402. This laboratory provides opportunities for marksmanship training, rappelling, drill and ceremonies, communications training, and other activities.

Veterans. Veterans who have served on active duty or in the army reserve or National Guard are also eligible for the ROTC program. Although veterans are not required to take the basic course, they are encouraged to do so. All students, including veterans, must have a minimum of 60 credit hours prior to enrolling in the advanced course.

National Guard and Army Reserve Members. Students enrolled in ROTC may also be members of the Army Reserve/National Guard. Through the Simultaneous Membership Program (SMP), those students enrolled in the advanced course will be placed in a leadership position as a cadet and will receive pay and entitlements from the National Guard or Army Reserve in the pay grade of Sergeant (E-5).

Financial Assistance. The United States Army offers, on a competitive nationwide basis, four-, three-, and two-year scholarships. The scholarships cover up to $16,000 of tuition. Recipients also receive benefits for educational fees (to include lab fees), a book allowance, and a subsistence allowance of $300 per month. Applicants must be U.S. citizens and must be under age 27 on the anticipated graduation date. Applications are available from the military science department. Veteran applicants can extend the age limit up to a maximum of three years, based on prior active duty service.

Other Financial Aid. All students enrolled in the advanced course will receive a subsistence allowance of $300 per month. For more information, contact the military science department. GI Bill recipients still retain benefits.

Tuition. Members of the army or the National Guard, Texas State Guard, or other reserve forces may be exempted from the nonresident tuition fee and other fees and charges.

Special Training. Basic- and advanced-course students may volunteer for and may attend the U.S. Army Airborne and Air Assault courses during June, July, and August. Cadet Troop Leadership training positions are also available to advanced-course cadets during the summer months.
Miscellaneous. Cadets in the advanced course are paid an allowance of $300 per month during the school year. Military textbooks and uniforms are furnished to all cadets. The Corps of Cadets sponsors an annual military ball in addition to other social events throughout the school year. The Department of Military Science sponsors extracurricular activities such as the University of Houston Color Guard and the Ranger Challenge Team.

Minor in Military Science. To qualify for a minor in military science, students must complete a minimum of 18 semester hours of course work, of which 12 must be advanced. Nine semester hours must be completed in residence, of which 6 must be advanced. Students must also attend advanced camp. Students must attain a 2.00 grade point average or higher in military science courses attempted at this university. Students may receive credit for 100- and 200-level courses based on prior military training, completion of ROTC Basic Camp, completion of JROTC training, or completion of one year at a service academy.

See MILI in the Courses of Instruction section (these are University of Houston listings).
Music

The Shepherd School of Music

Interim Dean
Anne Schnoebelen

Professors
Richard Brown
Leone Buyse
Marcia J. Citron
James Dunham
Paul V. H. Ellison
Joyce Farwell
Norman Fischer
Kenneth Goldsmith
Arthur Gottschalk
Lynn Harrell
Clyde Holloway
Kathleen Kaun
Richard Lavenda
Sergiu Luca
Jon Kimura Parker
Larry Rachleff
Robert Roux
Anne Schnoebelen
Marie Speziale
Kathleen Winkler

Professor Emeritus
Raphael Fliegel

Associate Professors
Robert Atherholt
Walter B. Bailey
Desmond Hoebig
Thomas I. Jaber
Benjamin C. Kamins
David E. Kirk
Honey Meconi
William B. Murray

Assistant Professors
Paula Page
David Peck
Timothy Pitts
Karen Ritscher
William Ver Meulen
David L. Waters
Michael Webster

Assistant Professors
Karim Al-Zand
Gregory Barnett
Anthony K. Brandt
Shih-Hui Chen
David Ferris
Pierre Jalbert
Kurt Stallmann

Instructor
Joan DerHovespian

Artist Teachers
Brian Connelly
Jan de Chambrier
Debra Dickinson
Jeanne Kierman Fischer
Michael Franciosi
Christopher French
Janet Rarick
C. Dean Shank, Jr.

Lecturer
Nancy Gisbrecht Bailey

Adjunct Lecturers
C. Richard Stasney
Pieter A. Visser

Degrees Offered: B.A., B.Mus., B.Mus./M.Mus., M.Mus., D.M.A.

At the undergraduate level, the Shepherd School of Music offers both professional training and a broad liberal arts curriculum. Degree programs include a B.A. degree in music and a B.Mus. degree in performance, composition, music history, and music theory. Acceptance into a five-year honors program leads to the simultaneous awarding of the B.Mus. and M.Mus degrees.

At the graduate level, the school offers professional music training for qualified students who concentrate on music composition, performance, or research that is...
supported by lab or performing ensembles. This training includes theory and history seminars. Advanced degree programs include a M.Mus. degree in composition, choral and instrumental conducting, historical musicology, performance, and music theory and a D.M.A. degree in composition and selected areas of performance.

Requirements for All Music Majors

All students majoring in music must participate in core music, applied music, and other required music courses, as well as in chamber music and large ensembles, taking nonmusic courses as specified by the university plus electives. They are entitled to one hour of private lessons each week of each semester they are enrolled as a music major; private or group lessons beyond this may result in additional fees. Students in the B.A. program who wish to continue taking private lessons beyond the required four semesters of instrumental or vocal study must obtain permission from the dean of the Shepherd School.

Examinations. At the end of each semester, a jury examination in applied music is given over the material studied during the semester. (All degree candidates except B.A. students must demonstrate keyboard proficiency in an examination. If students have little or no knowledge of the keyboard, they should enroll in secondary piano at the beginning of their first semester and continue study until they can meet the examination requirements.)

Performance. Students are expected to perform frequently during their residence at Rice. Performance majors must present at least 2 full recitals. Composition and conducting students should present recitals as specified by their degree programs. Students are expected to attend both faculty and student recitals. In addition, all music majors must participate in the school’s conducted ensembles as assigned.

Degree Requirements for B.A. in Music, B.Mus., and B.Mus./M.Mus.

Admission. An audition, either in person or on tape, is required of each undergraduate applicant. The Shepherd School faculty and the university’s Committee on Admission jointly determine admission, the latter basing its evaluation upon the student’s academic achievement and other standards of college admission. Transfer applicants from other colleges, conservatories, and universities must also provide an audition, personal or taped, and take placement exams in both music history and music theory. Once admitted, their prior preparation in music is assessed, which may reduce the required period of study at Rice.

B.A. and B.Mus. Program. For general university requirements, see Graduation Requirements (pages 18–20).

For either bachelor’s degree, students majoring in music must have a total of at least 120 semester hours at graduation. The complete curriculum for each major in music is available in the Shepherd School Student Handbook or in the undergraduate music office on the second floor of Alice Pratt Brown Hall. While the number of required hours vary according to major area, all music students must take the following core courses (those in the B.A. program do not need to take MUSI 331, 332 and 431).

- **Music Theory:** MUSI 211, 212, 311, 312, and a theory elective chosen from MUSI 412, 416, 513, or 613.
- **Music History:** MUSI 222, 321, 322, and 421
- **Aural Skills and Performance Techniques:** MUSI 231, 232, 331, 332, and 431

B.Mus./M.Mus. Honors Program. The same general university requirements apply, but students seeking the combined B.Mus./M.Mus. degree must complete a total of at least 150 semester hours by graduation. The number of required hours varies according to major area.

The first five semesters of course work in this program parallel the core curriculum of the bachelor’s degrees. The sixth semester is a transitional semester during which students qualify for admission to the combined program. For further information, including application procedures, see the Shepherd School Student Handbook.

Degree Requirements for M.Mus. and D.M.A. in Music

Admission. For instrumental and conducting applicants, an audition is required. Composition majors must submit portfolios, and musicology and theory majors must provide samples of their written work. The Graduate Record Examination (GRE) is required of graduate applicants in musicology, theory, and composition. Musicology applicants must also complete the advanced music tests.

Requirements. For general university requirements, see Graduate Degrees (pages 62–67). For the M.Mus. degree, candidates must complete at least two semesters of full–time study at Rice. Semester hour minimums for the M.Mus. degree vary according to major area. For the D.M.A., candidates must complete a total of 90 hours beyond the bachelor’s degree, attending Rice full time for at least four semesters after receiving their M.Mus. degree.

Thesis. A thesis is required of both music history and music theory majors. In lieu of a thesis, composition majors must produce an original work of extended scope, and conducting majors must present an extended composition or project.

Academic Standards

Curriculum and Degree Requirements. Further information on curricular requirements for all majors and degree programs is available from The Shepherd School of Music.

Grading Policy. All music students must make at least a B- in course work in their major applied area. Students who receive a C+ or lower in their major applied area are placed on music probation. Music probation signifies that the work of the student has been sufficiently unsatisfactory to preclude graduation unless marked improvement is achieved promptly. While on probation, they may not be absent from class except for extraordinary reasons, and they may not represent the school in any public function that is not directly part of a degree program. After receiving a second C+ or lower in their major area, whether in consecutive semesters or not, students are discontinued as music majors.

Leaves of Absence and Voluntary Withdrawal. Music majors must obtain permission in writing from the dean of the Shepherd School before requesting a leave of absence from the university. Requests must be in the dean’s office before the first day of classes in the semester for which leave is requested.

Music majors taking voluntary withdrawal from the university are not guaranteed re-admission into the Shepherd School and may be asked to re-apply/re-audition. (Students should explain the reasons for their withdrawal to the dean before leaving campus.)
Other Musical Opportunities

For Nonmajors. Students who are not music majors may take the following courses designed for the general student (other music courses require the permission of the instructor and the approval of the dean of the Shepherd School).

- MUSI 117/118 Fundamentals of Music I and II
- MUSI 307 Composition for Nonmajors
- MUSI 317/318 Theory for Nonmajors I and II
- MUSI 327/328 Music Literature for Nonmajors I and II
- MUSI 334/335 Campanile Orchestra and Rice Chorale
- MUSI 141–197 for individual instruction in all instruments
- MUSI 340 Concert Band
- MUSI 342 Jazz Ensemble
- MUSI 345 Jazz Improvisation
- MUSI 415 Band Arranging

Lectures and Performances. A visiting lecturer series, a professional concert series, and numerous distinguished visiting musicians contribute to the Shepherd School environment. The Houston Symphony Orchestra, Symphony Chorus, Houston Grand Opera, Texas Opera Theater, Houston Ballet, Houston Oratorio Society, Da Camera, Context, and Houston Friends of Music, as well as the activities of other institutions of higher learning in the area, also provide exceptional opportunities for students to enjoy a wide spectrum of music.

See MUSI in the Courses of Instruction section.
Nanoscale Physics

The Wiess School of Natural Sciences

Director
F. Barry Dunning

Professors
Andrew R. Barron
Neal F. Lane
Kathleen S. Matthews

Associate Professor
Vicki L. Colvin

Assistant Professors
Jason H. Hafner
Michael B. Heeley
Thomas C. Killian
Douglas A. Natelson
Alexander J. Rimberg
Frank R. Toffoletto

Degrees Offered: M.S.

Rice University will introduce a professional master’s degree in Nanoscale Physics for the 2002–2003 academic year. This program combines a strong component in quantum theory, which governs the behavior of systems at the nanoscale, with the study of practical nano- and mesoscale devices. The program will provide the student the knowledge required to successfully navigate the emerging field of nanotechnology. New courses cover cutting-edge areas such as quantum behavior of nanostructures, quantum nanotechnology, nanoscale imaging, and the fabrication of nanostructures. In addition, a year-long course in methods of experimental physics ensures that students obtain the advanced practical skills valuable to industry.

The Nanoscale Physics degree is one of three tracks in the new Professional Master’s Program at Rice housed in the Wiess School of Natural Sciences. These master’s degrees are designed for students seeking to gain further scientific core expertise coupled with enhanced management and communication skills. These degrees instill a level of scholastic proficiency that exceeds that of the bachelor’s level and create the cross-functional aptitudes needed in modern industry. This will allow students to move more easily into management careers in consulting or research and development, design, and marketing of new science-based products.

Degree Requirements for the M.S. in Nanoscale Physics

The 21-month professional master’s program begins with two semesters of course work at Rice followed by a six-month industrial internship. After the internship, students return to Rice for a final semester of course work. In addition to taking technical courses, students in the Nanoscale Physics program will take management courses, a science policy and ethics course, and a seminar jointly with the students involved in the other professional master’s tracks. No thesis is required; however, students are required to present their internship projects in both oral and written form in the Professional Master’s Seminar. Students also are required to attend events organized by the Rice Alliance for Technology and Entrepreneurship and will be guided in courses by the efforts of the Cain Project in Engineering and Professional Communication.

For general university requirements for graduate studies, see pages 68–70, and see also Professional Degrees, page 63.
**Year 1**

**Fall Semester**
- NSCI 501 *Professional Master’s Seminar*
- MGMT 750 *Management for Science and Engineering*
- PHYS 533 *Nanostructures and Nanotechnology I*
- PHYS 537 *Methods of Experimental Physics I*
- PHYS 539 *Characterization and Fabrication at the Nanoscale*

**Spring Semester**
- Elective
- NSCI 501 *Professional Master’s Seminar*
- PHYS 534 *Nanostructures and Nanotechnology II*
- PHYS 538 *Methods of Experimental Physics II*
- PHYS 416 *Numerical Methods and Modeling*

**Summer**
- Industrial Internship

**Year 2**

**Fall Semester**
- NSCI 500 *Industrial Internship*
- NSCI 501 *Professional Master’s Seminar*

**Spring Semester**
- 3 electives
- Science Policy and Ethics
- NSCI 501 *Professional Master’s Seminar*

**Elective Courses:** (Students will choose 4. At least 2 must be science or engineering at the 500 level or above.)

**Biological Sciences**
- CAAM 378 *Introduction to Operations Research*
- CHEM 630 *Molecular Spectroscopy and Group Theory*
- ELEC 568 *Laser Spectroscopy*
- ELEC 595 *Microlithography*
- ELEC 603 *Nano-Optics and Nanophotonics*
- ELEC 645 *Thin Films*
- ELEC 685 *Fundamentals of Medical Imaging*
- ENGI 303 *Engineering Economics and Management*
- MGMT 617 *Managerial Decision Making*
- MGMT 636 *Systems Analysis and Database Design*
- MGMT 661 *International Business Law*
- MGMT 674 *Production and Operations Management*
- MGMT 676 *Project Management/Project Finance*
- MGMT 721 *General Business Law*
- MGMT 751 *New Venture Creation in Science and Engineering*
- PHYS 569 *Ultrafast Optical Phenomena*

or other courses as specified by the program director and approved by the Oversight Committee.
Students enroll in the Navy Reserve Officers’ Training Corps (ROTC) program as scholarship or nonscholarship students. Sophomores may apply for the optional two-year program. The Department of Naval Science is administered by a senior U.S. Navy officer, assisted by officers and enlisted personnel of the U.S. Navy and Marine Corps.

Degree Requirements for Naval Science Program

For general university requirements, see Graduation Requirements (pages 16–18). For further details on ROTC programs at Rice, see page 23. Program requirements differ slightly depending on the student’s scholarship status.

Scholarship Navy ROTC students are appointed midshipmen, U.S. Naval Reserve, on a nationwide competitive basis. They receive retainer pay of $250–$350 per month for a maximum of four academic years, with all tuition, fees, and equipment paid for by the government. Additionally, students receive $250 per semester for books. Midshipmen must complete the prescribed naval science courses and participate in drills and three summer cruises. After graduating with a bachelor’s or graduate degree, they accept a reserve commission as an ensign in the U.S. Navy or as a second lieutenant in the U.S. Marine Corps.

Nonscholarship Navy ROTC students enter into a mutual contract with the Secretary of the Navy to take naval science courses and to participate in drills and one summer training cruise. On a competitive basis, students may apply to continue in the Navy ROTC program through their junior and senior years. The U.S. Navy pays these continuing students $300–$350 per month during their junior and senior years, offering them a reserve commission in the U.S. Navy or Marine Corps upon graduation. The program chair may recommend nonscholarship students, on a local competitive basis, for scholarship status.

Two-Year Program Option. In their sophomore year (junior year for five-year Rice students), students may apply for the two-year Navy ROTC program, competing nationwide for available scholarships. If selected, they attend the six-week Naval Science Institute (NSI) at Newport, Rhode Island, during July and August. NSI provides students with course material and training normally covered during the first two years of the regular Navy ROTC program. Successful completion of NSI qualifies students for enrollment in the advanced Navy ROTC program on an equal footing with the four-year students. Usually about 15 percent of the nonscholarship students finishing NSI are offered two-year Navy ROTC scholarships. Additional scholarships occasionally may be awarded to others upon the recommendation of the program chair.
U.S. Marine Corps Program. Navy ROTC students, either scholarship or nonscholarship, may apply for the U.S. Marine Corps program. Students selected for that program are referred to as “Marine Corps option students” and attend separate classes under a U.S. Marine officer instructor during their junior and senior years.

See NAVA in the Courses of Instruction section.
Neurosciences

The School of Social Sciences

Director
James R. Pomerantz

Professors
Steven J. Cox
John W. Clark
Raymon M. Glantz
Don H. Johnson
Randi C. Martin
Daniel Osherson
James R. Pomerantz
Moshe Y. Vardi
Rick K. Wilson

Professor Emeritus
Sydney M. Lamb

Associate Professors
Michael Stern
Devika Subramanian

Assistant Professors
Robert Nowak
Geoffrey F. Potts
Tony Ro

Degrees Offered: none

In the 1999–2000 academic year, Rice University began offering a new set of courses in the area of Neuroscience to supplement a set of courses already offered by various departments in closely allied areas. These courses, which carry the designation NEUR, are offered in part by faculty associated with the Division of Neurosciences at Baylor College of Medicine and in part by faculty at Rice in several different departments (including Biochemistry and Cell Biology, Computer Science, Electrical and Computer Engineering, Linguistics, and Psychology.) They are intended primarily for Rice graduate students but, with permission may be available to advanced undergraduates. Some of these classes are taught at the nearby Baylor campus, and some are taught according to Baylor’s academic calendar, which is different from Rice’s. For further information on what courses are available and for instructions on how to apply to enter these classes, consult Rice’s neuroscience website at http://www.ruf.rice.edu/~neurosci/.

Courses
NEUR 511 Integrative Neuroscience Core I
NEUR 512 Integrative Neuroscience Core II
NEUR 505 Optical Imaging
NEUR 506 Concepts of Learning and Memory
NEUR 515 Neural Development
NEUR 516 Sensory Systems
Philosophy

The School of Humanities

Chair
Steven G. Crowell

Professors
Baruch Brody
Hugo Tristram Engelhardt, Jr.
Richard E. Grandy
Mark Kulstad
Donald Ray Morrison
George Sher

Assistant Professors
Nomy Arpaly
Sherrilyn Roush
Rachel Zackert

Adjunct Professor
Laurence McCullough

Degrees Offered: B.A., M.A., Ph.D.

Philosophy is best described as the attempt to think clearly and deeply about the fundamental questions that arise for us as human beings. What is the nature of knowledge (epistemology)? How are we to distinguish between what really is and what only seems to be (metaphysics)? What is the right thing to do (ethics)? Is there any meaning to existence? To study the history of philosophy is to study the best, most enduring answers that have been given to these questions in the past. Because every other field of study adopts some stance toward these questions, though often implicitly, philosophical issues arise in the natural and social sciences, history, linguistics, literature, art, and so on. Special courses in philosophy deal with each of these. Characteristic of philosophy are commitments to the construction and evaluation of arguments, to expressing thoughts clearly and precisely, and to defending one’s ideas and evaluating the ideas of others. The study of philosophy thus provides resources for critical participation in all realms of human endeavor.

The graduate program trains students to teach and pursue research in the main areas of department concentration: ethics (especially bioethics) and social and political philosophy, history of philosophy, continental philosophy, and core portions of contemporary analytic philosophy.

Degree Requirements for B.A. in Philosophy

For general university requirements, see Graduation Requirements (pages 18–20). Students majoring in philosophy must complete 30 semester hours (10 departmental courses); At least 18 hours (6 courses) must be at the 300 level or above. A double major must complete 27 hours (9 departmental courses) with all other requirements remaining the same.

Majors must take the following courses:
PHIL 201 History of Philosophy I, PHIL 202 History of Philosophy II, and either PHIL 106 Logic or PHIL 305 Mathematical Logic

In addition, majors must take at least one course from each of the following area lists:

- **History:** PHIL 301 Ancient and Medieval Philosophy, PHIL 302 Modern Philosophy, PHIL 308 Continental Philosophy, PHIL 321 Kant and 19th Century Philosophy
- **Core Analytic:** PHIL 303 Theory of Knowledge, PHIL 304 Metaphysics, PHIL 312 Philosophy of Mind, PHIL 313 Philosophy of Science, PHIL 353 Philosophy of Language
- **Value Theory:** PHIL 306 Ethics, PHIL 307 Social & Political Philosophy, PHIL 326 History of Ethics, PHIL 327 History of Social & Political Philosophy

Degree Requirements for M.A. and Ph.D. in Philosophy

For general university requirements, see Graduate Degrees (pages 62–67). Students have the additional option of applying for a doctoral program specializing in bioethics (see below).

For the M.A. in philosophy, candidates must:
- Complete with high standing at least 30 semester hours in advanced courses approved by the department
- Complete a written thesis on a subject approved by the department
- Perform satisfactorily on a final oral examination (not limited to the student’s special field of study)

For the Ph.D. in philosophy, candidates must:
- Complete with high standing 42 hours of course work approved by the department (including logic)
- Demonstrate competence in logic
- Pass a qualifying examination
- Perform satisfactorily on an oral defense of their thesis proposal
- Complete a written thesis on a subject approved by the department (at least one year of thesis research must be spent in residence)
- Perform satisfactorily on a final oral examination (not limited to the student’s special field of study)

Bioethics Program

The Ph.D. in philosophy with a specialization in medical ethics is offered in cooperation with the Center for Medical Ethics and Health Policy at Baylor College of Medicine. Applicants to this special program must have enough background in philosophy to complete two and a half years of strong general training in philosophy at the graduate level. After completing their general training, students receive instruction in clinical bioethics at Baylor College of Medicine and then write a dissertation drawing upon their philosophical and clinical training. Further information about this program is available from the Department of Philosophy.

Continental Philosophy Program

The Ph.D. program in Continental philosophy allows graduate students to take advantage of resource faculty in history, French studies, philosophy, and religious studies, all of whom have done distinguished philosophical work in the Continental tradition. Students master the basic fields of analytic philosophy while doing a substantial amount of their course work with resource faculty. Further information is available from the Department of Philosophy.

See PHIL in the Courses of Instruction section.
All physics majors must complete the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 101 or 111</td>
<td>Mechanics (with Lab)</td>
</tr>
<tr>
<td>PHYS 102 or 112</td>
<td>Electricity and Magnetism (with Lab)</td>
</tr>
<tr>
<td>PHYS 201</td>
<td>Waves and Optics</td>
</tr>
<tr>
<td>PHYS 202</td>
<td>Modern Physics</td>
</tr>
<tr>
<td>PHYS 231</td>
<td>Elementary Physics Laboratory II</td>
</tr>
<tr>
<td>MATH 101/102</td>
<td>Single Variable Calculus I and II</td>
</tr>
<tr>
<td>MATH 211</td>
<td>Ordinary Differential Equations and Linear Algebra</td>
</tr>
<tr>
<td>MATH 301</td>
<td>Intermediate Mechanics</td>
</tr>
<tr>
<td>MATH 381/382</td>
<td>Introduction to Partial Differential Equations and</td>
</tr>
<tr>
<td>CHEM 121/122</td>
<td>General Chemistry with Laboratory</td>
</tr>
<tr>
<td>CHEM 151/152</td>
<td>Honors Chemistry with Laboratory</td>
</tr>
</tbody>
</table>

All physics majors must complete the following courses:

- PHYS 101 or 111, Mechanics (with Lab)
- PHYS 102 or 112, Electricity and Magnetism (with Lab)
- PHYS 201, Waves and Optics
- PHYS 202, Modern Physics
- PHYS 231, Elementary Physics Laboratory II
- MATH 101/102, Single Variable Calculus I and II
- MATH 211, Ordinary Differential Equations and Linear Algebra
- MATH 212, Multivariable Calculus
- MATH 231, Introduction to Partial Differential Equations and Linear Algebra
- MATH 381/382, Introduction to Partial Differential Equations and Linear Algebra
- CHEM 121/122, General Chemistry with Laboratory
- CHEM 151/152, Honors Chemistry with Laboratory

Additional courses for the B.S. degree in physics with option in applied physics:

- PHYS 302, Intermediate Electrodynamics
- PHYS 311, Introduction to Quantum Physics I and II
- PHYS 331/332, Junior Physics Laboratory I and II
- PHYS 411, Introduction to Nuclear and Particle Physics
- PHYS 412, Solid-state Physics
- PHYS 425, Statistical and Thermal Physics
- PHYS 491/492, Undergraduate Research Seminar

Degrees Offered: B.A., B.S., M.Astron., M.Sp.Sc., M.S.T., M.S., Ph.D.
2 of PHYS 331/332 Junior Physics Laboratory I and II, ELEC 327 Digital Logic Design Laboratory, ELEC 342 Electronic Circuits, and ELEC 465 Physical Electronics Practicum

PHYS 412 Solid-state Physics or Approved substitute in applied physics

PHYS 425 Statistical and Thermal Physics

PHYS 491/492 Undergraduate Research Seminar (The Undergraduate Research course and seminar must be taken concurrently.)

MATH 381 Introduction to Partial Differential Equations and MATH 382 Complex Analysis or CAAM 335 Matrix Analysis and CAAM 336 Differential Equations in Science and Engineering

CAAM 210 or 211 Introduction to Engineering Computation

CAAM 353 Computational Numerical Analysis

CAAM 420/421 Computational Science I and II

CHEM 121/122 General Chemistry with Laboratory or CHEM 151/152 Honors Chemistry with Laboratory

Additional courses for the B.S. degree in physics with option in computational physics:

PHYS 302 Intermediate Electrodynamics

PHYS 311/312 Introduction to Quantum Physics I and II

PHYS 416 Computational Physics

PHYS 425 Statistical and Thermal Physics

PHYS 491/492 Undergraduate Research Seminar (The Undergraduate Research course and seminar must be taken concurrently.)

CAAM 336 Differential Equations in Science and Engineering

CHEM 121 General Chemistry with Laboratory

Additional courses for the B.A. degree in physics:

PHYS 302 Intermediate Electrodynamics

PHYS 311 Introduction to Quantum Physics I

PHYS 331 Junior Physics Laboratory I

PHYS 425 Statistical and Thermal Physics

1 additional PHYS or ASTR course (3 credit hours) at 400 level

NSCI 230 Computation in Natural Science or CAAM 210 or 211 Introduction to Engineering Computation or 1 MATH or CAAM course (3 credit hours) at or above 300 level

Additional courses for the B.S. degree in astrophysics:

PHYS 302 Intermediate Electrodynamics

PHYS 311 Introduction to Quantum Physics I

PHYS 425 Statistical and Thermal Physics

ASTR 230 Astronomy Laboratory

ASTR 350/360 Introduction to Astrophysics—Stars, Galaxies, and Cosmology

ASTR 470 Solar System Physics

1 of: ASTR 430 Teaching Astronomy Laboratory, ASTR 450 Experimental Space Science, or PHYS 443 Atmospheric Science

Additional courses for the B.S. degree in chemical physics:

CHEM 121/122 General Chemistry with Laboratory or CHEM 151/152 Honors Chemistry with Laboratory

CHEM 211 Organic Chemistry

CHEM 212 Organic Chemistry or CHEM 360 Inorganic Chemistry

CHEM 311/312 Physical Chemistry

PHYS 302 Intermediate Electrodynamics

2 of: PHYS 311 or 312 Introduction to Quantum Physics I or II, CHEM 415 Chemical Kinetics and Dynamics, and CHEM 430 Quantum Chemistry

6 credit hours from: CHEM 215 Organic Chemistry Laboratory, CHEM 351, or 352 Introductory Module in Experimental Chemistry, CHEM 373–391, CHEM 435 Advanced Module in Chemistry, and PHYS 331, or 332 Junior Physics Laboratory I or II; up to 2 hours of CHEM 491 Research for Undergraduates or PHYS 491/492 Undergraduate Research may be counted toward this requirement.

6 credit hours from: NSCI 230 Computation in Natural Science, CAAM 210, or 211 Introduction to Engineering Computation, and MATH, or CAAM courses at or above 300 level
Requirements for Advanced Degrees

For general university requirements, see Graduate Degrees (pages 62–67). More detailed information on courses and requirements is available from the Department of Physics and Astronomy.

The master of astronomy and master of space science require 30 credit hours of approved course work, including at least 9 credit hours of research participation. The master of science teaching requires 30 credit hours of approved course work, which may include up to 12 hours of research participation or practicum training.

The master of science is a research degree, normally undertaken as the first stage of doctoral study. The M.S. requires at least 30 credit hours of approved graduate-level studies, including a thesis performed under the direction of a departmental faculty member.

To be eligible for the Ph.D. degree, graduate students must demonstrate to the department their ability to engage in advanced research. This is normally accomplished by successfully completing the work for the M.S. Students must also complete 60 credit hours of approved graduate-level study at Rice and produce a research thesis under the direction of a departmental faculty member. At least two years of graduate study are required for the Ph.D.

See ASTR and PHYS in the Courses of Instruction section.
Policy Studies

The School of Social Sciences

Director
Donald Ostdiek

Degree Offered: B.A.

This interdisciplinary major focuses on policy issues that are of public interest. Students in policy studies evaluate and analyze both the determinants and the effects of policy decisions, gaining an understanding of the policy-making process and acquiring an intellectual base for policy-making skills. The course of study addresses theoretical issues as well as applied and prescriptive policy questions.

Students may take policy studies only as a second major. It complements majors in any university department. For instance, engineering or science majors who are contemplating careers in business or government can investigate how technical innovations or regulations are adopted and implemented as matters of public policy, and humanities majors can explore career options where language skills are particularly valuable.

Students are encouraged to investigate research opportunities with Rice faculty. Students may also elect to participate in the Washington Semester Program at American University, which includes both course work and an internship within the federal government. See the policy studies director for more information.

Degree Requirements for B.A. in Policy Studies

For general university requirements, see Graduation Requirements (pages 18–20). Students may take the policy studies major only as a second major (their first major cannot also be in an interdepartmental program). The major contains 11 courses divided into the following elements: a basic curriculum, an area curriculum, and a research requirement.

The policy studies basic curriculum introduces students to the basic concepts and tools needed to understand and study policy, regardless of the policy area they choose to focus on. The four courses ensure that all policy studies majors have a common professional vocabulary and conceptual frame of reference. The policy studies area curriculum provides specialized training that builds on students’ work in the basic curriculum.

Students are required to take 6 courses from one of the following areas of specialization:

• Environmental policy
• Government policy and management
• Healthcare management
• International affairs
• Law and justice
• Business policy and management
• Urban and social change

Policy studies students must also engage in a research project in their area of interest. In consultation with the policy studies director, each student must select a research seminar or complete an approved research project through independent study or other credit. The Policy Studies Research Seminar (SOSC 400) also counts for this requirement.
4 Basic Curriculum Courses
POLI 338/SOSC 301 Policy Analysis
ECON 211 or 212 Principles of Economics I or II
POLI 337 Public Policy and Bureaucracy or SOSC 300 Social Science and Public Policy or POLI 436 Politics of Regulation
1 advanced analysis or methods course approved by the policy studies director

6 Area Curriculum Courses
6 courses from one of the following seven groups:

Core Courses (Choose at least 3)
1. Environmental Policy
ECON 480 Environmental and Energy Economics I
POLI 331 Environmental Politics and Policy
SOCI 367 Environmental Sociology
ENVI 306 Global Environmental Law and Sustainable Development
ENVI 406 Introduction to Environmental Law
HIST 330 U.S. Environmental History

Electives (Choose up to 3)
ARCH 313 Sustainable Architecture
ANTH 468 Palaeoclimate and Human Response
BIOS 322 Global Ecosystem Dynamics
BIOS 324 Wetland Ecosystems
BIOS 325 Ecology
ENGL 376 Literature and the Environment
ENVI/HPHS 201 Introduction to Environmental Systems
ENVI 445 Natural Environmental Factors
GEOL 326 Environmental Geology
GEOL 341 The Oceans
GEOL 345 Geology of National Parks
POLI 336 Politics of Regulation
RELI 362 Environmental Ethics
SPAC 203 Atmosphere, Weather, and Climate
SPAC 443/ENVI 443 Atmospheric Science
UNIV 303 Environmental Problem Solving

2. Government Policy and Management
ECON 436 Government Regulation of Business
ECON 461 Urban Economics
ECON 483 Public Finance
POLI 300 Federalism and Intergovernmental Politics
POLI 301 State Politics
POLI 332/432 Urban Politics
POLI 436 Politics of Regulation
ANTH 344 City/Culture
ECON 438 Economics of the Law
ECON 480 Environmental and Energy Economics I
HIST 337 Gender and Politics in the West
POLI 330 Minority Politics
POLI 335 Political Environment of Business
POLI 458 Property Rights and Privatization
ENVI 406 Introduction to Environmental Law
HIST 468 Women and the Welfare State
SOSC 330 Healthcare Reform in the 50 States
SOSC 430 The Shaping of Health Policy in the United States
SOC 308 Houston: The Sociology of a City
SOC 331 Politics and Society in Texas
SOC 370 Sociology of Education
SOC 350 Sociological Approaches to Poverty
SOC 399 Immigration and Public Health
SOC 411 Social Change
SOC 441 Minorities in the Schooling Process

3. Healthcare Policy and Management
(Choose 6)
ANTH 381 Medical Anthropology
ANTH 386 Human Nutrition
ANTH 388 Life Cycle: A Biocultural View
HEAL 212 Consumer Health
HEAL 350 Understanding Cancer
HEAL 407 Epidemiology
HEAL 410 Program Development in Health Education
PHIL 315 Ethics, Medicine, and Public Policy
RELI 462/463 Medical Ethics and American Values I and II
SOSC 330 Healthcare Reform in the 50 States
SOSC 420 Healthcare: Competition and Managed Care
SOSC 430 The Shaping of Health Policy in the United States
SOC 334 Sociology of the Family
SOC 345 Sociology of Medicine
SOC 399 Immigration and Public Health
SOC 433 Sociology of the Life Cycle: Death and Dying
SPAN 307/308 The Language of Healthcare

Core Courses (Choose at least 2)
4. International Affairs
ECON 420 International Economics
POLI 372 American Foreign Policy
POLI 376 International Political Economy
POLI 378 The Politics of American National Security Policy
POLI 462 Comparative Public Policy

Electives (Choose up to 4)
ANTH 360 Modernity and Social Space
SOSC 420 International Finance
ECON 430 Comparative Economic Systems
ECON 451 Political Economy of Latin America
HIST 232 The Making of Modern Africa
HIST 353 The Cold War
HIST 394 War in the Modern World
HIST 464 Foreign Policy of Nixon and Kissinger
HIST 469 US–Latin America Relations
POLI 354 Latin American Politics
POLI 355 Government and Politics of the Middle East
POLI 356 Politics of Latin American Economic Development
POLI 360 West European Democracies
POLI 361 Comparative Post-Communist Systems
POLI 373 International Conflict
POLI 376 International Political Economy
POLI 464 Political Economy of Development

5. Law and Justice (Choose 6)
ANTH 326 Anthropology of Law
ANTH 419 Law and Society
ECON 438/439 Economics of the Law I and II
ENVI 406 Introduction to Environmental Law
HIST 297/298 American Legal History I and II
PHIL 307 Social and Political Philosophy
PHIL 316 Philosophy of Law
POLI 321 American Constitutional Law
POLI 458 Property Rights and Privatization
SOCI 321 Criminology

6. Business Policy and Management
Core Courses (Choose at least 3)
ECON 436 Government Regulation of Business
ECON 445 Managerial Economics
ECON 435 Industrial Organization
POLI 336 Politics of Regulation
PSYC 231 Industrial and Organizational Psychology

Electives (Choose up to 3)
ACCO 305 Introduction to Accounting
ECON 355 Money and Banking
ECON 370 Microeconomic Theory
ECON 375 Macroeconomic Theory
ECON 415 Human Resources, Wages, and Welfare
ECON 420 International Economics
ECON 421 International Finance
ECON 448 Corporation Finance
HIST 331 Labor in America
POLI 376 International Political Economy
POLI 458 Property Rights and Privatization
POLI 464 Political Economy of Development
### 7. Urban and Social Change

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Political Science

The School of Social Sciences

Chair
T. Clifton Morgan

Professors
John S. Ambler
Earl Black
Paul Brace
Gilbert Morris Cuthbertson
Chandler Davidson
Keith Edward Hamm
William P. Hobby
Robert M. Stein
Richard J. Stoll
Rick K. Wilson

Professor Emeritus
Fred R. von der Mehden

Associate Professors
John R. Alford
Randolph T. Stevenson

Assistant Professors
Regina P. Branton
Debra Javeline
Brett Ashley Leeds
William Reed

Lecturer
C. M. Hudspeth

Degrees Offered: B.A., M.A., Ph.D.

Students majoring in political science are encouraged to achieve both a broad understanding of the field and a specialized knowledge of one or more aspects of political science, including American and comparative politics, international relations (see also majors in managerial studies and public policy). Graduate study is grounded in the areas of American government (public policy, Congress, and intergovernmental relations), comparative government (Western Europe, Latin America, and political development), and international relations (international conflict).

Degree Requirements for B.A. in Political Science

For general university requirements, see Graduation Requirements (pages 18–20). Students majoring in political science must complete 30 semester hours (10 courses) in the field of political science, plus 6 hours (2 courses) of upper-level work in any of the following fields: anthropology, economics, history, philosophy, psychology, or sociology. Students select these upper-level courses in consultation with the department adviser.

For students who entered Rice in fall 1999 and thereafter, political science degree requirements are as follows:

- At least 1 course in each of the following fields: American government, comparative politics, international relations, theory and methods.
- At least 2 of the 4 introductory courses
- A concentration of at least 4 courses in one of the following fields: American government, comparative politics, international relations. These 4 courses must include the introductory course and a seminar.
- A statistics course offered by the Department of Political Science
- 2 seminars, at the 400 or 500 level, with different instructors
Students who entered Rice before fall 1999 may choose to satisfy the above requirements, or they may satisfy requirements in force at the time of their enrollment at Rice, which usually will be as follows:

- At least 1 course in any four of the following areas: American political institutions and behavior, comparative politics, international relations, political philosophy and legal theory, empirical theory and method, and American public policy
- 2 seminars, at the 400 or 500 level, with different instructors

Double majors in one of the related disciplines named above may automatically substitute 6 hours (2 courses) in upper-level studies (at the 300 level or above) from their second field for 6 of the required 30 hours of political science courses. Double majors whose second major is managerial studies or policy studies may automatically substitute 3 hours (1 course). Double majors whose second major is in a field other than those listed above normally must take the full 30 hours (10 courses) in political science. They may petition to substitute a course from another field for a political science course, but this is permitted only when the course to be substituted has a significant relationship to political science. Note: The reduction of political science course requirements for double majors is eliminated for students who entered in and after fall 1999.

Introductory Courses. POLI 209 Introduction to Constitutionalism and Modern Political Thought, POLI 210 American Government and Politics, POLI 211 International Relations, and POLI 212 Introduction to Comparative Politics constitute the introductory courses in political science. Students entering in the Fall of 1999 and after must take at least 2 of these, including the 1 in the field of specialization. Students entering before fall 1999 may count no more than 2 of the introductory courses toward their major requirements.

Directed Readings Courses. Directed readings courses are intended for students who have completed a substantial number of political science courses and who seek to explore a subject not covered in regular courses. They are available only if an appropriate faculty member agrees to supervise. The faculty member supervising a directed readings course must have a full-time appointment, and a student may not take more than 1 readings course from him or her. Students must submit a brief, one-page description of the work to be conducted in the readings course (including the name of the faculty supervisor) to the department director of undergraduate studies no later than two weeks into the semester in which they intend to take the course. Readings courses do not count toward the department’s distribution requirement.

Honors Program. Admission to the honors program requires the approval of the department director of undergraduate studies. During the first semester of the two-semester program, students take a readings course that provides them with a basis for drawing up a thesis prospectus. At the end of the first semester, a thesis committee composed of two full-time members of the political science department reviews and approves the prospectus. During the second semester, students write their honors thesis, which also must meet with committee approval. Students may not combine the 2 honors courses into one semester. Those who successfully complete the honors program may substitute it for one of the seminars required for the major. See also Honors Programs (page 32).
**Psychology**

**The School of Social Sciences**

*Chair*
Randi C. Martin

**Professors**
- Tony Ro
- Brent Smith

**Adjunct Professors**
- John H. Byrne
- J. Maxwell Eiden
- William C. Howell
- Katherine A. Loveland
- John E. Overall
- Anthony A. Wright

**Adjunct Associate Professors**
- Jocelyne Bachevalier
- Lindley E. Doran
- Deborah A. Pearson
- Kevin C. Wooten

**Adjunct Assistant Professors**
- Janice Bordeaux
- Betty S. Sanders
- Anne Bibiana Sereno
- Heidi Ziemen

**Adjunct Instructors**
- Roberta M. Diddel
- Mark H. McManis
- Mihriban Whitmore
- Anne Victoria Wilkinson

*Degrees Offered:* B.A., M.A., Ph.D.

The undergraduate program offers the core preparation recommended by the nation’s leading graduate schools of psychology, with advanced courses and research opportunities to fit individual needs. Programs of study may be structured around prospective careers in medicine, law, business, and education. Program emphasis in graduate study is on doctoral training, which requires course work in memory, cognition, engineering and industrial/organizational psychology, social psychology, and methodology. Faculty research interests include cognitive psychology (human memory, psycholinguistics, and information processing), cognitive neuropsychology (memory and language disorders), human factors (safety and reliability, risks and warnings, and human-computer interaction), and industrial/organizational psychology (personnel selection, training, work motivation, and group processes).

**Degree Requirements for B.A. in Psychology**

For general university requirements, see Graduation Requirements (pages 18–20). Students majoring in psychology must complete 29 semester hours in departmental courses, including the following required courses.

**Core Courses**
- PSYC 101 *Introduction to Psychology*
- PSYC 202 *Introduction to Social Psychology*
- PSYC 203 *Introduction to Cognitive Psychology*
- PSYC 339 *Statistical Methods—Psychology* (no substitutions or transfer credits allowed for PSYC 339 or 340)
- At least 1 course from each block

**Block 1**
- PSYC 308 *Memory*
- PSYC 309 *Psychology of Language*
- PSYC 350 *Psychology of Learning*
- PSYC 351 *Psychology of Perception*
- PSYC 360 *Thinking*
- PSYC 362 *Biopsychology*

**Block 2**
- PSYC 329 *Psychological Testing*
- PSYC 330 *Personality Theory*
- PSYC 331 *The Psychology of Gender*
- PSYC 332 *Abnormal Behavior*
- PSYC 460 *The Psychology of Motivation*

**Honors Program.** Qualified students may apply to the honors program during preregistration in the spring semester of their junior year. A written proposal for the project must be submitted by the end of the second week of classes in fall of the senior year, and the faculty will decide on final admission to the honors program by the end of the fourth week of classes. Admission to the honors program requires a psychology GPA of 3.5 and an overall GPA of 3.3, completion of PSYC 339, and completion or concurrent enrollment in PSYC 340. To graduate with departmental honors, students must complete the requirements for the psychology major, a written honors thesis approved by a faculty committee, and other requirements as determined by their honors committee (see Honors Program, page 32). Detailed information about the honors program is available from the instructor of the course or the departmental office.

**Degree Requirements for M.A. and Ph.D. in Psychology**

For general university requirements, see Graduate Degrees (pages 62–67). For both M.A. and Ph.D. degrees, students must complete a research thesis, including its public oral defense, and accumulate 60 semester hours for the Ph.D. and 30 hours for the M.A. Course work includes required courses in certain areas, plus whatever offerings are available in the student’s specialty area, either cognitive/experimental, industrial/organizational/social, or engineering psychology. While competence in a foreign language is not required, students must complete an admission-to-candidacy procedure that should establish their expertise in their chosen specialty.

See PSYC in the Courses of Instruction section.
Religious Studies

The School of Humanities

Chair
William B. Parsons

Professors
Werner H. Kelber
Anne C. Klein
John M. Stroup
Edith Wyschogrod

Associate Professors
Elias K. Bongmba
Jeffrey J. Kripal

Assistant Professors
David Cook
Matthew Henze
Gregory Kaplan

Adjunct Professor
Stanley J. Reiser

Adjunct Associate Professor
Elizabeth Heitman

Adjunct Assistant Professor
Hugh W. Sanborn

Degrees Offered: B.A., M.A., Ph.D.

The undergraduate major includes courses in methodology (textual, historical, normative, and sociocultural approaches to the study of religion) and religious traditions (African religions, Buddhism, Christianity, comparative religions, Hinduism, Islam, and Judaism). The graduate program offers research degrees in 10 fields (see below). Within these clearly defined fields, students acquire a broad knowledge of religious studies with enough flexibility for interdisciplinary pursuits.

Degree Requirements for B.A. in Religious Studies

For general university requirements, see Graduation Requirements (pages 18–20). Students majoring or double-majoring in religious studies must complete:

• 30 semester hours (10 courses), or 24 semester hours (8 courses) for double majors
• 24 hours (8 courses) at 200, 300 or 400 level, or 18 hours (6 courses) for double majors

All majors must take:
• RELI 101 Introduction to Religion in the first or second year
• 2 introductory courses in religious traditions (1 Western, 1 non-Western)

In addition, students must also satisfy the distribution requirements and complete no fewer than 60 semester hours outside the departmental requirements for a program totaling at least 120 semester hours. See Distribution Requirements (pages 19–20) and Majors (pages 21–22).

Degree Requirements for M.A. and Ph.D. in Religious Studies

The graduate program accepts a limited number of qualified students. A distinguished undergraduate record and high scores on the Graduate Record Examination (GRE) are essential and, for Ph.D. applicants, an advanced degree in the humanities is desirable. For general university requirements, see Graduate Degrees (pages 62–67).

Students admitted into the program will normally receive financial assistance in the form of a tuition waiver and a stipend. As part of their training and in return for their stipends, students in their second year and beyond are expected to serve as research assistants or teaching assistants. Students receiving stipends may also be asked on occasion to assist the department in other ways.

The M.A. in religious studies is normally a two-year program. Requirements are as follows:

• A total of 12 courses, including
  • 8 courses in 4 fields of religious studies (see list of fields below)
  • 2 department seminars
  • 2 independent research courses for preparation of comprehensive papers or thesis
• A passing grade on a reading examination in a foreign language (either a language of scripture or commentary in a tradition or a language of scholarship)
• Satisfactory completion of 2 comprehensive papers (demonstrating a grasp of a subdiscipline or topic that goes well beyond what is expected of a term paper) or a thesis

The Ph.D. in religious studies is normally a five-year program. Requirements are as follows:

• 18 Courses (54 hours required):
  • 6 courses in the major field
  • 3 courses in each of two minor fields (see list of fields below)
  • 2 department seminars (one or more of which may count as a major or minor course) to be taken in each of the first two years
  • 4 to 6 elective courses chosen in consultation with the student’s adviser
• 2 independent research courses for preparation of comprehensive papers or thesis
• Passing grades on reading examinations in 1 foreign languages, at least 1 of which must be a language of scholarship in the student’s chosen field
• Passing grades in 5 qualifying examinations: 3 in the student’s major field, 1 in each of the students 2 minor fields. (In place of examinations, the relevant faculty member may, in consultation with the student, substitute papers that demonstrate a thorough grasp of the field.) The nature and content of the examinations or papers will be determined one year prior to the date the student expects to write them, which is ordinarily the end of the third or beginning of the fourth year in the program.
• Oral discussion of dissertation proposal
• Satisfactory completion of dissertation and oral defense

Reading Lists. Students should become broadly familiar with the literature of their majors and minors; reading lists will be provided. Students are expected to familiarize themselves with this material such that they draw on it on their exams and the dissertation itself. The graduate seminar is, in part, an introduction to areas of the reading list and to the techniques for engaging in deep, independent reading.

Fields of Study. Religion and contemporary cultures, scriptural interpretation, ethics and philosophy of religion, mysticism, psychology, and religious practices are fields of study in this program. These fields will include courses covering one or more of the following traditions: African and African-based religions, Buddhism, Christianity, Hinduism, Judaism, and new and alternative religions. Ph.D. students may concentrate in one or more of these traditions in the context of their major and minor fields.
Professional Development

Opportunities may be available for Ph.D. candidates to teach undergraduate courses in the department. Opportunities to teach courses in local colleges and universities may also arise. Limited funds are also available for Ph.D. students to attend conferences to present their research. The department encourages these and other efforts to prepare students for academic careers.

See RELI in the Courses of Instruction section.
Sociology

The School of Social Sciences

Chair
Chandler Davidson

Professors
Stephen L. Klineberg
William Martin

Associate Professors
Katharine Donato
Michael Emerson
Elizabeth Long

Assistant Professor
Bridget K. Gorman

Lecturer
Florian Kreutzer

Degree Offered: B.A.

This undergraduate major fosters an analytic approach to the study of human societies, whether as a preparation for graduate work in sociology and related fields, or as the foundation for a variety of occupations. It is also an important component of a liberal arts education and as such, can serve as effective preparation for professions such as law or medicine. The program provides students with considerable latitude in pursuing personal interests while ensuring familiarity with basic theoretical approaches and research methods.

Degree Requirements for the B.A. in Sociology

For general university requirements, see Graduation Requirements (pages 18–20). Students majoring in sociology must complete at least 33 semester hours (11 courses) in sociology. Requirements for the major normally include the following.

SOCI 203 Introduction to Sociology
SOCI 398 Social Statistics

1 of the following courses:
SOCI 390 Research Methods
SOCI 421 Craft of Sociology

At least 1 theory course, such as:
SOCI 317 Contemporary Sociological Theory
SOCI 359 Individual and Society
SOCI 395 Feminist Social Thought

Any other sociology courses (for a total of 11 in all). See course listings and check for availability.

Sociology majors do not need to take a foreign language, but those planning graduate study should be competent in at least one such language. Some sociology courses listed in the Courses of Instruction section may not be offered every year, and courses among the regular offerings are occasionally added or dropped. Students are responsible for making sure they satisfy all the requirements for their degree. One of the sociology faculty, preferably department adviser Professor Long, should sign each major’s registration.
Honors Program. For general information, see Honors Programs (page 32). Students who have maintained an A- average in at least 4 sociology courses beyond the introductory level may apply to enter the honors program. They should submit their research proposals either a) by November 15 of the first semester of their junior year, in which case they will research and write their thesis during the second semester of their junior year and the first semester of their senior year; or b) by March 15 of the second semester of their junior year, in which case they will complete their thesis during the two semesters of their senior year. (Since departmental awards for seniors are usually determined around March 1, and the honors thesis is often taken into consideration in this determination, students who wish to be considered for these awards are advised to begin their thesis in the spring of their junior year.) Research proposals must be carefully thought out and discussed with at least one professor before being submitted. Once submitted, they will be considered by the department faculty as a whole and, if acceptable, the student will be assigned a faculty adviser.

Students in the honors program register for two successive semesters in Directed Honors Research (SOCI 492, 493). The first of the 2 courses is typically devoted to a thorough review of the relevant literature, the formulation of hypotheses growing out of the literature review, and a proposal consisting of a research design that clearly describes how the data are to be collected and analyzed. To receive a grade for the first semester, the student must submit to the primary thesis adviser by the last day of classes a paper containing the literature review, hypotheses, and research design, along with a bibliography. The research itself is usually carried out in the second semester (and sometimes in the summer following the junior year) and is analyzed, written up, and defended as a completed Honors Thesis during that semester.

All honors students should complete SOCI 390 Research Methods or SOCI 421 The Craft of Sociology before beginning the second semester of the program. If their project requires statistical analysis, students should also complete SOCI 398 Social Statistics before beginning the second semester of their research.

See SOCI in the Courses of Instruction section.
Statistics

The George R. Brown School of Engineering

Chair
Katherine B. Ensor

Professors
Bryan W. Brown (joint appointment: Economics)
Dennis Cox
Mahmoud El-Gamal (joint appointment: Economics)
Don H. Johnson (joint appointment: Electrical and Computer Engineering)
Marek Kimmel
Javier Rojo
David W. Scott
Robin Sickles (joint appointment: Economics)
James R. Thompson
Edward E. Williams (joint appointment: Jones Graduate School of Management)
Rick K. Wilson (joint appointment: Political Science)

Assistant Professor
Barbara Ostdiek (joint appointment: Jones Graduate School of Management)

Assistant Professor
Quintus Jett (joint appointment: Jones Graduate School of Management)

Adjunct Professors
E. Neely Atkinson
Donald A. Berry
Barry W. Brown
Thomas D. Downs
Ralph F. Frankowski
Richard Heydorn
Dennis A. Johnston
Gary Rosner
Howard D. Thames, Jr.
Robert A. White
Stuart Zimmerman

Adjunct Associate Professors
Joaquin Diaz-Saiz
Kim-Anh Do
Carl S. Hacker
Kenneth Hess

Lecturers
L. Scott Baggett
Peter Olofsson

Degrees Offered: B.A., M.Stat., M.A., Ph.D.

Course work in statistics acquaints students with the role played in the modern world by probabilistic and statistical ideas and methods. Students grow familiar with both the theory and the applications of techniques in common use as they are trained in statistical research. The flexibility of the undergraduate program allows students to concentrate on theoretical or applied training, or they may link their studies in statistics to work in other related departments (see majors in economics, education, electrical and computer engineering, computational and applied mathematics, managerial studies, mathematics, political science, and psychology). Graduate study has concentrations in applied probability, bioinformatics, biomathematics, biostatistics, computational fi-
nance, data analysis, density estimation, epidemiology, image processing, model building, quality control, statistical computing, spatial processes, stochastic processes, and time series analysis. A joint M.B.A./master of engineering degree is also available in conjunction with the Jesse H. Jones Graduate School of Management.

Degree Requirements for B.A. in Statistics

For general university requirements, see Graduation Requirements (pages 18–20). Students majoring in statistics normally complete the following:

- MATH 101/102 Single Variable Calculus I and II
- MATH 211 Ordinary Differential Equations and Linear Algebra
- CAAM 210 or 211 Introduction to Engineering Computation
- STAT 300 Model Building
- STAT 310 Probability and Statistics
- STAT 410 Introduction to Statistical Computing and Regression
- 5 elective courses from the statistics department (or other departments with approval from their adviser) at the 300 level or higher

Mathematically oriented students should also take MATH 212 Multivariable Calculus and MATH 355 Linear Algebra (or CAAM 335 Matrix Analysis).

Degree Requirements for M.Stat., M.A., and Ph.D. in Statistics

For general university requirements, see Graduate Degrees (pages 62–67). Admissions applications should include scores on the Graduate Record Examination (GRE) in the quantitative, verbal, and analytical tests. Financial support is available for well-qualified doctoral students. Course work for all degree programs should be at the 400 level or above, although 2 approved 300-level courses may be accepted.

Master’s Programs. Candidates for the nonthesis M.Stat. degree must complete 30 semester hours of approved course work. Candidates for the M.A. degree in statistics must complete 30 semester hours of approved course work as well as one of the following: (1) complete an original thesis and defend it in a public oral examination; or (2) perform satisfactorily on the second-year Ph.D. comprehensive examinations.

Ph.D. Program. Candidates for the Ph.D. degree in statistics must:
- Complete at least 90 semester hours of approved course work beyond the bachelor’s degree and a minimum of 60 hours beyond a master’s degree
- Perform satisfactorily on preliminary and qualifying examinations
- Complete an original thesis with a public oral defense

See STAT in the Courses of Instruction section.
University Courses

University courses provide opportunities for dialogue across disciplinary and departmental boundaries. They are an experiment in curriculum development, directed toward students interested in interdisciplinary subjects beyond their elected major.

See UNIV in the Courses of Instruction section.
The Program for the Study of Women and Gender

Director and Adviser
Helena Michie

Professors
Jane Chance
Marcia J. Citron
Margret Eisler
James D. Faubion
Lynne Huffer
Anne C. Klein
Susan Keech McIntosh
Helena Michie
Deborah Nelson-Campbell
Meredith Skura
Ewa M. Thompson
Susan Wood

Associate Professors
José F. Aranda, Jr.
Peter C. Caldwell
Scott S. Derrick
Katharine M. Donato
Lucille P. Fultz
Eugenia Georges
Deborah A. Harter
Betty Jospeh

Assistant Professors
Colleen R. Lamos
Caroline F. Levander
Elizabeth Long
Susan Lurie
Honey Meconi
Nanxiu Qian
Carol E. Quilen
Paula Sanders
Julie M. Taylor

Lecturer
Thad Logan

Degrees Offered: B.A.

This undergraduate major takes an interdisciplinary approach in its exploration of women’s experiences and the role that ideas about sexual differences have played in human societies. Areas of inquiry include women’s participation in social and cultural production; the construction of gender roles and sexuality; the relationship between ideas about gender and concepts inherent in other social, political, and legal structures; and the implications of feminist theory for philosophical and epistemological traditions. Students acquire an understanding of how adopting gender as a significant category of analysis challenges existing disciplines. They also gain proficiency in the methods used to study and compare cultural constructions of gender and sexuality, and they become familiar with the ongoing fundamental debates in women’s and gender studies.

Degree Requirements for B.A. in the Study of Women and Gender

For general university requirements, see Graduation Requirements (pages 18–20). Students majoring in the study of women and gender must complete:

- 36 semester hours of departmental course work (30 hours if this is a second major)
- WGST 101 Introduction to the Study of Women and Gender OR WGST 201 Introduction to Lesbian, Gay, Bisexual, and Transgender Studies
- WGST 499 and WGST 500 (capstone courses in fall and spring respectively)
- At least 1 approved non-Western studies course
- At least 1 approved critical race studies course
- At least 1 approved theory course

Of the remaining required courses, no more than 4 courses may be from a single department. All students must work out their individual courses of study with their faculty advisers. Each student’s course of study must be approved by the director of the major. Major tracking forms are available in the SWG office for declared SWG majors.

The following courses are among those that can be used to fulfill requirements for the major. As course offerings may vary from year to year, students are urged to consult with their faculty advisers or with the director at the beginning of each semester.

Please note that not all courses listed below will be offered during the academic year. For a current list of courses that will be offered in fall 2002 and spring 2003, please visit the SWG website at http://www.ruf.rice.edu/~swg.

I. Courses that satisfy the Core Requirements

WGST 101 Introduction to the Study of Women and Gender
WGST 201 Introduction to Lesbian, Gay, Bisexual, and Transgender Studies
WGST 499 Capstone : Research in the Study of Women and Gender (fall)
WGST 500 Capstone : Research in the Study of Women and Gender (spring)

II. Courses that satisfy the Non-Western Studies Requirement

WGST 210 Islam and Politics
WGST 240 Gender and Politicized Religion
WGST 250 International Political Economy of Gender
WGST 283 Women in the Islamic World
WGST 299 Women in Chinese Literature
WGST 323 The Knowing Body: Buddhism, Gender, and the Social World
WGST 328 Latin American Genders
WGST 340 Gender and Politicized Religion (enriched version)
WGST 352 Feminism and Nationalism
WGST 357 Buddhism and the Female
WGST 362 Women and Visual Culture in Islamic Societies
WGST 399 Women in Chinese Literature (enriched version)
WGST 432 Islam in South Asia
WGST 455 Women and Gender in Islamic Societies

III. Courses that satisfy the Critical Race Studies Requirement

WGST 234 History of American Women I: Colonial Beginnings to Civil War
WGST 235 History of American Women II: Civil War to Present
WGST 354 Survey: Chicano/a Poetry
WGST 387 Mexican and Mexican American Literature: 1848–1950
WGST 453 Topics in African American Literature

IV. Courses that satisfy the Theory Requirement

WGST 339 Feminist Philosophy
WGST 391 Producing Feminist Knowledge: Methodology and Visual Culture
WGST 407 Introduction to Feminist Literary Theory and Criticism
WGST 430 Studies in Literary Theory: Queer Theory
WGST 434 French Feminist Theory
WGST 456 Developments in Feminist Theory
WGST 460 Feminist Social Thought
WGST 480 Feminist Literary Theory: Feminist Film Theory
WGST 481 Literary Theory: What’s Left of Literary Theory?
### ACCO (Accounting)

The Jesse H. Jones Graduate School of Management

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<td>ACCO 406</td>
<td>Management Accounting</td>
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### AMC (Ancient Mediterranean Civilizations)

The School of Humanities

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For more information on courses that may be taken for AMC credit, refer to (pages 86–88).

### ANTH (Anthropology)

The School of Social Sciences

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<td>Human Antiquity: An Introduction to Physical Anthropology and Prehistory</td>
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<td>Biotechnology: 1900–Now</td>
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### ASIA (Asian Studies)

The School of Humanities / The School of Social Sciences

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### ASTR (Astronomy)

The Wiess School of Natural Sciences / Department of Physics and Astronomy

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### BIOE (Bioengineering)

The George R. Brown School of Engineering

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(\#) = credit hours per semester

**BIOS (Biosciences)**

The Weiss School of Natural Sciences / Department of Biochemistry and Cell Biology / Department of Ecology and Evolutionary Biology

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**CHEM (Chemistry)**

The Wiess School of Natural Sciences

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For complete descriptions of courses, visit [http://www.rice.edu/catalog/](http://www.rice.edu/catalog/)
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**CIVI (Civil Engineering)**

The George R. Brown School of Engineering / Department of Civil and Environmental Engineering

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**CLAS (Classical Studies)**

The School of Humanities / Department of Hispanic and Classical Studies

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### COMP (Computer Science)

The George R. Brown School of Engineering

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<td>Visual Methods for Science and Engineering</td>
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<td>Compiler Construction</td>
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<td>Distributed Program Construction</td>
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<td>Design and Analysis of Algorithms</td>
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<td>Denotational Semantics of Programming Languages</td>
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<td>Graduate Seminar: Advanced Language Implementation</td>
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<td>COMP 650</td>
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<td>COMP 661</td>
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<td>COMP 680</td>
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<td>COMP 690</td>
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<td>COMP 800</td>
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### CSCI (Cognitive Sciences)

The School of Social Sciences

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<td>CSCI 390</td>
<td>Supervised Research in Cognitive Sciences</td>
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<td>CSCI 410</td>
<td>Computational Modeling of Cognitive Processes</td>
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<td>CSCI 420</td>
<td>Brain and Behavior</td>
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### ECON (Economics)

The School of Social Sciences

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<td>ECON 211</td>
<td>Principles of Economics I</td>
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<td>ECON 212</td>
<td>Principles of Economics II</td>
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<tr>
<td>ECON 301</td>
<td>History of Economic Analysis</td>
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<tr>
<td>ECON 355</td>
<td>Financial Markets and Institutions</td>
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For complete descriptions of courses, visit [http://www.rice.edu/catalog/](http://www.rice.edu/catalog/)

((#) = credit hours per semester)
ECON 370  Microeconomic Theory (3)
ECON 375  Macroeconomic Theory (3)
ECON 382  Probability and Statistics (3)
ECON 400  Econometrics (3)
ECON 403  Senior Independent Research (3)
ECON 404  Senior Independent Research (3)
ECON 415  Labor Economics (3)
ECON 416  Economic History of the U.S.: 1700–1945 (3)
ECON 417  Comparative History of Industrialization (3)
ECON 420  International Trade (3)
ECON 421  International Finance (3)
ECON 430  Comparative Economic Systems (3)
ECON 435  Industrial Organization (3)
ECON 436  Regulation (3)
ECON 437  Economics of Information, Common Property Resources, and Public Goods (3)
ECON 438  Economics of Law I (3)
ECON 439  Economics of the Law II (3)
ECON 440  Risk, Uncertainty, and Information (3)
ECON 445  Managerial Economics (3)
ECON 446  Applied Econometrics and Economic Modeling (3)
ECON 448  Corporation Finance (3)
ECON 450  World Economics and Social Development (3)
ECON 451  The Political Economy of Latin America (3)
ECON 452  Principles of Islamic Economics and Finance (3)
ECON 455  Money and Financial Markets
ECON 461  Urban Economics (3)
ECON 472  Introduction to Game Theory (3)
ECON 475  Integer and Combinatorial Optimization (3)
ECON 477  Mathematical Structure of Economic Theory (3)
ECON 480  Environmental and Energy Economics (3)
ECON 481  Health Economics (3)
ECON 482  Distributive Justice: A Microeconomic Approach (3)
ECON 483  Public Finance: Tax Policy (3)
ECON 484  Public Expenditure Theory and Social Insurance (3)
ECON 485  Contemporary Economic Issues (3)
ECON 486  Contemporary Economic Issues (3)
ECON 495  Senior Seminar (3)
ECON 496  Senior Seminar (3)
ECON 501  Microeconomic Theory I (5)
ECON 502  Macroeconomic / Monetary Theory I (5)
ECON 504  Advanced Economic Statistics (5)
ECON 505  Macroeconomics / Monetary Theory II (5)
ECON 506  Topics in Macroeconomics / Monetary Theory (5)
ECON 507  Mathematical Economics I (5)
ECON 508  Microeconomic Theory II (5)
ECON 509  Microeconomic Theory III (5)
ECON 510  Econometrics I (5)
ECON 511  Econometrics II (5)
ECON 512  International Trade Theory (5)
ECON 514  Industrial Organizations and Control (5)
ECON 515  Labor Economics (5)
ECON 516  Economic History of the U.S. (5)
ECON 517  History of Economic Analysis
ECON 518  International Macroeconomics (5)
ECON 519  Economic Growth and Development (3)
ECON 521  Public Finance I (5)
ECON 522  Public Finance II (5)
ECON 523  Dynamic Optimization (5)
ECON 530  Comparative Economic Systems
ECON 536  Government Regulation of Industry
ECON 561  Urban Economics
ECON 565  Health Economics (5)
ECON 573  Nonlinear Programming
ECON 577  Topics in Economic Theory I (5)
ECON 578  Topics in Economic Theory II (5)
ECON 579  Topics in Econometrics (5)
ECON 592  Topics in Policy and Applied Economics (3)
ECON 593  Workshop in Microeconomics (5)
ECON 594  Workshop in Economics I (5)
ECON 595  Workshop in Economics II (5)
ECON 596  Workshop in Economics II (3)
ECON 597  Readings in Advanced Topics (5)
ECON 598  Readings in Advanced Topics (3)
ECON 800  Graduate Research

EDUC (Education / Education Certification)

The School of Humanities

EDUC 201  Contemporary Issues in Education (3)
EDUC 301  Philosophical, Historical, and Social Foundations of Education (3)
EDUC 305  Educational Psychology (3)
EDUC 310  Introduction to Special Education (3)
EDUC 330  The American High School (3)
EDUC 335  Urban Education: Issues, Policy, and Practice (3)
EDUC 340  Computers in Education (3)
EDUC 410  Theory and Methods: Art
EDUC 411  Theory and Methods: English
EDUC 412  Theory and Methods: Foreign Language
EDUC 413  Theory and Methods: Mathematics
EDUC 414  Theory and Methods: Physical Education
EDUC 415  Theory and Methods: Science
EDUC 416  Theory and Methods: Social Studies
EDUC 420  Curriculum Development (3)
EDUC 440  Supervised Teaching: Summer School (3)
EDUC 489  Adolescent Literature (3)
EDUC 491  Independent Study and Research (3)
EDUC 501  Philosophical, Historical, and Social Foundations of Education (3)
EDUC 505  Educational Psychology (3)
EDUC 530  The American High School (3)
EDUC 540  Internship (3)
EDUC 580  Contemporary Topics in Elementary School Mathematics (4)
EDUC 585  Contemporary Topics in Middle School Mathematics

For complete descriptions of courses, visit http://www.rice.edu/catalog/
EDUC 586  Contemporary Topics in Elementary and Middle School Science (Part I)
EDUC 587  Contemporary Topics in Elementary and Middle School Science (Part II)
EDUC 588  Teaching Earth and Space Science (3)
EDUC 589  Astronomy for Teachers (3)
EDUC 590  Contemporary Topics in Senior High School Mathematics (4)
EDUC 591  Independent Study and Research
EDUC 592  Seminar in Science Foundations (2)
EDUC 593  Practicum in Teaching Science (2)
EDUC 594  Practicum in Teaching Science (3)
EDUC 595  Topics in Contemporary Algebra for In-Service Teachers
EDUC 596  Field-Based Studies in Teaching and Learning

ELEC (Electrical and Computer Engineering)

The George R. Brown School of Engineering

ELEC 201  Introduction to Engineering Design (4)
ELEC 241  Fundamentals of Electrical Engineering I (4)
ELEC 242  Fundamentals of Electrical Engineering II (4)
ELEC 243  Introduction to Electronics (4)
ELEC 301  Introduction to Signals (3)
ELEC 302  Introduction to Systems (3)
ELEC 303  Systems Lab (2)
ELEC 305  Introduction to Physical Electronics (3)
ELEC 306  Electromagnetic Fields and Devices (3)
ELEC 320  Introduction to Computer Organization (4)
ELEC 322  Applied Algorithms and Data (4)
ELEC 326  Digital Logic Design (3)
ELEC 327  Digital Logic Design Lab (2)
ELEC 331  Applied Probability (3)
ELEC 342  Electronic Circuits (4)
ELEC 361  Electronic Materials and Quantum Devices (3)
ELEC 381  Fundamentals of Electrophysiology (3)
ELEC 383  Biomedical Engineering Instrumentation and Analysis (3)
ELEC 391  Seminar on Professional Issues in Electrical Engineering (1)
ELEC 420  Design and Analysis of Algorithms (3)
ELEC 421  Operating Systems and Concurrent Programs (4)
ELEC 422  VLSI Design I (4)
ELEC 423  VLSI Design II (2)
ELEC 424  High-Speed and Embedded Systems Design I (4)
ELEC 425  Computer Systems Architecture (4)
ELEC 426  Digital Systems Design (4)
ELEC 427  High Speed and Embedded Systems Design II (3)
ELEC 428  Computer Systems Performance (4)
ELEC 429  Introduction to Computer Networks (3)
ELEC 430  Communication Theory and Systems (3)
ELEC 432  Introduction to Time Series Analysis (3)
ELEC 433  Architectures for Wireless Communications (4)
ELEC 435  Electromechanical Devices and Systems (3)
ELEC 436  Feedback Control of Dynamic Systems (3)

ELEC 437  Multitier Wireless Networks
ELEC 439  Digital Image Processing (3)
ELEC 440  Artificial Intelligence (4)
ELEC 442  Advanced Electronic Circuits (4)
ELEC 443  Power Electronic Circuits (4)
ELEC 444  Electromagnetic Interference / Compatibility (4)
ELEC 445  Wireless Electronics (4)
ELEC 462  Semiconductor Devices (4)
ELEC 463  Lasers and Photonics (3)
ELEC 465  Physical Electronics Practicum (3)
ELEC 481  Computational Neuroscience (3)
ELEC 482  Physiological Control Systems (4)
ELEC 483  Introduction of Biomedical Instrument Measurement Techniques (4)
ELEC 485  Fundamentals of Medical Imaging I (3)
ELEC 486  Fundamentals of Medical Imaging II (3)
ELEC 490  Electrical Engineering Projects
ELEC 491  Senior Design Projects (3)
ELEC 492  Senior Design Projects (4)
ELEC 495  Senior Seminars in Electrical Engineering (1)
ELEC 501  Approximation of Dynamical Systems (3)
ELEC 502  Neural Networks and Information Theory I (3)
ELEC 507  Nonlinear Dynamic Systems Analysis (3)
ELEC 508  Nonlinear Systems Analysis II (3)
ELEC 519  Parallel Algorithms and Architecture (3)
ELEC 520  Distributed Systems (4)
ELEC 522  Advanced VLSI Design (3)
ELEC 524  Mobile and Wireless Networking (3)
ELEC 525  Advanced Microprocessor Architecture (4)
ELEC 526  High-Performance Computer Architecture (4)
ELEC 527  Advanced High-Speed and Embedded Systems Design
ELEC 529  Computer Networks Architecture and Protocol (3)
ELEC 530  Detection Theory (3)
ELEC 531  Statistical Signal Processing (3)
ELEC 532  Wavelet and Spectral Analysis (3)
ELEC 533  Introduction to Random Processes and Applications (3)
ELEC 534  Wireless Communications (3)
ELEC 535  Information and Coding Theory (3)
ELEC 536  Selected Topics in Control Theory (3)
ELEC 537  Design and Control of Computer Networks (3)
ELEC 538  Advanced Topics in Computer Networking (3)
ELEC 539  Digital Image Processing (3)
ELEC 540  Source Coding and Compression (3)
ELEC 541  Error Correcting Codes (3)
ELEC 560  Linear / Nonlinear Fiber Optics (3)
ELEC 561  Topics in Semiconductor Manufacturing (3)
ELEC 563  Introduction to Solid State Physics I (3)
ELEC 564  Introduction to Solid-State Physics II (3)
ELEC 565  Topics in Semiconductor Nanostructures (3)
ELEC 566  Physical Electronics Projects (1)
ELEC 568  Laser Spectroscopy (3)
ELEC 569  Ultrafast Optical Phenomena (3)
ELEC 580  Advanced Neuronal Modeling and Networks (3)
ELEC 581  Cardiovascular Dynamics (3)
### ENGL (English)

#### The School of Humanities

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<td>ENGL 101</td>
<td>Freshman English Seminar (3)</td>
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<td>ENGL 102</td>
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<td>ENGL 103</td>
<td>Introduction to Argumentation and Academic Writing (3)</td>
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<td>ENGL 121</td>
<td>Advanced Placement Credit in English (3)</td>
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<td>ENGL 122</td>
<td>Advanced Placement Credit in English: Critical Reading in Literature (3)</td>
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<td>Introduction to Creative Writing: Fiction (3)</td>
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<td>ENGL 209</td>
<td>Greek and Roman Drama (3)</td>
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<td>ENGL 210</td>
<td>Major British Writers: Chaucer–1800 (3)</td>
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<td>ENGL 211</td>
<td>Major British Writers: 1800–Present (3)</td>
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<td>ENGL 215</td>
<td>Words in English: Structure, History, Use (3)</td>
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<td>ENGL 250</td>
<td>Introduction to the Victorians (3)</td>
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<td>ENGL 260</td>
<td>Introduction to the Study of American Literature (3)</td>
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<td>ENGL 266</td>
<td>Ethnic Literatures of 20th-Century America (3)</td>
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<td>ENGL 267</td>
<td>Introduction to African-American Literature (3)</td>
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<td>ENGL 270</td>
<td>Aspects of Modern Literature (3)</td>
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### ENGI (Engineering)

#### The George R. Brown School of Engineering

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<td>ENGI 202</td>
<td>Telecommunication: Technology, Business, and Legal Aspects (3)</td>
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<tr>
<td>ENGI 303</td>
<td>Engineering Economics and Management (3)</td>
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<td>ENGI 304</td>
<td>Good Vibrations: An Interdisciplinary Approach to Sound (3)</td>
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For complete descriptions of courses, visit [http://www.rice.edu/catalog/](http://www.rice.edu/catalog/)
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<td>American Fiction: 1940–Present</td>
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<td>ENGL 364</td>
<td>American Poetry: 1900–1960</td>
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<td>American Poetry: 1960–Present</td>
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<td>Topics in American Literature <em>(Topics vary from year to year)</em></td>
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<td>ENGL 367</td>
<td>American Ecofeminism</td>
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<td>Folksong and Folklore</td>
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<td>Survey of Contemporary Chicano/a Literature from Villarreal’s <em>Pocho</em> (1959)</td>
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<td>Survey of Chicano/a Poetry</td>
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<td>ENGL 374</td>
<td>Survey of the Chicano/A Novel</td>
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<td>Literature and Film: Shakespeare</td>
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<td>Literature and the Environment: Ecofiction</td>
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<td>Introduction to Third-World Literature</td>
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<td>ENGL 380</td>
<td>20th-Century Women Writers <em>(Topics vary from year to year)</em></td>
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<td>Feminism and Nationalism</td>
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<td>Feminist Literary Theory: Feminist Film Theory</td>
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<td>Feminist Issues: Witches, Saints, Soldiers, and Shrews—Women’s Voices in the Renaissance</td>
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<td>The Female Body in Contemporary Culture</td>
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<td>Chichano/a Poetry</td>
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<td>Cultural Studies:</td>
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<td>Generation X in Literature and Culture</td>
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COURSES OF INSTRUCTION

ENGL 520  Seminar: Shakespeare and Difference (3)
ENGL 521  Shakespeare (3)
ENGL 522  Shakespeare and Theory (3)
ENGL 523  Elizabethan and Jacobean Drama: Early Modern (mostly non-Shakespearian) Drama (3)
ENGL 526  17th-Century Poetry and Prose: 3)
ENGL 528  Milton (3)
ENGL 531  Restoration Literature (3)
ENGL 532  18th-Century British Literature: Enlightenment Institutions (3)
ENGL 533  18th-Century Poetry and Satire (3)
ENGL 534  18th Century Novel: Origins and Displacements
ENGL 537  19th-Century British Fiction
ENGL 539  British Romantics: Wordsworth and Keats (3)
ENGL 541  Victorian Literature (3)
ENGL 542  Victorian Fiction: on Or About 1860 (3)
ENGL 543  Victorian Poetry and Prose (3)
ENGL 546  20th-Century British Fiction: Woolf and Joyce (3)
ENGL 547  20th-Century British Poetry (3)
ENGL 549  European Modern Drama (3)
ENGL 558  Child Slaves and the Sentimental Novel (3)
ENGL 559  Agency, Class, and Anxiety in 19th-Century Literature and Criticism (3)
ENGL 560  19th-Century American Literature and Gender (3)
ENGL 561  James and His Critics (3)
ENGL 562  Modern American Fiction (3)
ENGL 563  Contemporary Literature: Late 20th-Century American Literature and Culture (3)
ENGL 564  Seminar: Faulkner and Contemporary Theory (3)
ENGL 565  20th-Century American Poetry (3)
ENGL 566  20th-Century American Literature and Cultural Studies (3)
ENGL 570  African American Studies (Topics vary from year to year) (3)
ENGL 572  Chicano/A Studies: (3)
ENGL 575  Film and Theory (3)
ENGL 578  Literature and the Environment: Ecocriticism (3)
ENGL 580  Seminar: Women’s Studies (3)
ENGL 581  Cultural Studies: Feminism and Nationalism (3)
ENGL 582  Feminist Literary Theory (3)
ENGL 583  Feminist Issues (3)
ENGL 587  Cultural Studies: Feminism (3)
ENGL 591  Studies in Literature and Other Disciplines (3)
ENGL 592  Studies in Literary Types (3)
ENGL 593  Studies in Modern Literature: Joyce and Modernism (3)
ENGL 594  Area Studies: Globalization and Its Discontents (3)
ENGL 595  Studies in Major American Authors (3)
ENGL 596  Studies in Major British Authors
ENGL 597  Topics in Literature: Anglophone Fiction (3)
ENGL 598  Literary Criticism and/or History (Topics vary from year to year) (3)
ENGL 599  Literary Theory (Topics vary from year to year) (3)
ENGL 600  Professional Methodology (3)
ENGL 601  Teaching Practicum (3)
ENGL 602  Teaching Practicum (3)
ENGL 603  Teaching of Literature and Composition (3)
ENGL 604  Teaching of Literature and Composition (3)
ENGL 605  Third Year Writing Workshop (3)
ENGL 621  Directed Reading (3)
ENGL 622  Directed Reading (3)
ENGL 701  British and American Literature (3)
ENGL 702  British and American Literature (3)
ENGL 703  Research Leading to Candidacy (3)
ENGL 704  Research Leading to Candidacy
ENGL 800  Ph.D. Research and Thesis

ENST (Environmental Studies)

The George R. Brown School of Engineering / The School of Architecture / The School of Humanities / The School of Social Sciences / The Wiess School of Natural Sciences

ENST 101  The Sustainable Environment (3)
ENST 201  Introduction to the Environment: Environmental History and (3)
ENST 301  Introduction to the Environment: Environmental History and (3)
ENST 302  Environmental Issues: Rice Into the Future (3)

ENVI (Environmental Engineering)

The George R. Brown School of Engineering / Department of Civil and Environmental Engineering

ENVI 201  Introduction: Environmental Systems (4)
ENVI 306  Global Environmental Law and Sustainable Development (3)
ENVI 401  Introduction to Environmental Chemistry (4)
ENVI 403  Principles of Environmental Engineering (3)
ENVI 406  Introduction to Environmental Law (3)
ENVI 411  Air Resource Management (3)
ENVI 412  Hydrology and Watershed Analysis (3)
ENVI 434  Chemical Transport and Fate in the Environment (3)
ENVI 443  Atmospheric Science (3)
ENVI 454  Finite Element Methods in Fluid Mechanics (3)
ENVI 506  Global Environmental Law and Sustainable Development (3)
ENVI 511  Atmospheric Chemistry and Physics (3)
ENVI 512  Hydrologic Design Lab (1)
ENVI 518  Groundwater Hydrology and Contamination (3)
ENVI 550  Environmental Organic Chemistry (3)
ENVI 554  Finite Element Methods in Fluid Mechanics (3)
ENVI 558  Child Slaves and the Sentimental Novel (3)
ENVI 559  Agency, Class, and Anxiety in 19th-Century Literature and Criticism (3)
ENVI 560  19th-Century American Literature and Gender (3)
ENVI 561  James and His Critics (3)
ENVI 562  Modern American Fiction (3)
ENVI 563  Contemporary Literature: Late 20th-Century American Literature and Culture (3)
ENVI 564  Seminar: Faulkner and Contemporary Theory (3)
ENVI 565  20th-Century American Poetry (3)
ENVI 566  20th-Century American Literature and Cultural Studies (3)
ENVI 570  African American Studies (Topics vary from year to year) (3)
ENVI 572  Chicano/A Studies: (3)
ENVI 575  Film and Theory (3)
ENVI 578  Literature and the Environment: Ecocriticism (3)
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ENVI 582  Feminist Literary Theory (3)
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ENVI 587  Cultural Studies: Feminism (3)
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ENVI 601  Teaching Practicum (3)
ENVI 602  Teaching Practicum (3)
ENVI 603  Teaching of Literature and Composition (3)
ENVI 604  Teaching of Literature and Composition (3)
ENVI 605  Third Year Writing Workshop (3)
ENVI 621  Directed Reading (3)
ENVI 622  Directed Reading (3)
ENVI 701  British and American Literature (3)
ENVI 702  British and American Literature (3)
ENVI 703  Research Leading to Candidacy (3)
ENVI 704  Research Leading to Candidacy
ENVI 800  Ph.D. Research and Thesis

For complete descriptions of courses, visit http://www.rice.edu/catalog/

(#) = credit hours per semester
### ESCI (Earth Science)

**The Wiess School of Natural Sciences**

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<td>ESCI 107</td>
<td>Oceans and Global Change</td>
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<td>ESCI 108</td>
<td>Crises of the Earth</td>
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**FLAC (Foreign Languages Across the Curriculum)**

**The School of Humanities**

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FREN (French Studies)

The School of Humanities

FREN 101 Elementary French Language and Culture I (5)
FREN 102 Elementary French Language and Culture II (5)
FREN 113 Beginning French for Engineering and Sciences I (5)
FREN 114 Beginning French for Engineering and Sciences II (5)
FREN 117 The Language of Love: Amorous Expression in the French Tradition (3)
FREN 121 The Francophone Cinema (3)
FREN 122 The Sacred in France: From the Renaissance to the 20th Century (3)
FREN 201 Intermediate French Language and Culture I (4)
FREN 202 Intermediate French Language and Culture II (4)
FREN 203 Facets of the Francophone Worlds (3)
FREN 301 Advanced French for Written and Oral Communication (3)
FREN 302 French Phonetics (3)
FREN 303 Special Topics in French: Music in France at the Turn of the 19th Century (3)
FREN 305 French for the Professions (3)
FREN 306 Aspects of Modern French Culture: Dijon (3)
FREN 311 Major Literary Works and Artifacts of Pre-Revolutionary France (3)
FREN 312 Major Literary Works and Artifacts of Post-Revolutionary France (3)
FREN 313 Advanced French for Engineering and Sciences I (3)
FREN 314 Advanced French for Engineering and Sciences II (3)
FREN 318 Structure of French (3)
FREN 320 Classics of the French Novel in English Translation (3)
FREN 321 The 17th Century (3)
FREN 322 The Sacred in France: From the Renaissance to the End of the Twentieth Century (3)
FREN 347 Interpretations of the French Theater: from Reading to Staging (3)
FREN 350 19th-Century French Literature in English Translation (3)
FREN 351 Provinces of France (3)
FREN 355 Modern Short Fiction: Balzac to Borges in English Translation (3)
FREN 387 Images of Contemporary France (3)
FREN 401 Translation (3)
FREN 403 Special Topics: Paris (3)
FREN 407 Introduction to French Film (3)
FREN 408 Topics in French Film (3)
FREN 410 The Literary and Historical Image of the Medieval Woman (3)
FREN 414 Literature and Culture of Middle Ages: Saints and Sinners (3)
FREN 415 Courtly Love in Medieval France (3)
FREN 420 The Motif of Voyage in Writings from the French Renaissance (3)
FREN 423 Modern French Painters and Their Writers (3)
FREN 430 French 17th Century (3)
FREN 434 French Feminist Theory (3)
FREN 440 French Enlightenment (3)
FREN 445 Enlightenment and Counter-Enlightenment (3)
FREN 450 Topics in 19th Century Lyric (3)
FREN 455 Studies in 19th-Century Narrative (3)
FREN 459 Masterpieces of French Theater: Corneille to Sartre (3)
FREN 460 Women and Women's Voices in French Literature (3)
FREN 462 The Lyric Genre from Baudelaire to Bonnefoy (3)
FREN 463 From Modernity to Postmodernity and the Third Technological Revolution (3)
FREN 464 Literature and Psychoanalysis (3)
FREN 465 Surrealist Narratives (3)
FREN 466 The Narrative and the Other Arts (3)
FREN 467 Postmodern Break in French Philosophy (3)
FREN 468 French Philosophy (3)
FREN 469 Gender, War, and Representation in Modern England and France (3)
FREN 470 French Utopias (3)
FREN 472 Proust (3)
FREN 473 "La Revolution Tranquille": History and Culture of Modern Quebec (3)
FREN 474 Constructing Identities in and Out of France (3)
FREN 475 Flaubert and Sartre: "L'Idiot de la Famille" (3)
FREN 477 The Meaning of the Sacred in French thought from Surrealism to the Present (3)
FREN 478 Contemporary French Thought: Toward a Symbolic Economy (3)
FREN 479 Marx, Bataille, Baudrillard (3)
FREN 482 Tradition and Dissidence (3)
FREN 483 Sociopolitical Interpretation of Literature (3)
FREN 484 Aesthetic Theories of Modernism and Postmodernism (3)
FREN 485 The Novel from Belle Epoque to 1950 (3)
FREN 486 Aesthetics of the Fragmentary (3)
FREN 487 20th-Century Novel in French (3)
FREN 488 Evolution of the Novel (3)
FREN 489 Feminine and Masculine Identity (3)
FREN 490 French Utopianists (3)
FREN 491 Modern Painters and Their Writers (3)
FREN 492 Language and Power: The Politics of Language Use (3)
FREN 500 M.A. Thesis Research (3)
FREN 503 Special Topics in French Literature: Studies: Literature and Knowledge in 16th- and 17th-Century France (3)
FREN 504 Beginnings of the Language and Literature of France (3)
FREN 507 Introduction to French Film (3)
FREN 508 Topics in French Film (3)
FREN 510 The Literary and Historical Image of the Medieval Woman (3)
FREN 515 Courtly Love in Medieval France (3)
FREN 520 French Renaissance (3)
FREN 530 French Classicism (3)
FREN 534 French Feminist Theory (3)
FREN 535 Seminar: 17th- and 18th-Century Comedy (3)
FREN 540 The Age of Enlightenment (3)
FREN 545 Enlightenment and Counter-Enlightenment (3)
FREN 555 From Nostalgia to Hysteria: Balzac, Stendhal, Flaubert, Zola (3)
FREN 559 Masterpieces of French Theater: Corneille to Sartre (3)
FREN 561 Developments in French Feminist Theory (3)
FREN 562 The Lyric Genre from Baudelaire to Bonnefoy (3)
FREN 563 From Modernity to Postmodernity and the Third Technological Revolution (3)
FREN 564 Literature and Psychoanalysis (3)
FREN 566 The Narrative and the Other Arts (3)
FREN 567 The Postmodern Break in French Philosophy (3)
FREN 568 French Philosophy (3)
FREN 569 Corneille to Sartre (3)
FREN 573 “La Revolution Tranquille”: History and Culture of Quebec (3)
FREN 574 Constructing Identities in and Out of France (3)
FREN 575 Flaubert and Sartre: “L’Idiot de la Famille” (3)
FREN 577 The Meaning of the Sacred in French Thought, from Surrealism to the Present (3)
FREN 578 Contemporary French Thought: Toward a Symbolic Economy (3)
FREN 579 Marx, Bataille, Baudrillard (3)
FREN 580 Contemporary French Theory: The Case of Gilles Deleuze (3)
FREN 581 Contemporary French Theory: The Case of Gilles Deleuze (Continuation) (3)
FREN 582 Tradition and Dissidence (3)
FREN 583 Socio-Political Interpretation of Literature (3)
FREN 584 Aesthetic Theories of Modernism and Postmodernism (3)
FREN 585 Novel: Belle Epoque–1950 (3)
FREN 586 Modern Literature and Literary Theory: Towards an Aesthetics of the Fragmentary (3)
FREN 587 20th-Century Novel in French (3)
FREN 588 Evolution of the Novel (3)
FREN 589 Feminine and Masculine Identity (3)
FREN 592 Language and Power: The Politics of Language Use (3)
FREN 594 The Writings of Michel Foucault (3)
FREN 600 Independent Study (3)
FREN 610 Topics in Language Methodology (3)
FREN 611 Language Methodology Practicum (various)
FREN 800 Ph.D. Thesis Research

GERM (German)

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GERM 102 Introduction to German II (4)
GERM 103 Beginning German for Engineering and Sciences I (4)
GERM 104 Beginning German for Engineering and Sciences II (5)
GERM 112 Freshman Seminar: German Cinema (3)
GERM 113 Beginning German for Engineering and Sciences I (5)
GERM 114 Beginning German for Engineering and Sciences II (5)
GERM 121 Freshman Seminar: Kafka to the Holocaust: Discourse in (3)
GERM 122 Freshman Seminar: German Cinema (3)
GERM 123 Freshman Seminar: through Time and Space—European Travel Stories (3)
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GERM 202 Intermediate German II (4)
GERM 203 Intermediate German for Engineering and Sciences I (4)
GERM 204 Intermediate German for Engineering and Sciences II (4)
GERM 213 Intermediate German for Engineering and Sciences I (5)
GERM 214 Intermediate German for Engineering and Sciences II (5)
GERM 301 Composition and Conversation I (3)
GERM 302 Composition and Conversation II: Language and Style in Cultural (3)
GERM 305 Composition and Conversation I (3)
GERM 306 Composition and Conversation II (3)
GERM 311 Survey of German Literature I (3)

GERM 312 20th-Century German Literature and Culture: a Textual and Visual Survey (3)
GERM 321 Mapping German Culture: European Women Filmmakers (3)
GERM 322 Mapping German Culture: Marx, Freud, Einstein: Forebears of Modernity (3)
GERM 323 Mapping German Culture: Citizenship and Immigration in (3)
GERM 324 Mapping German Culture: Berlin: Residence, Metropolis, Capital (3)
GERM 341 The Age of Goethe: Early Romanticism: Looking Back to Modernity (3)
GERM 355 Special Topics in Young Goethe: from Literary Revolution to World (3)
GERM 358 Mapping German Culture: Topics in Modern German History: Germany from Revolution to Unification 1844–1878 (3)
GERM 359 Mapping German Culture: Individual and Society (3)
GERM 360 Mapping German Culture: Education and Occupation in (3)
GERM 372 German Nobel Prize Laureates (3)
GERM 375 German Nobel Prize Laureates (3)
GERM 377 Contemporary Germany: Postwar to Post-Unification in Film (3)
GERM 378 New German Cinema (3)
GERM 381 Discourse in Alienation: Kafka to the Holocaust: 1910–1945 (3)
GERM 391 Special Topics in National Socialism: The Ideology and Practice of a (3)
GERM 392 Special Topic: German Fairy Tale, Old and New (3)
GERM 395 German Society and Politics (3)
GERM 401 Independent Work in German Literature (3)
GERM 402 Independent Work in German Literature (3)
GERM 403 Honor Thesis (3)
GERM 404 Special Topics: Honor Thesis (3)
GERM 405 Topics in Modern German History (3)
GERM 411 German Enlightenment to Romanticism: 1700–1850 (3)
GERM 412 German Realism to Modernism: 1850–Present (3)
GERM 422 Special Topics Seminar: Politik Und Gesellschaft (German Society and Politics from 1945 to the Present) (3)
GERM 433 Linguistic Structure of German (3)
GERM 434 History of the German Language (3)
GERM 436 Special Topics in Politics of the Fantastic: European Romanticism (3)
GERM 437 Adaptations: from Text to Film (3)
GERM 500 Graduate Research
GERM 510 Seminar: Topics in Language Methodology (3)
GERM 511 Teaching German: Praxis and Theory (3)
GERM 512 Graduate Independent Work (3)
GERM 563 Lyric Poetry: Forms and Themes (3)
GERM 565 Special Topics in the Search for Cultural Identity (3)
GERM 571 The Rise of the Modern Novel (3)
GERM 595 German Social and Cultural Theory (3)
GERM 600 Graduate Research (3)
GERM 611 Language Methodology Practicum
GERM 800 Graduate Research

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(#) = credit hours per semester
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#### HIST 477
The Idea of Human Rights (3)

#### HIST 480
Communications and Public Culture in 19th-Century America (3)

#### HIST 481
The Civil War in American Culture: Before, During, and After (3)

#### HIST 482
Women in the American South (3)

#### HIST 483
The Postwar South: 1865–1965 (3)

#### HIST 484
Politics of Race in the South: 1865–Present (3)

#### HIST 485
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#### HIST 488
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#### HIST 489
Migrations and Diasporas in the Indian Ocean World (3)

#### HIST 490
The Mexican Revolution: Interpretations (3)

#### HIST 492
Modernity and Religion (3)

#### HIST 493
Cultural Responses to Germany During WWI (3)

#### HIST 496
A Turbulent Time: The World of the Haitian Restoration (3)

#### HIST 498
Projects in Afro-American History (3)

#### HIST 501
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#### HIST 502
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#### HIST 541
Graduate Research Seminar: The History of the Modern South (4)

#### HIST 543
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#### HIST 544
After the Deluge: WWI and European History (4)

#### HIST 545
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#### HIST 546
An Age of Extremes: The Theory and Practice of Totalitarianism (4)

#### HIST 547
2nd Intl and After: Social and Political History of Marxism in 20th (4)

#### HIST 548
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#### HIST 549
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#### HIST 550
Main Issues in Caribbean History (4)

#### HIST 551
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#### HIST 553
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#### HIST 554
Topics in Late Medieval Spanish History (4)

#### HIST 560
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#### HIST 578
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#### HIST 597
Research Seminar: Law, Society, and the State in Progressive Era America (4)

#### HIST 598
Readings in American Legal History (4)

#### HIST 800
Ph.D. Research

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### HONS (Honors Courses)

HONS 470 Rice Undergraduate Scholars Program (Rusp) (3)

HONS 471 Rice Undergraduate Scholars Program (Rusp) (1)

### HUMA (Humanities)

#### The School of Humanities

HUMA 100 Introduction to Humanities: Constructing Western Traditions (3)

HUMA 101 From Ancient Greece to Medieval Islam: Introduction to Western Literature, History, and Philosophy (3)

HUMA 102 From the Renaissance to Einstein: Introduction to Western Literature, History, and Philosophy (3)

HUMA 103 Introduction to Medieval Civilization: The High Middle Ages (3)

HUMA 104 Self in Text and Image (3)

HUMA 105 Myth, History, and the Problem of the Past (3)

HUMA 107 Bible in Western Tradition (3)

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**The School of Humanities / Department of Kinesiology**

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<td>KINE 499</td>
<td>Teaching Practicum</td>
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### ITAL (Italian Language and Culture)

**The School of Humanities / Department of French Studies**

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<tr>
<td>ITAL 102</td>
<td>Elementary Italian Language and Culture II</td>
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<tr>
<td>ITAL 201</td>
<td>Intermediate Italian I</td>
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<tr>
<td>ITAL 202</td>
<td>Intermediate Italian for Written and Oral Communication</td>
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<td>ITAL 302</td>
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### JAPA (Japanese)

**The School of Humanities / Center for the Study of Languages**

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For complete descriptions of courses, visit [http://www.rice.edu/catalog/](http://www.rice.edu/catalog/)
For complete descriptions of courses, visit http://www.rice.edu/catalog/
COURSES OF INSTRUCTION

For complete descriptions of courses, visit http://www.rice.edu/catalog/

COURSES OF INSTRUCTION  307

# = credit hours per semester

MATH 222  Honors Calculus IV (3)
MATH 321  Introduction to Analysis I (3)
MATH 322  Introduction to Analysis II (3)
MATH 355  Linear Algebra (3)
MATH 356  Abstract Algebra (3)
MATH 365  Number Theory (3)
MATH 366  Geometry (3)
MATH 368  Topics in Combinatorics (3)
MATH 381  Introduction to Partial Differential Equations (3)
MATH 382  Complex Analysis (3)
MATH 390  Undergraduate Colloquium (1)
MATH 401  Differential Geometry (3)
MATH 402  Differential Geometry (3)
MATH 423  Partial Differential Equations (3)
MATH 424  Partial Differential Equations (3)
MATH 425  Integration Theory (3)
MATH 426  Topics in Real Analysis (3)
MATH 427  Complex Analysis (3)
MATH 428  Topics in Complex Analysis (3)
MATH 443  General Topology (3)
MATH 444  Geometric Topology (3)
MATH 445  Algebraic Topology (3)
MATH 463  Algebra I (3)
MATH 464  Algebra II (3)
MATH 465  Topics in Algebra (3)
MATH 468  Potpourri (3)
MATH 490  Supervised Reading
MATH 501  Topics in Differential Geometry (3)
MATH 502  Topics in Differential Geometry (3)
MATH 517  Mathematical Physics (3)
MATH 518  Mathematical Physics (3)
MATH 521  Advanced Topics in Real Analysis (3)
MATH 522  Advanced Topics in Real Analysis (3)
MATH 523  Functional Analysis (3)
MATH 526  Topics in Complex Analysis
MATH 527  Ergodic Theory and Topological Dynamics (3)
MATH 541  Topics in Topology (3)
MATH 542  Topics in Advanced Topology (3)
MATH 590  Current Mathematics Seminar (1)
MATH 591  Graduate Teaching Seminar (1)
MATH 800  Thesis and Research

MDST (Program in Medieval Studies)

The School of Humanities

MDST 101  Elementary Latin I (3)
MDST 102  Elementary Latin II (3)
MDST 108  Art in Context: Late Medieval and Renaissance Culture (3)
MDST 111  Introduction to the History of Western Art I: Prehistoric–Gothic (4)
MDST 201  History of Philosophy I (3)
MDST 202  Introduction to Medieval Civilization: The Early Middle Ages (3)

() = credit hours per semester

LPAP (Lifetime Physical Activity Program)

Student Affairs

LPAP 101  Lifetime Physical Activity (0)
LPAP 102  Lifetime Physical Activity (0)
LPAP 103  Intermediate Instruction in Lifetime Physical Activity (1)
LPAP 104  Intermediate Instruction in Lifetime Physical Activity (1)
LPAP 105  Intermediate Instruction in Lifetime Physical Activity (1)
LPAP 106  Intermediate Instruction in Lifetime Physical Activity (1)

MANA (Managerial Studies)

The School of Social Sciences

MANA 404  Management Communications in a Consulting Simulation (3)
MANA 497  Independent Study (3)
MANA 498  Independent Study (3)

MATH (Mathematics)

The Wiess School of Natural Sciences

MATH 101  Single Variable Calculus I (3)
MATH 102  Single Variable Calculus II (3)
MATH 111  Fundamental Theorem of Calculus (3)
MATH 112  Calculus and Its Applications (3)
MATH 211  Ordinary Differential Equations and Linear Algebra (3)
MATH 212  Multivariable Calculus (3)
MATH 221  Honors Calculus III (3)

For complete descriptions of courses, visit http://www.rice.edu/catalog/
MDST 203  Introduction to Medieval Civilization: The High Middle Ages (3)
MDST 211  Intermediate Latin I: Prose (3)
MDST 212  Intermediate Latin II (3)
MDST 222  Medieval and Renaissance Music (3)
MDST 257  Jews and Christians in Medieval Europe (3)
MDST 259  The Medieval Cultures of Judaism and Christianity (3)
MDST 273  Ancient & Medieval Jewish History, 70-1492 (3)
MDST 281  The Middle East: The Prophet Muhammad to Muhammad Ali (3)
MDST 300  Medieval Literature: Dante (In Translation) OR Medieval Women Writers (3)
MDST 301  Ancient and Medieval Philosophy (3)
MDST 303  Undergraduate Independent Reading (3)
MDST 304  Undergraduate Independent Reading
MDST 308  The World of Late Antiquity (3)
MDST 311  Old English (3)
MDST 312  Survey of Old English Literature: Gender and Power in Old English (3)
MDST 313  Beowulf (3)
MDST 314  Survey of Middle English Literature (3)
MDST 315  Introduction to Medieval Culture, 1000-1492 (3)
MDST 316  Chaucer (3)
MDST 317  Arthurian Literature (3)
MDST 318  J. R. R. Tolkien (3)
MDST 320  Science in Antiquity and the Middle Ages (3)
MDST 321  Directed Readings: Medieval History (4)
MDST 322  Directed Readings: Medieval History (3)
MDST 325  Introduction to Medieval Civilization: The Early Middle Ages (3)
MDST 326  Introduction to Medieval Civilization: The High Middle Ages (3)
MDST 327  Late Antiquity / Early Christian Art and Architecture (3)
MDST 330  Early Medieval Art: 5th Century–The Romanesque Period (3)
MDST 331  Gothic Art and Architecture in Northern Europe: 1140–1300: The Age of Cathedrals (3)
MDST 332  Late Gothic Art and Architecture in Northern Europe: 1300–1500 (3)
MDST 336  Art and Architecture in the Middle East: Late Medieval Period through the Modern Period (3)
MDST 338  Special Topics in Medieval Art
MDST 339  Independent Study: Medieval Art
MDST 340  Ancient and Medieval Political Theory (3)
MDST 345  Early Modern Europe: Humanism and Expansion (3)
MDST 355  Art and Architecture in the Middle East: The Medieval Period (3)
MDST 357  Jews and Christians in Medieval Europe (3)
MDST 359  The Medieval Cultures of Judaism and Christianity (Enriched Version) (3)
MDST 368  Mythologies (3)
MDST 373  Ancient and Medieval Jewish History, 70-1492 (enriched version) (3)
MDST 382  Classical Islamic Culture (3)
MDST 384  The Crusades: Holy War and Medieval Christendom and Islam (3)
MDST 385  Christians and Jews in the Medieval Islamic World (3)
MDST 387  Life on the Nile: Egyptian Politics, Culture, and Society, Medieval to Modern Times (3)
MDST 395  History of the English Language (3)
MDST 406  Christine de Pizan in 15th-Century England (3)
MDST 410  Literary and Historical Images of the Medieval Woman (3)

MECH (Mechanical Engineering)

The George R. Brown School of Engineering / Department of Mechanical Engineering and Materials Science

MECH 200  Classical Thermodynamics (3)
MECH 211  Engineering Mechanics (3)
MECH 308  Senior Design Junior Observers (variable)
MECH 311  Mechanics of Deformable Solids (3)
MECH 331  Junior Laboratory I (1)
MECH 332  Junior Laboratory II (1)
MECH 340  Industrial Process Lab (1)
MECH 343  Modeling of Dynamics Systems (4)
MECH 371  Fluid Mechanics I (3)
MECH 372  Fluid Mechanics II (3)
MECH 373  Acoustics (3)
MECH 380  Introduction to Mechanical Effects in Tissues (3)
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<td>Computer-Aided Design (3)</td>
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<td>Senior Design Project (4)</td>
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<td>MECH 407</td>
<td>Mechanical Design Project I (3)</td>
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<td>MECH 412</td>
<td>Vibrations (3)</td>
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<td>Electromechanical Devices and Systems (3)</td>
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<td>Convective Heat Transfer (3)</td>
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**MGMT (Management)**

The Jesse H. Jones Graduate School of Management

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<td>Cost Management (1)</td>
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<td>Management Control (1)</td>
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<td>MGMT 508</td>
<td>Power, Influence, and Politics (1)</td>
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<td>MGMT 617</td>
<td>Managerial Decision Making (3)</td>
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For complete descriptions of courses, visit http://www.rice.edu/catalog/
COURSES OF INSTRUCTION

MGMT 619 Corporate Governance (1)
MGMT 620 The New Enterprise (2)
MGMT 621 The New Enterprise and Business Plan Development (3)
MGMT 624 Real Estate (3)
MGMT 625 Creative Entrepreneurship (2)
MGMT 626 Venture Capital (2)
MGMT 627 Enterprise Exchange (2)
MGMT 632 E-Business (2)
MGMT 633 Business Process Re-Engineering (1)
MGMT 634 Intellectual Capital (1)
MGMT 635 Emerging Technologies (2)
MGMT 636 Systems Analysis and Database Design (2)
MGMT 637 Competitive Uses of Information Technology (2)
MGMT 642 Future and Options I (1)
MGMT 643 Portfolio Management I (3)
MGMT 644 Portfolio Management II (3)
MGMT 645 Investments (3)
MGMT 647 Corporate Financial Management (2)
MGMT 648 Applied Finance (2)
MGMT 650 Futures and Options II (3)
MGMT 651 Fixed Income Management (3)
MGMT 652 Mergers and Acquisitions (2)
MGMT 653 Private Equity (1)
MGMT 654 Commercial Banking (1)
MGMT 656 Energy Derivatives (1)
MGMT 657 International Finance (1)
MGMT 658 Applied Risk Management (1)
MGMT 661 International Business Law (3)
MGMT 663 Advanced Corporate Finance (1)
MGMT 664 Business Forecasting (1)
MGMT 667 Corporate Finance for Nonfinancial Managers (2)
MGMT 669 Business Strategy in the Energy Industry (1)
MGMT 670 Strategic Planning and Creativity (1)
MGMT 671 Corporate Crisis Management Communication (1)
MGMT 672 Change Communications (1)
MGMT 673 International Communications (1)
MGMT 674 Production and Operations Management (3)
MGMT 675 Management of Innovation (2)
MGMT 676 Project Management / Project Finance (3)
MGMT 678 U.S. Healthcare Management (3)
MGMT 679 Cost and Quality in Healthcare (3)
MGMT 682 Pricing (1)
MGMT 683 Service Marketing and Management (3)
MGMT 684 Product Management (3)
MGMT 686 Marketing Research (2)
MGMT 687 Marketing Strategy (3)
MGMT 688 Buyer Behavior (2)
MGMT 689 Marketing Models (3)
MGMT 692 Internet Marketing (3)
MGMT 693 New Product Development (3)
MGMT 695 Trading Room Seminar (1)
MGMT 697 Advertising Management (3)
MGMT 699 Advanced Marketing Research (3)

For complete descriptions of courses, visit http://www.rice.edu/catalog/  
(#) = credit hours per semester
MSCI (Materials Science)

The George R. Brown School of Engineering / Department of Mechanical Engineering and Materials Science

MSCI 301 Materials Science (3)
MSCI 303 Materials Science Junior Lab (1)
MSCI 304 Applied Materials Engineering (1)
MSCI 311 Introduction to Design (4)
MSCI 401 Thermodynamics and Transport Phenomena in Materials Science (3)
MSCI 402 Mechanical Properties of Materials (3)
MSCI 404 Materials Engineering and Design (4)
MSCI 406 Physical Properties of Solids (3)
MSCI 411 Metallography and Phase Relations (3)
MSCI 415 Ceramics and Glasses (3)
MSCI 500 Materials Science Seminar (0)
MSCI 501 Materials Science Seminar (1)
MSCI 523 Properties, Synthesis, and Design of Composite Materials (3)
MSCI 535 Crystallography and Diffraction (3)
MSCI 537 Materials Science Senior Lab (1)
MSCI 541 Physical Metallurgy (3)
MSCI 550 Time-Dependent Plasticity (3)
MSCI 561 Advanced Metallurgical Lab I (1)
MSCI 562 Advanced Metallurgical Lab II (1)
MSCI 569 Corrosion Science and Engineering (3)
MSCI 570 Senior Design Thesis Project (2)
MSCI 571 Senior Design Thesis Project (2)
MSCI 593 Polymer Science and Engineering (3)
MSCI 594 Properties of Polymers (3)
MSCI 596 Chemistry of Electronic Materials (3)
MSCI 603 Technology Management For Scientists and Engineers (3)
MSCI 609 Fracture Mechanics (3)
MSCI 610 Crystal Thermodynamics (3)
MSCI 611 Independent Study (variable)
MSCI 612 Independent Study (variable)
MSCI 614 Special Topics: Principles of Nanoscale Mechanics (2)
MSCI 615 Special Topics (variable)
MSCI 623 Analytical Spectroscopies: Tools in Materials Science (3)
MSCI 634 Thermodynamics of Alloys (3)
MSCI 635 Transformation in Alloys (3)
MSCI 645 Thin Films (3)
MSCI 666 Conduction Phenomena in Solids (3)
MSCI 750 Entrepreneurial Management for Scientists and Engineers (3)
MSCI 751 New Venture Creation for Scientists and Engineers (3)

MILI (Military Science)

The Military Science Department / University of Houston

MILI 106 Advanced Physical Fitness Course (1)
MILI 108 Physical Fitness Training (0)
MILI 109 Physical Fitness Training (1)
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MILI 122 Introduction to Leadership (1)
MILI 123 Leadership Lab (0)
MILI 201 Military Leadership Development (2)
MILI 202 Military Leadership Development (2)
MILI 203 Leadership Laboratory (0)
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MILI 304 Leadership Laboratory (0)
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MILI 403 Leadership Laboratory (0)

For complete descriptions of courses, visit http://www.rice.edu/catalog/
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For complete descriptions of courses, visit http://www.rice.edu/catalog/
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### COURSES OF INSTRUCTION

#### NSCI (Natural Sciences)

**The Wiess School of Natural Sciences**

- **NSCI 101** Introduction to the Physical Sciences (3)
- **NSCI 102** Introduction to the Physical Sciences (3)
- **NSCI 111** Science Today I: Concepts in Physics and Astronomy (3)
- **NSCI 112** Science in the Modern World II (3)
- **NSCI 230** Computation Science and Engineering (3)
- **NSCI 500** Internship (15)
- **NSCI 501** Professional Master’s Seminar (1)
- **NSCI 505** Environmental Lab (1)
- **NSCI 506** Environmental Case Studies (1)

#### PHIL (Philosophy)

**The School of Humanities**

- **PHIL 100** Problems of Philosophy (3)
- **PHIL 101** Contemporary Moral and Legal Issues (3)
- **PHIL 103** Philosophical Aspects of Cognitive Science (3)
- **PHIL 104** Philosophical Perspectives on Science (3)
- **PHIL 105** Historical Introduction to Philosophy (3)
- **PHIL 106** Logic (3)
- **PHIL 108** The Philosophical Life: A Literary and Historical Introduction (3)
- **PHIL 201** History of Philosophy I (3)
- **PHIL 202** History of Philosophy II (3)
- **PHIL 301** Ancient and Medieval Philosophy (3)
- **PHIL 302** Modern Philosophy (3)
- **PHIL 303** Theory of Knowledge (3)
- **PHIL 304** Metaphysics (3)
- **PHIL 305** Mathematical Logic (3)
- **PHIL 306** Ethics (3)
- **PHIL 307** Social and Political Philosophy (3)
- **PHIL 308** Continental Philosophy (3)
- **PHIL 309** Aesthetics (3)
- **PHIL 311** Philosophy of Religion (3)
- **PHIL 312** Philosophy of Mind (3)
- **PHIL 313** Philosophy of Science (3)
- **PHIL 314** The Philosophy of Medicine (3)
- **PHIL 315** Ethics, Medicine, and Public Policy (3)
- **PHIL 316** Philosophy of Law (3)
- **PHIL 317** Ethics and Existence (3)
- **PHIL 319** Feminist Philosophy (3)
- **PHIL 321** Kant and 19th-Century Philosophy (3)
- **PHIL 326** History of Ethics (3)
- **PHIL 327** History of Social and Political Philosophy (3)
- **PHIL 331** Moral Psychology (3)
- **PHIL 335** Advanced Topics in Value Theory (3)
- **PHIL 353** Philosophy of Language (3)
- **PHIL 355** Philosophical Topics in Advanced Logic (3)
- **PHIL 357** Incompleteness, Undecidability, and Computability (3)

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### NAVA (Naval Science)

- **NAVA 101** Naval Orientation (0)
- **NAVA 102** Naval Engineering (3)
- **NAVA 201** Naval Weapons: Naval Ship Systems II (3)
- **NAVA 202** Sea Power and Maritime Affairs (2)
- **NAVA 301** Navigation (3)
- **NAVA 302** Naval Operations II (3)
- **NAVA 303** Evolution of Warfare (2)
- **NAVA 311** Navigation Lab (0)
- **NAVA 401** Leadership Management I (2)
- **NAVA 402** Leadership and Ethics (1)
- **NAVA 410** Amphibious Warfare (2)

### NEUR (Neurosciences)

**The School of Social Sciences**

- **NEUR 415** Mathematical Neuroscience (3)
- **NEUR 501** Cognitive Neuroscience I (3)
- **NEUR 502** Cognitive Neuroscience II (3)
- **NEUR 504** Cellular Neurophysiology I and II (3)
- **NEUR 505** Optical Imaging (3)
- **NEUR 506** Concepts of Learning and Memory (3)
- **NEUR 511** Integrative Neuroscience Core I (5)
- **NEUR 512** Integrative Neuroscience CORE II (5)
- **NEUR 515** Neural Development (3)
- **NEUR 516** Sensory Systems (3)

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For complete descriptions of courses, visit [http://www.rice.edu/catalog/](http://www.rice.edu/catalog/)

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For complete descriptions of courses, visit [http://www.rice.edu/catalog/](http://www.rice.edu/catalog/)

(#) = credit hours per semester
PLSH (Polish)

The School of Humanities / Department of German and Slavic Studies

PLSH 101 Introduction to Polish I (4)
PLSH 102 Introduction to Polish II (4)

POLI (Political Science)

The School of Social Sciences

POLI 209 Introduction to Constitutionalism (3)
POLI 210 American Government and Politics (3)
POLI 211 Introduction to International Relations (3)
POLI 212 Introduction to Comparative Politics (3)
POLI 250 International Political Economy of Gender (3)
POLI 300 Federalism and Intergovernmental Politics (3)
POLI 301 State Politics (3)
POLI 305 Directed Reading I (3)
POLI 306 Directed Reading II (3)
POLI 307 Political Science Internship I
POLI 308 Political Science Internship II
POLI 315 Elections and Voting Behavior (3)
POLI 317 The Congress (3)
POLI 318 The Presidency (3)
POLI 321 American Constitutional Law (3)
POLI 330 Minority Politics (3)
POLI 331 Environmental Politics and Policy (3)
POLI 332 Urban Politics (3)
POLI 333 Comparative Legislatures (3)
POLI 334 Parties and Interest Groups (3)
POLI 335 Political Environment of Business (3)
POLI 336 Politics of Regulation (3)
POLI 337 Public Policy and Bureaucracy (3)
POLI 338 Policy Analysis (3)
POLI 339 Southern Politics (3)
POLI 340 Ancient and Medieval Political Theory (3)
POLI 341 Gender and Politics (3)
POLI 342 Politics of the Judiciary (3)
POLI 354 Latin American Politics (3)
POLI 355 Government and Politics of the Middle East (3)
POLI 356 The Politics of Latin American Economic Development (3)
POLI 357 Democracy and Democratization (3)
POLI 360 Western European Democracies (3)
POLI 362 European Integration (3)
POLI 365 Politics of France (3)
POLI 366 Elections in Western Democracies (3)
POLI 367 Soviet and Post-Soviet Politics (3)
POLI 372 American Foreign Policy (3)
POLI 373 International Conflict (3)
POLI 374 Strategic Interactions in International Relations (3)
POLI 375 International Organization (3)

For complete descriptions of courses, visit http://www.rice.edu/catalog/
PORT (Portuguese)

The School of Humanities / Department of Hispanic and Classical Studies

PORT 101 Introduction to Portuguese Language and Culture I (5)
PORT 102 Introduction to Portuguese Language and Culture II (5)
PORT 201 Intermediate Portuguese Language and Culture I (4)
PORT 202 Intermediate Portuguese Language and Culture II (4)
PORT 400 Independent Study

PSYC (Psychology)

The School of Social Sciences

PSYC 101 Introduction to Psychology (3)
PSYC 102 Readings in Introductory Psychology (1)
PSYC 202 Introduction to Social Psychology (3)
PSYC 203 Introduction to Cognitive Psychology (3)
PSYC 221 Developmental Psychology (3)
PSYC 231 Industrial and Organizational Psychology (3)
PSYC 308 Memory (3)
PSYC 309 Psychology of Language (3)
PSYC 315 Semantics: Introduction to the Study of Meaning (3)
PSYC 329 Psychological Testing (3)
PSYC 330 Personality Theory and Research (3)
PSYC 331 Psychology of Gender (3)
PSYC 332 Abnormal Behavior (3)
PSYC 339 Statistical Methods in Psychology (4)
PSYC 340 Research Methods (4)
PSYC 342 Computer Applications (3)
PSYC 350 Psychology of Learning (3)
PSYC 351 Psychology of Perception (3)
PSYC 352 Formal Foundations of Cognitive Psychology (3)
PSYC 360 Thinking (3)
PSYC 362 Biopsychology (3)
PSYC 370 Introduction to Human Factors and Ergonomics Design (3)
PSYC 409 Methods in Human–Computer Interaction (3)
PSYC 411 History of Psychology (3)
PSYC 430 Computational Modeling (3)
PSYC 431 Advanced Industrial / Organizational Psychology Seminar (3)
PSYC 432 Brain and Behavior (3)
PSYC 440 Advanced Seminar in General Psychology (3)
PSYC 441 Human–Computer Interaction (3)
PSYC 442 Computer Applications (3)
PSYC 450 The Psychology of Motivation (3)
PSYC 470 Engineering Psychology (3)
PSYC 480 Advanced Topics (3)
PSYC 488 Supervised Reading
PSYC 489 Senior Thesis
PSYC 502 Advanced Psychological Statistics I (3)
PSYC 503 Advanced Psychological Statistics II (3)
PSYC 504 Computer Applications in Psychology (3)
PSYC 510 Topics in General Psychology: Creativity and Intelligence (3)
PSYC 511 History and Systems of Psychology (3)
PSYC 520 Foundations of Cognitive Psychology (3)
PSYC 521 Psychology of Perception (3)
PSYC 522 Information Processing and Attention (3)
PSYC 524 Memory (3)
PSYC 525 Psycholinguistics (3)
PSYC 526 Artificial Intelligence (3)
PSYC 527 Thinking (3)
PSYC 529 Cognitive Research Seminar
PSYC 530 Foundations of I/O Psychology (3)
PSYC 533 I/O Psychology Research Seminar (3)
PSYC 540 Foundations of Human Factors (3)
PSYC 541 Human–Computer Interaction (3)
PSYC 542 Human Reliability and Safety (3)
PSYC 543 Computational Modeling Cognitive Processes (3)
PSYC 550 Foundations of Social Psychology (3)
PSYC 555 Second-Year Graduate Research (3)
PSYC 560 Psychology Presentations (3)
PSYC 561 Teaching in Psychology (3)
PSYC 563 Internship (3)
PSYC 571 First-Year Project (3)
PSYC 572 Second-Year Project (3)
PSYC 573 Nonthesis Graduate Research
PSYC 575 Cognitive Neuroscience I (3)
PSYC 576 Cognitive Neuroscience II (3)

For complete descriptions of courses, visit http://www.rice.edu/catalog/
PSYC 581 Vision Science (3)
PSYC 602 Psychometrics (3)
PSYC 610 Advanced Research Seminar (1)
PSYC 620 Advanced Topics in Cognitive Psychology (3)
PSYC 628 Memory Research Seminar (1)
PSYC 629 Psycholinguistics Research Seminar (1)
PSYC 630 Advanced Topics in I/O (3)
PSYC 632 Leadership (3)
PSYC 639 I/O Psychology Internship (1)
PSYC 640 Topics in Engineering Psychology (3)
PSYC 649 Engineering Psychology Internship (1)
PSYC 651 Advanced Topics in Social Psychology (3)
PSYC 660 Professional Issues (3)
PSYC 700 Thesis Research
PSYC 800 Dissertation Research

RELI (Religious Studies)

The School of Humanities

RELI 101 Introduction to the Study of Religion (3)
RELI 111 Introduction to African Religions (3)
RELI 122 The Bible and Its Interpreters (3)
RELI 123 God, Time, and History (3)
RELI 125 Introduction to Biblical Hebrew I (3)
RELI 126 Introduction to Biblical Hebrew II (3)
RELI 127 Intermediate Biblical Hebrew III (3)
RELI 128 Intermediate Biblical Hebrew IV (3)
RELI 132 Introduction to Tibetan Language and Culture (3)
RELI 139 Introduction to Indian Religions (3)
RELI 140 Introduction to Chinese Religions (3)
RELI 141 Introduction to Islam (3)
RELI 200 The Bible in the Western Tradition (3)
RELI 207 Who Is (Not) a Jew? (3)
RELI 209 Introduction to Judaism (3)
RELI 210 Ethics in Judaism (3)
RELI 220 Hinduism: An Introduction (3)
RELI 221 The Life of the Prophet Muhammad (3)
RELI 223 Qur’an and Commentary (3)
RELI 231 The Enlightenment of the Body (3)
RELI 241 The Book of Psalms, Exploring the Prayers of Church and Israel (3)
RELI 250 Meditation, Mysticism, and Magic (3)
RELI 260 Religion and the Social Sciences (3)
RELI 262 Mysticism: Texts and Methods (3)
RELI 264 Saints, Sages, and Exemplars (3)
RELI 266 Psychoanalysis and Religion (3)
RELI 270 Introduction to the Black Church in the United States (3)
RELI 280 Search for God in the Postmodern World (3)
RELI 282 Introduction to Christianity (3)
RELI 286 The Reformation and Its Results (3)
RELI 291 Religion and Culture (3)
RELI 293 Philosophers Look at Religion (3)
RELI 307 History of Christianity: The First Four Centuries (3)
RELI 308 Canonical Gospels: Narrative and Social Setting (3)
RELI 312 The Religious Thought of Martin Luther King, Jr. and Malcolm X (3)
RELI 316 The Invention of Paganism in the Roman Empire (3)
RELI 322 Introduction to Buddhism (3)
RELI 323 The Knowing Body: Buddhism, Gender, and the Social World (3)
RELI 325 Buddhism and the Female (3)
RELI 330 Introduction to Tibetan Language and Culture (3)
RELI 334 Psychology of Religion (3)
RELI 335 Afro-Caribbean Religious Thought (3)
RELI 336 African Religions in the Americas (3)
RELI 338 The Church in Africa (3)
RELI 340 Theology in Africa (3)
RELI 342 New Religious Movements in Africa (3)
RELI 350 Sacred Scriptures in Monotheistic Faiths (3)
RELI 352 Jihad and the End of the World (3)
RELI 354 Apocalyptic and Millennium Movements in Pre-Modern Asia (3)
RELI 355 Religion and Social Change in South Asia (3)
RELI 363 The Marriage of Heaven and Hell (3)
RELI 365 Mysticism and Meditation in China (3)
RELI 370 Dynamics of Classical Judaism (3)
RELI 371 Modern Jewish Thought (3)
RELI 372 Varieties of Jewish Mysticism (3)
RELI 373 Duties of the Heart: Themes in Medieval Jewish Thought (3)
RELI 382 Biblical Theology (3)
RELI 383 The Dead Sea Scrolls (3)
RELI 391 Death and Dying in Religion and Literature (3)
RELI 393 Religion, Myth, and Language (3)
RELI 395 Religion and Asceticism (3)
RELI 401 Independent Study
RELI 402 Independent Study
RELI 410 Apocalypse Then and Now (3)
RELI 423 African Myths and Rituals (3)
RELI 424 Religion and Politics in Africa (3)
RELI 425 Africana Thought and Philosophy (3)
RELI 426 Religion and Literature in Africa (3)
RELI 429 Department Seminar (3)
RELI 430 Religion and Modern Therapies (3)
RELI 432 Saints, Sages, and Exemplars (3)
RELI 440 Islam’s Mystical and Esoteric Tradition (3)
RELI 441 Popular Religion in the Middle East (3)
RELI 451 Philosophies and Theologies of History (3)
RELI 456 History of Western Christianity: Reformation–Present (3)
RELI 457 Modernity, Antimodernity, and Post-Modernity as Styles of Religiosity (3)
RELI 462 Medical Ethics and American Values I (3)
RELI 463 Medical Ethics and American Values II (4)
RELI 466 German–Jewish Idealism and Its Critics (3)
RELI 470 Buddhist Wisdom Texts (3)
RELI 471 Buddhist Meditation Theory: Women and Men (3)
RELI 492 Modernity and Religion (3)
RELI 506 Gospel and Tradition (3)
RELI 509 New Testament and Hermeneutics (3)

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For complete descriptions of courses, visit http://www.rice.edu/catalog/  
(#) = credit hours per semester
### COURSES OF INSTRUCTION

#### SOCI (Sociology)

**The School of Social Sciences**

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For complete descriptions of courses, visit http://www.rice.edu/catalog/

### COURSES OF INSTRUCTION

#### SOSC (Social Sciences)

**The School of Social Sciences**

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For complete descriptions of courses, visit http://www.rice.edu/catalog/

### COURSES OF INSTRUCTION

#### SPAN (Spanish)

**The School of Humanities / Department of Hispanic and Classical Studies**

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For complete descriptions of courses, visit http://www.rice.edu/catalog/

(#) = credit hours per semester
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### STAT (Statistics)

The George R. Brown School of Engineering

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(#) = credit hours per semester
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STAT 583  Introduction to Random Processes and Applications (3)
STAT 586  Wavelet and Spectral Analysis (3)
STAT 590  Independent Study
STAT 591  Independent Study
STAT 600  Graduate Seminar in Statistics
STAT 604  Advanced Economic Statistics (5)
STAT 610  Econometrics I (5)
STAT 611  Econometrics II (5)
STAT 620  Bayesian Foundations of Statistical Inference (3)
STAT 640  Data Mining and Statistical Learning (3)
STAT 670  Statistical Genetics (3)
STAT 681  Topics in Biometry (3)
STAT 682  Pattern Recognition and Cluster Analysis (3)
STAT 683  Group Representation in Probability and Statistics (3)
STAT 684  Linear Models and Categorical Data Analysis (3)
STAT 685  Spatial Statistic (3)
STAT 686  Introduction to Theory of Semigroups of Linear Operators (3)
STAT 687  Advanced Topics Applied Statistics (3)
STAT 800  Thesis

UNIV (University Courses)

UNIV 111  The Sustainable Environment (3)
UNIV 113  Technological Disasters and Catastrophes (3)
UNIV 117  The Evolution Wars (3)
UNIV 118  The Classic of Changes in Asian and World Culture (3)
UNIV 119  Advances in Biotechnology: Science Fact and Fiction (3)
UNIV 120  The Physics and Metaphysics of Time Travel (3)
UNIV 121  The Idea of the Modern (3)
UNIV 200  Introduction to the Environment (3)
UNIV 300  Introduction to the Environment (3)
UNIV 302  Communication, Cognition, and Culture (3)
UNIV 303  Environmental Issues: Rice Into the Future (3)
UNIV 309  Creating and Managing Change: Principles of Leadership (3)
UNIV 310  Creating and Managing Change: from Theory to Action (3)
UNIV 313  Entrepreneurial Leadership (1)
UNIV 314  Genetics: Biological, Culture-Historical, and Ethical Perspectives (3)
UNIV 321  Cross-Cultural Awareness: Cultures of the United States (1)
UNIV 322  Cross-Cultural Awareness: Cultures of the World (1)
UNIV 323  Cross-Cultural Awareness: Rice International (1)

THEA (Theatre)

The School of Humanities / Department of English

THEA 100  Stagecraft (3)
THEA 101  Stagecraft II: Emphasis on Costume (3)
THEA 300  Introduction to Theatre Design (3)
THEA 301  Acting I (3)
THEA 302  Acting II (3)
THEA 303  Introduction to Theatre
THEA 304  Costume Design (3)
THEA 305  Lighting Design (3)
THEA 306  Scenic Design (3)
THEA 307  History of Architecture, Interiors, and Costume for Designers (3)
THEA 310  Acting III: The Spoken Text (3)
THEA 311  Acting IV: Tackling the Masters (3)
THEA 312  Fundamentals of Directing (3)
THEA 329  Special Problems: Technical, Production
THEA 330  Survey of Contemporary American Drama: 1960–Present (3)
THEA 431  Special Problems: History, Literature
THEA 432  Special Problems: Design, Directing
THEA 435  Special Problems: Advanced Topics

TIBT (Tibetan)

The School of Humanities / Center for the Study of Languages

TIBT 330  Introduction to Tibetan Language (3)

WGST (Program for the Study of Women and Gender)

The School of Social Sciences

WGST 101  Introduction to the Study of Women and Gender (3)
WGST 117  The Language of Love: Amorous Expression the French Tradition (3)
WGST 201  Introduction to Lesbian, Gay, Bisexual and Transgender Studies (3)
WGST 210  Islam and Politics (3)
WGST 214  Introduction to Women’s History
WGST 215  Women and Gender in Modern England (3)
WGST 220  Gendered Perspectives on the Law (3)
WGST 225  Women in Greece and Rome (3)
WGST 232  Engendering American Democracy: The History of the Right to Vote (3)
WGST 233  The Female Body in Contemporary Culture (3)
WGST 234  U.S. Women’s History I: Colonial Beginnings–The Civil War (3)
WGST 235  U.S. Women’s History II: The Civil War–Present (3)
WGST 237  Gender and Politics in European History (3)
WGST 240  Gender and Politicized Religion (3)
WGST 249  Women Writers: 1400–1900 (3)
WGST 250  International Political Economy of Gender (3)
WGST 283  Women and Gender in the Islamic World (3)
WGST 299  Women in Chinese Literature (3)
WGST 300  Medieval Women Writers (3)
WGST 301  Arthurian Literature (3)
WGST 305  Chaucer and the Subversive Other (3)
WGST 310  Problems in Literary History (3)
WGST 311  Society and the Sexes in Modern France (3)
WGST 312  Survey of Old English Literature: Gender and Power in Old English (3)
WGST 314  Introduction to Women’s History (enriched version) (3)
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Administration

President ................................................................. Malcolm Gillis
Assistant to the President ........................................... Mark Scheid
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Vice Provost for Research and Graduate Studies .............. Jordan Konisky
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Vice President and Chief Information Officer ............. TBN
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Dean of the George R. Brown School of Engineering .... C. Sidney Burrus
Dean of the Shepherd School of Music (Interim) .......... Anne Schnoebelen
Dean of the School of Architecture ......................... Lars Lerup
Dean of the Wiess School of Natural Sciences .......... Kathleen S. Matthews
Dean of the School of Continuing Studies .............. Mary B. McIntire
Dean of the School of Social Sciences ................. Robert Stein
Dean of the Jesse H. Jones Graduate School of Management .................................... Gilbert R. Whitaker, Jr.

Administrative Offices

Academic Advising ................................................. John Hutchinson
Administrative Systems ......................................... Randy Castiglioni
Admission ............................................................ Julie Browning
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Career Services ...................................................... Cheryl Matherly
Cashier’s Office ..................................................... Patricia C. Ciampi
Community Involvement Center ......................... Heather Syrett
Controller’s Office ................................................. Evelyn Stewart
Counseling Center ................................................ Lindley Doran
Delivery Services .................................................. Pat Kambhu
Disability Support Services ................................ Jean Ashmore
Distributed Systems and LAN Management ............. Vicky Dean
Educational Outreach .......................................... Roland Smith
Educational Technology ......................................... William Deigaard

Emergency Medical Service (EMS) ...................................... Bill Taylor
Enrollment: Administration .................................... Barry McFarland
Enterprise Systems and Applications ....................... Andrea Martin
Environmental Health and Safety .......................... Kathryn Cavender
Events Office ......................................................... Lauren Linn
Facilities and Engineering ...................................... Bill Mack
General Counsel .................................................... TBN
Health Education Office ......................................... Kimberly Lopez
Housing and Dining ................................................ Mark Ditman
Human Resources ....................................................... Mary A. Cronin
Information Technology .......................................... TBN
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International Students and Scholars ......................... Adria Baker
Intramural Sports ...................................................... Tina Villard
KTRU General Manager ........................................... Will Robedee
Language Resource Center ..................................... Claire Bartlett
Leadership Rice ...................................................... Susan A. Lieberman
Media Relations and Information ......................... Margot Dimond
Multicultural Affairs ............................................... Catherine E. Clack
Networking ............................................................. William Deigaard
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Police Department (RUPD) ......................................... Bill Taylor
President’s Office ..................................................... Mark Scheid
Provost’s Office ......................................................... Colleen Morimoto
Public Affairs ........................................................ Roberta Kelley Henderson
Registrar’s Office ....................................................... Jerry Montag
Research and Graduate Studies ......................... Debra Purtee
Sponsored Research ................................................ Jean E. Vorhaben
Student Activities ...................................................... Ramona Hicks
Student Affairs ......................................................... John Hutchinson
Student and Recreation Center .......................... Boyd Beckwith
Student Financial Services ...................................... Julia Benz
Student Health Services ....................................... Mark Jenkins, M.D.
Student Judicial Programs ....................................... Patricia Bass
Study/Education Abroad .......................................... Shannon Cates, Cheryl Matherly
Transportation Office ............................................. Eugen Radulescu
University Relations ............................................... Greg Marshall

College Masters

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Brown College ...................................................... Albert Pope and Kathryn Brunner
Hanszen College ................................................... Klaus and Eugenia Weissenberger
Jones College ....................................................... Robin Forman and Ann Owens
Lovett College ....................................................... John Casbarian and Natalye Appel
Martel College ......................................................... Arthur and Joan Few
Richardson College ............................................... Steve and Laura Cox
Wiess College ........................................................ Katharine Donato and Daniel Kalb
Will Rice College .................................................... Joel and Traci Wolfe
Emeritus Faculty

B.S. (1943) Texas Technological College; M.S. (1944) University of Texas at Austin;
Ph.D. (1950) University of Michigan

B.S.C.E. (1951), M.S. (1954) University of Arkansas; Ph.D. (1964) University of California at Berkeley


Awapara, Jorge, 1957–84. Professor Emeritus of Biochemistry
B.S. (1950) University of California, Berkeley; M.S. (1951) Michigan State University;
Ph.D. (1955) University of Southern California

B.A. (1955) University of Colorado; M.B.A. (1959) Harvard Graduate School of Business Administration

Baker, Donald Roy, 1966. Professor Emeritus of Geology and Honorary Associate of Brown College

Bale, Allen M., 1947–78. Athletic Director Emeritus
B.S. (1930) Rice Institute; M.A. (1939) Columbia University

Bally, Albert W., 1981–96. Harry Carothers Wiess Professor Emeritus of Geology
Ph.D. (1953) University of Zurich, Switzerland

Barker, J. R., 1949–86. Professor Emeritus of Health and Physical Education
B.S. (1949) Rice Institute; M.Ed. (1954) University of Texas at Austin


B.S. (1955) University of Minnesota; M.A. (1956) University of Wisconsin at Madison

Beckman, Edward R., 1957–86. Professor Emeritus of Materials Science
B.S. (1956) Massachusetts Institute of Technology; Ph.D. (1961) University of Pennsylvania

B.S. (1949) University of Illinois; M.S. (1950) University of Kansas; Ph.D. (1954) University of California at Berkeley


B.S. (1955) Texas Technological College; S.M.E.E. (1957) Massachusetts Institute of Technology

B.A. (1960), M.A. (1961) Texas Christian University; Ph.D. (1965) University of Texas at Austin

Brotzen, Franz Richard, 1954–86. Stanley C. Moore Professor Emeritus of Materials Science
B.S. (1950), M.S. (1953), Ph.D. (1954) Case Institute of Technology

Brown, Katherine Tsoff, 1963–89. Professor Emerita of Art History and Honorary Associate of Will Rice College
B.A. (1938) Rice Institute; M.F.A. (1940) Cornell University

Burt, George, 1984–97. Professor Emeritus of Theory and Composition


B.S. (1953) Southwest Missouri State University; M.S. (1955) University of Illinois; Ph.D. (1958) University of Oklahoma

Cason, Carolyn, 1956–74. Lecturer Emerita in Dietetics
B.S. (1934) University of Texas at Austin; M.A. (1939) Columbia University

Chamberlain, Joseph W., 1971–90. Professor Emeritus of Space Physics and Astronomy
A.B. (1948), A.M. (1949) University of Missouri; M.S. (1951), Ph.D. (1952) University of Michigan

Chapman, Alan Jesse, 1946–95. Harry S. Cameron Professor Emeritus of Mechanical Engineering
B.S.M.E. (1945) Rice Institute; M.S. (1949) University of Colorado; Ph.D. (1953) University of Illinois

Cheatham, Jr., John Bane, 1963–96. Professor Emeritus of Mechanical Engineering
B.S. (1948), M.S. (1953) Southern Methodist University; Ph.D. (1960) Rice University


Class, Calvin M., 1952–85. Professor Emeritus of Physics
A.B. (1943), Ph.D. (1951) John Hopkins University


B.S. (1959) Instituto Nacional del Profesorado en Lenguas Vivas, Argentina;

Davis, Jr., Sam H., 1957–2000. Professor Emeritus in Chemical Engineering and Computational and Applied Mathematics

De Bremo, Jean-Claude, 1959–94. Professor Emeritus of Earth Science
B.A. (1935) University of Louvain, Belgium; M.S. (1950) Louisiana State University; Ph.D. (1952) University of California at Berkeley

B.S. (1962); M.S. (1965) University of Miami; Ph.D. (1966) University of Utah

B.S. (1952) California Institute of Technology; Ph.D. (1956) Duke University


Drew, Katherine Fischer, 1950–96. Lynette S. Autrey Professor Emerita of History

Eyres, Derek C., 1966–2000. Professor Emeritus of Chemical Engineering

Estle, Thomas L., 1967–96. Professor Emeritus of Physics

B.A. (1938) Oklahoma State University; M.F.A. (1954) Yale University

Fliegel, Ralph A., 1975–89. Professor Emeritus of Violin

Freeman, John W., 1964–2000. Professor Emeritus of Space Physics and Astronomy and Associate of Lovett College
B.S. (1957) Beloit College; M.S. (1961); Ph.D. (1963) University of Iowa

Ph.D. (1953) Princeton University

Gordon, Chad, 1970–99. Professor Emeritus of Sociology


Hacker, Norman, 1970–85. President Emeritus and Distinguished Professor Emeritus of Chemistry  
A.B. (1932), Ph.D. (1935) Johns Hopkins University

Hake, Evelyn, 1932–74. Lecturer Emerita in Biology  
B.A. (1930), M.A. (1932) Rice Institute

Hale, Elton B., 1963–79. Professor Emeritus of Accounting  
B.S. (1937), M.A. (1940) Southwest Texas State Teachers College; Ph.D. (1948) University of Texas at Austin

Han, Ingrid, 1987–2000. Lecturer Emerita of Spanish and Interim Resident Associate of Baker College  


Haynes, Robert C., 1968–98. Professor Emeritus of Space Physics and Astronomy  

Hellums, Jesse David, 1960–98. A. J. Hartsough Professor Emeritus of Chemical Engineering  
B.S. (1950), M.S. (1958) University of Texas at Austin; Ph.D. (1961) University of Michigan

Heymann, Dieter, 1966–98. Professor Emeritus of Earth Science  
M.S. (1954), Ph.D. (1958) University of Amsterdam, The Netherlands

Hightower, Joe W., 1967–91. Professor Emeritus of Chemical Engineering  

Hodges, Lee, 1930–71. Professor Emeritus of French  
B.S. (1930) Harvard University; M.A. (1934) Rice Institute

B.S. (1940), S.M. (1947) Massachusetts Institute of Technology; Ph.D. (1956) Pennsylvania State University

Huddle, Donald L., 1964–92. Professor Emeritus of Economics  

B.A. (1948) University of California at Los Angeles; M.A. (1950); Ph.D. (1952) Columbia University

Jitcoff, Andrew N., 1950–72. Professor Emeritus of Russian  
Bachelor (1928), Master (1931) Prague Institute of Technology, Czechoslovakia


Kiperman, Anita, 1976–98. Lecturer Emerita of Spanish  

Kohayashi, Riki, 1951–97. Louis Calder Professor Emeritus in Chemical Engineering  
B.S. (1944) Rice Institute; M.S.E. (1947), Ph.D. (1951) University of Michigan


Leal, Maria Teresa, 1965–96. Professor Emerita of Spanish and Portuguese  
B.A. (1946) Pontificia Universidad Católica, Brazil; Ph.D. (1963) Universidade Federal de Rio de Janeiro, Brazil

Leccuyer, Maurice Antoine, 1962–79. Professor Emeritus of French  
Baccalauréat es lettres (1937), Licence es lettres (1943), Diplôme d’études supérieures (1944) Université de Paris, France; Ph.D. (1954) Yale University


Leeds, Jr., J. Venn, 1964–89. Professor Emeritus of Electrical and Computer Engineering  

Lewis, Edward S., 1948–90. Professor Emeritus of Chemistry  
B.S. (1940) University of California at Berkeley; Ph.D. (1947) Harvard University

Meixner, John, 1968–95. Professor Emeritus of English  

Merwin, John E., 1955–98. Professor Emeritus of Civil and Environmental Engineering  


Miele, Angelo, 1964–93. Foyt Family Professor Emeritus in Mechanical Engineering and Materials Science and Computational and Applied Mathematics  
Dr. C.E. (1944), Dr. A.E. (1946) University of Rome

Milburn, Ellsworth, 1975–99. Professor Emeritus of Composition and Theory  
B.A. (1962) University of California at Los Angeles; M.A. (1968) Mills College; D.M.A. College-Conservatory of Music, University of Cincinnati


Morehead, Jr., James Caddell, 1940–79. Professor Emeritus of Architecture and Honorary Associate of Baker College  
A.B. (1935) Princeton University; B.Arch. (1939) Carnegie Institute of Technology

Nielsen, Jr., Niels C., 1951–91. Professor Emeritus of Philosophy and Religious Thought and Honorary Associate of Will Rice College  
B.A. (1942) George Pepperdine University; B.D. (1946), Ph.D. (1951) Yale University

B.S. (1957), M.S. (1958) University of Michigan; Ph.D. (1962) University of California at Berkeley

O’Dell, Charles Robert, 1982–2000. Andrew Hays Buchanan Professor Emeritus of Astrophysics  
B.S.Ed. (1959) Illinois State University; Ph.D. (1962) University of Wisconsin at Madison

Oliver, Covey, 1979–81. Radoslav A. Tsanoff Professor Emeritus of Public Affairs  

Oliver-Smith, Philip, 1969–82. Professor Emeritus of Art History  


B.S. (1957), Ph.D. (1962) University of Sheffield

Parsons, David G., 1953–81. Professor Emeritus of Art and Honorary Associate of Will Rice College  
B.S. (1934), M.S. (1937) University of Wisconsin

B.S.E.E. (1958), M.S.E.E. (1959) University of Arkansas; Ph.D. (1962) Purdue University

Pfeiffer, Paul E., 1947–97. Professor Emeritus of Computational and Applied Mathematics  
B.S.E.E. (1938) Rice Institute; B.D. (1943) Southern Methodist University; M.S.E.E. (1948), Ph.D. (1952) Rice Institute

Philpott, Charles William, 1964–96. Professor Emeritus of Ecology and Evolutionary Biology  
B.A. (1957), M.S. (1958) Texas Technological College; Ph.D. (1962) Tulane University

B.A. (1951) Harvard University; M.A. (1952) Columbia University; Ph.D. (1958) University of Wisconsin at Madison

B.A. (1951) Harvard University; M.A. (1952) Columbia University; Ph.D. (1958) University of Wisconsin at Madison
Poindexter, Hally Beth W., 1965–98. Professor Emeritus of Kinesiology

Raaphorst, Madeleine Rousseau, 1963–89. Professor Emerita of French
Baccalauréat es lettres (1939) Université de Poitiers, France; Licence en droit (1943) Université de Paris, France; Ph.D. (1959) Rice Institute


Rachford, Jr., Henry H., 1964–82. Professor Emeritus of Mathematical Sciences

B.Arch. (1947) Carnegie Institute of Technology; M.Arch. (1947) Texas A&M University


Risser, J. R., 1946–81. Professor Emeritus of Physics

Sims, James R., 1942–87. Herman and George R. Brown Professor Emeritus of Civil and Environmental Engineering
B.S. (1941) Rice Institute; M.S. (1945), Ph.D. (1946) University of Illinois


Stebbins, Ronald F., 1968–95. Professor Emeritus of Space Physics and Astronomy
B.Sc. (1952), Ph.D. (1956) University College, London

Stormer, Jr., John C., 1983–95. Croneis Professor Emeritus of Geology


Trammell, George T., 1961–93. Professor Emeritus of Physics
B.A. (1944) Rice Institute; Ph.D. (1950) Cornell University

Trepel, Shirley, 1975–94. Professor Emerita of Violoncello
B.Mus. (1945) Curtis Institute of Music

Profesorado (1956) La Plata National University, Argentina; Ph.D. (1968) Stanford University

A.B. (1952) Dartmouth College; M.S. (1953), Ph.D. (1959) Northwestern University


B.A. (1948) University of the Pacific; M.A. (1950) Claremont Graduate School; Ph.D. (1957) University of California at Berkeley

Wadsworth, Philip A., 1964–73. Professor Emeritus of French
A.B. (1935), Ph.D. (1939) Yale University

B.S. (1943) Rice Institute; M.A. (1949), Ph.D. (1952) University of Texas at Austin

Wall, Frederick T., 1972–79. Professor Emeritus of Chemistry
B.C. (1933), Ph.D. (1937) University of Minnesota

Walters, G. King, 1963–99. Sam and Helen Worden Professor Emeritus of Physics

B.S. (1959) National Taiwan University; Ph.D. (1965) Johns Hopkins University


Wilhoit, Jr., James Cannon, 1954–81. Professor Emeritus of Mechanical Engineering and Mathematical Sciences
B.S.M.E. (1948) Rice Institute; M.S. (1951) Texas A&M University; Ph.D. (1954) Stanford University

Wilson, Joseph B., 1954–98. Professor Emeritus of German

Winkler, Michael, 1967–2000. Professor Emeritus of German


Faculty

Aazhang, Behnaam, 1985. J.S. Abercrombie Professor in Electrical and Computer Engineering

Ahb, Roberto, 2001. Adjunct Professor of Executive Education

Abreu, Vitor dos Santos, 2000. Adjunct Assistant Professor of Earth Science

Achard, Michel, 1997. Associate Professor of French Studies

Adam, Gwendolyn, 2000. Lecturer of Kinesiology

Adams, Andrew, 2002. Adjunct Professor of Management

Adnan, Sarmad, 2001. Adjunct Assistant Professor of Mechanical Engineering and Materials Science

Ainsworth, Anne-Marie, 2001. Adjunct Professor of Executive Education

Akin, John Edward, 1983. Professor of Mechanical Engineering and Computational and Applied Mathematics
B.S. (1964) Tennessee Polytechnic Institute; M.S. (1966) Tennessee Technological University; Ph.D. (1968) Virginia Polytechnic Institute

Albin, Verónica S., 1998. Lecturer of Spanish

Alekov, Madeleine, 1975. Professor of French
Licence de lettres modernes (1962), Diplôme d’études supérieures (1963), Doctorat de 3e cycle (1965) France

Alemany, Lawrence B., 1994. Lecturer on Chemistry

Alford, John R., 1985. Associate Professor of Political Science
Allen, Paul S., 1998. Adjunct Professor in the Practice of Management 

Alsop, Michael, 2001. Adjunct Professor of Management 
B.A. (1973) Rice University; M.B.A. (1976) University of Texas, Austin

Alvarez, María A., 2000. Lecturer of Spanish 

Al-Zand, Karim, 2002. Assistant Professor of Composition and Theory 

Amlbler, John S., 1964. Professor of Political Science 

Ambrose, Catherine, 1996. Visiting Assistant Professor in Mechanical Engineering and Materials Science 

Anderson, John B., 1975. W. Maurice Ewing Professor of Oceanography and Professor of Earth Science 
B.S. (1968) University of South Alabama; M.S. (1970) University of New Mexico; Ph.D. (1972) Florida State University

Anderson, Shannon, 2001. Associate Professor of Management 

Anding, Roberta H., 1997. Lecturer of Kinesiology 

Anotolas, Athanasios C., 1985. Professor in Electrical and Computer Engineering 
Dip. in Electrical Engineering (1975), Dip. in Mathematics (1975), Ph.D. (1980) Eidgenössische Technische Hochschule, Switzerland

Anvari, Bahman, 1998. Assistant Professor in Bioengineering 

Aranda, Jr., José F., 1994. Associate Professor of English 

Aresu, Bernard, 1977. Professor of French Studies 
Licence es lettres (1967) Université de Montpellier, France; Ph.D. (1975) University of Washington

Armeniades, Constantine D., 1969. Professor in Chemical Engineering 

Arpaly, Nomy, 1999. Assistant Professor of Philosophy 

Ashmore, Jean, 2002. Lecturer in Education Certification 
B.A. (1973) University of California at Los Angeles; M.S. (1976) California State University

Athanasious, Kyriacos, 2000. Professor of Bioengineering 

Atherholdt, Robert, 1984. Associate Professor of Oboe 
B.Mus. (1976), M.Mus. (1977) Juilliard School of Music

Atherton, Jr., W. Clifford, 1988. Lecturer on Management 

Atkinson, E. Neely, 1985. Adjunct Associate Professor of Statistics 

Attieh, Aman, 2001. Senior Lecturer of Arabic 

Audet, Charles, 2001. Adjunct Assistant Professor of Computational and Applied Mathematics 

Austgen, David M., 1997. Lecturer on Management 

Avé Lallement, Hans G., 1970. Professor of Earth Science 

Bachevalier, Jocelyne, 1994. Adjunct Associate Professor of Psychology 

Badgwell, Thomas A., 2000. Adjunct Associate Professor in Chemical Engineering 

Baggett, L. Scott, 1999. Lecturer on Statistics 

Bagoozi, Richard P., 1999. J. Hugh Liedtke Professor of Management and Professor of Psychology 

Bailey, Nancy Gisbrecht, 1997. Lecturer on Vocal Literature 

Bailey, Walter B., 1982. Associate Professor of Musicology 


Baker, Lovett, 1986. Lecturer on Management 
A.B. (1952) Princeton University

Baker, Stephen D., 1963. Professor of Physics and Astronomy and Honorary Associate of Hanszen College 

Banks, Stephen J., 1991. Adjunct Professor in the Practice of Management 

Barnaniuk, Richard G., 1992. Professor in Electrical and Computer Engineering and Associate of Hanszen College 

Baring, Matthew G., 2000. Assistant Professor of Physics and Astronomy 

Barland, Ian, 1996. Lecturer on Computer Science 

Barlow, Michael, 1993. Assistant Professor of Linguistics and Associate of Sid Richardson College 

Barnett, Gregory, 2002. Assistant Professor of Musicology 

Barrera, Enrique V., 1990. Associate Professor of Mechanical Engineering and Materials Science 

Barrett, Deborah, 1998. Director and Instructor of Management Communications 

Barron, Andrew R., 1995. Charles W. Duncan, Jr.–Welch Professor of Chemistry and Professor of Materials Science 
B.S. (1983), Ph.D. (1986) Imperial College of Science and Technology, University of London

Barry, Michael A., 1998. Assistant Professor in Bioengineering 

Bartel, Bonnie, 1995. Associate Professor of Biochemistry and Cell Biology 
Barton, Richard, 2001. Adjunct Assistant Professor of Electrical and Computer Engineering

Bartusiak, R. Donald, 2000. Adjunct Assistant Professor in Chemical Engineering

Batsell, Richard R., 1980. Jesse H. Jones Distinguished Associate Professor of Management and Associate Professor of Psychology

Bayazitoglu, Yildiz, 1977. Harry S. Cameron Professor in Mechanical Engineering

Beacon-Armendarez, Beth, 2001. Lecturer of Biochemistry and Cell Biology

Beckingham, Kathleen M., 1980. Professor of Biochemistry and Cell Biology

Bedient, Philip B., 1975. Herman Brown Professor of Engineering

Bedner, J. Bee, 1997. Adjunct Professor in Computational and Applied Mathematics
B.S. (1962) Southwest Texas State University; M.A. (1964), Ph.D. (1968) University of Texas at Austin

Begley, Charles E., 1989. Adjunct Associate Professor of Economics

Behar, Victor, 1998. Assistant Professor of Chemistry

Behr, Marek, 1999. Assistant Professor in Mechanical Engineering and Materials Science

Bennett, George N., 1975. Professor of Philosophy
B.S. (1968) University of Nebraska; Ph.D. (1974) Purdue University

Berman, Eli, 2001. Associate Professor of Economics

Berry, Donald, 2000. Adjunct Professor of Statistics

Bidani, Akhil, 1994. Adjunct Professor in Electrical and Computer Engineering
B.S. (1969) Punjab University, India; Ph.D. (1975) University of Houston; M.D. (1981) University of Texas Medical Branch at Galveston

Billups, W. Edward, 1970. Professor of Chemistry

Biln, Karma Singh (John), 1999. Associate Professor of Architecture

Bissada, K. K., 1996. Adjunct Professor of Earth Science

Bixby, Robert E., 1984. Research Professor in Computational and Applied Mathematics

Black, David C., 1970. Adjunct Professor of Physics and Astronomy

Black, Earl, 1993. Herbert S. Autrey Professor of Political Science
B.A. (1964) University of Texas at Austin; Ph.D. (1968) Harvard University

Blackburn, James B., 1975. Lecturer on Environmental Science

Bloem, Suzana Maria Campos Pinto, 1999. Lecturer of Portuguese
B.A. (1970) Pontifícia Universidade Católica de Campinas, Brazil

Bobrowski, Adam, 2000. Adjunct Lecturer on Statistics
M.S. (1988) Institute of Mathematics of the Maria Curie-Skłodowska University; Ph.D. (1994) Polish Academy of Sciences

Bohoradnaia, Anna, 2000. Assistant Professor of Economics

Boles, John B., 1981. William Pettus Hobby Professor of History and Associate of Will Rice College
B.A. (1965) Rice University; Ph.D. (1969) University of Virginia

Bongmba, Elias K., 1995. Associate Professor of Religious Studies

Bonner, Billy E., 1985. Professor of Physics and Astronomy and Director of T.W. Bonner Nuclear Lab

Boom, Marc L., 2000. Adjunct Professor in the Practice of Management

Boocca, Liliana, 1996. Associate Professor of Computational and Applied Mathematics

Bordeaux, Janice, 1994. Lecturer of Psychology

Bordelon, Jr., Cassius B., 1972. Lecturer in Kinesiology
B.S. (1964) Louisiana State University; Ph.D. (1972) Baylor College of Medicine

Borick, Aladin M., 1997. Adjunct Assistant Professor in Computational and Applied Mathematics and Mechanical Engineering and Materials Science

Boshernitzan, Michael, 1982. Professor of Mathematics

Bottero, Jean-Yves, 1996. Adjunct Professor of Civil and Environmental Engineering
Docteur d'Etat es Sciences Physiques (1979) Université de Nancy, France

Braam, Janet, 1990. Associate Professor of Biochemistry and Cell Biology
B.S. (1980) Southern Illinois University; Ph.D. (1985) Sloan-Kettering Division of Cornell Graduate School of Medical Sciences

Brace, Paul, 1996. Clarence L. Carter Professor of Political Science

Brandt, Anthony K., 1998. Assistant Professor of Composition

Branton, Regina, 2000. Assistant Professor of Political Science

Brennan, Marcia, 2001. Assistant Professor of Art and Art History

Brito, Dagobert L., 1984. George A. Petterkin Professor of Political Economy

Brody, Baruch, 1975. Professor of Philosophy

Brodogómez, N. Patricía, 2000. Lecturer of Spanish

Broker, Karin L., 1980. Professor of Art

Brooks, Philip R., 1964. Professor of Chemistry
B.S. (1960) California Institute of Technology; Ph.D. (1964) University of California at Berkeley

Brown, Barry W., 1970. Adjunct Professor of Statistics

Brown, David, 1996. Assistant Professor of Architecture

Brown, James N., 1992. Professor of Economics

Brown, Richard, 1984. Professor of Percussion

Brownell, William, 2000. Adjunct Professor in Bioengineering
S.B. (1968), Ph.D. (1973) University of Chicago

Browning, Logan D., 1990. Lecturer in Humanities

Bryan, William J., 1982. Adjunct Professor in Kinesiology
B.A. (1971) Johns Hopkins University; M.D. (1975) Baylor College of Medicine

Bryant, John B., 1981. Henry S. Fox, Sr., Professor of Economics and Professor of Management

Burch, James L., 1990. Adjunct Professor of Physics and Astronomy
B.S. (1964) St. Mary’s University; Ph.D. (1968) Rice University; M.S.A. (1973) George Washington University

Burnett, Sarah A., 1972. Associate Professor of Psychology

Burrows, C. Sidney, 1965. Dean of the George R. Brown School of Engineering, Maxfield and Oshman Professor of Engineering, and Honorary Associate of Will Rice College

Buyse, Leone, 1997. Professor of Flute

Byrd, Alexander, 2001. Assistant Professor of History and Associate of Baker College

Byrne, John H., 1994. Adjunct Professor of Physics and Astronomy

Byrne, Michael, 1999. Assistant Professor of Psychology

Calderwood, Peter C., 1994. Associate Professor of History and German and Slavic Studies

Camacho, Zenaido, 1994. Vice President for Student Affairs and Professor of Biochemistry and Cell Biology
B.A. (1966) Baylor University; Ph.D. (1970) University of Texas at Austin

Cannady, William Tillman, 1964. Professor of Architecture
B.Arch. (1961) University of California at Berkeley; M.Arch. (1962) Harvard University

Capretti, David R., 1992. Lecturer on Biochemistry and Cell Biology

Carle, Alan, 1998. Faculty Fellow in Computational and Applied Mathematics

Carroll, Beverlee Jill, 1995. Lecturer in Humanities


Carter, Richard, 1997. Adjunct Associate Professor of Computational and Applied Mathematics
B.S. (1979) Mississippi State University; Ph.D. (1986) Rice University

Cartwright, Jr., Robert S., 1980. Professor of Computer Science

Casas, Fernando, 1994. Lecturer in Humanities

Caspian, John Joseph, 1973. Associate Dean of the School of Architecture and Professor of Architecture and Lovett College Master

Castaneda, James Agustin, 1961. Professor of Spanish, and Honorary Master of Will Rice College

Cavallaro, Joseph R., 1988. Professor in Electrical and Computer Engineering and Computer Science

Chae, Suchan, 1985. Associate Professor of Economics

Chan, Anthony A., 1993. Associate Professor of Physics and Astronomy

Chance, Jane, 1973. Professor of English

Chang, David W., 2002. Adjunct Associate Professor in Bioengineering

Chang, Yoosoon, 1995. Associate Professor of Economics

Chang-Diaz, Franklin R., 1998. Adjunct Professor of Physics and Astronomy
B.S. (1973) University of Connecticut; Ph.D. (1977) Massachusetts Institute of Technology

Chapman, Walter G., 1990. Professor in Chemical Engineering

Chen, Denise, 2002. Assistant Professor of Psychology


Chen, Shih-Hui, 2000. Assistant Professor of Composition and Theory

Chen, Xiaohong Denise, 2001. Assistant Professor of Psychology

Choi, Hyeokho, 2000. Faculty Fellow in Electrical and Computer Engineering

Citron, Marcia J., 1976. Martha and Henry Malcolm Lovett Distinguished Service Professor of Musicology

Ciufohini, Marco A., 2002. Adjunct Professor of Chemistry

Clark, Jr., John W., 1968. Professor in Electrical and Computer Engineering and Bioengineering

Clayton, Donald D., 1994. Lecturer on Management

Clementi, Cecilia, 2001. Assistant Professor of Chemistry

Cloutier, Paul A., 1967. Professor of Physics and Astronomy
B.S. (1964) University of Western Connecticut; Ph.D. (1967) Rice University
Cochran, Tim D., 1990. Professor of Mathematics

Colbert, Daniel T., 1997. Faculty Fellow in Chemistry

Collis, S. Scott, 1997. Associate Professor in Mechanical Engineering and Materials Science

Colvin, Vicki L., 1996. Associate Professor of Chemistry

Comer, Krista, 1988. Assistant Professor of English

Connelly, Brian, 1984. Artist Teacher of Piano

Cook, David, 2001. Assistant Professor of Religious Studies

Cooper, Keith D., 1990. Professor of Computer Science and in Electrical and Computer Engineering

Coppola, Eileen, 2000. Lecturer on Education Certification

Corcoran, Marjorie D., 1980. Professor of Physics and Astronomy
B.S. (1972) University of Dayton; Ph.D. (1977) Indiana University

Cordoba, Juan Carlos, 2001. Assistant Professor of Economics

Cox, Alan L., 1991. Associate Professor of Computer Science and in Electrical and Computer Engineering

Cox, Dennis, 1992. Professor of Statistics

Cox, Edward L., 1989. Associate Professor of History and Associate of Martel College

Cox, Kenneth R., 2000. Lecturer on Chemical Engineering

Cox, Steven J., 1988. Professor of Computational and Applied Mathematics and Master of Sid Richardson College

Cramer, Ervin Joyce, 1997. Adjunct Professor in Computational and Applied Mathematics

Cramez, Carlos A., 1988. Adjunct Professor of Earth Science
B.S. (1960) Universite de Porto; Ph.D. (1966) Universite de Neuchatel

Crist, E. Scott, 2000. Lecturer of Management

Crowell, Steven G., 1983. Professor of Philosophy and German and Slavic Studies

Crull, Brigitte, 1999. Lecturer of French
M.A. (1991) University of Houston

Cunningham, Robert A., 1986. Lecturer on Mechanical Engineering and Materials Science

Curl, Jr., Robert F., 1958. Harry C. and Olga K. Wiess Professor of Natural Sciences and Professor of Chemistry
B.A. (1954) Rice Institute; Ph.D. (1957) University of California at Berkeley

Currell, Cheyenne, 2002. Adjunct Professor of Management

Currell, Steven C., 1993. William and Stephanie Sick Chair in Entrepreneurship and Associate Professor of Management, Psychology, and Statistics

Cuthbertson, Gilbert Morris, 1963. Professor of Political Science
B.A. (1959) University of Kansas; Ph.D. (1963) Harvard University

Cutler, Scott E., 2001. Adjunct Professor of Electrical and Computer Engineering

Dabney, James B., 2000. Adjunct Assistant Professor in Mechanical Engineering and Materials Science

Daley, Michele J. 1994. Lecturer of Management and Associate Director of Academic Advising

Danle, Kedar, 2002. Assistant Professor of Physics and Astronomy

Danbom, Stephen, 2001. Adjunct Professor of Earth Science

Datta, Evelyne D., 1987. Senior Lecturer of French
M.A. (1979) University of Houston; Ph.D. (1987) Rice University; Maîtrise de Philologie romane (1996) University of Ghent (Belgium)

Davidson, Chandler, 1966. Radovan Tsenoff Professor of Public Affairs and Professor of Sociology and of Political Science

Davis, Philip W., 1969, Agnes Cullen Arnold Professor of Linguistics
B.A. (1961) University of Texas at Austin; Ph.D. (1965) Cornell University

Dean, Nathaniel, 1998. Associate Professor of Computational and Applied Mathematics

deChambrier, Janet, 1997. Artist Teacher of Opera Studies

Deflebach, Nancy, 2002. Andrew W. Mellon Post Doctoral Fellow, Center for the Study of Cultures and Department of Art and Art History

DeLaura, Louis P., 1988. Lecturer of Architecture

DerHovsepian, Joan, 2001. Instructor of Viola Orchestral Repertoire

Derrick, Scott S., 1990. Associate Professor of English

Dharan, Bala G., 1992. Professor of Viola Orchestral Repertoire

Dhokia, Utpal, 2001. Assistant Professor of Management
Diaz-Saiz, Joaquin, 2000. Adjunct Associate Professor of Statistics

Dickens, Gerald R., 2001. Associate Professor of Earth Science

Dickinson, Debra, 1993. Artist Teacher of Opera Studies

Diddel, Roberta M., 1985. Adjunct Instructor of Psychology

Dietz, Elizabeth A., 2002. Assistant Professor of English

Dipoye, Robert, 1978. Professor of Psychology and Management
B.A. (1968) Baylor University; M.S. (1969), Ph.D. (1973) Purdue University

Disch, James G., 1973. Associate Professor of Kinesiology

Dixon, Marlene A., 2001. Lecturer in Kinesiology
B.A., Magna Cum Laude (1993) Trinity University; M.Ed (1998) University of Texas at Austin

Djerejian, Edward P., 1994. The Edward A. and Hermanna Hancock Kelly University Chair for Senior Scholars and the Janice and Robert McNair Director of the James A. Baker III Institute for Public Policy of Rice University
B.S. (1960), Doctor of Humanities (Hon.) (1992) Georgetown University

Do, Kim-Anh, 1999. Adjunct Associate Professor of Statistics

Dodd, Stanley A., 1977. Associate Professor of Physics and Astronomy and Associate of Wisconsion College
B.S. (1968) Harvey Mudd College; Ph.D. (1975) Cornell University

Dominey, Wallace, 1998. Adjunct Lecturer in Education

Donato, Katharine M., 2000. Associate Professor of Sociology and Master of Wisconsin College

Dongarra, Jack, 1988. Adjunct Professor in Computer Science and Computational and Applied Mathematics
B.S. (1972) Chicago State University; M.S. (1973) Illinois Institute of Technology; Ph.D. (1980) University of New Mexico

Doodly, Terrence Arthur, 1970. Professor of English

Doran, Lindley E., 1991. Adjunct Associate Professor of Psychology
Ph.D. (1976) University of Illinois

Dove, Charles, 2001. Visiting Lecturer of Art and Art History

Downs, Thomas D., 1971. Adjunct Professor of Statistics

Dravis, Jeffrey J., 1987. Adjunct Professor of Earth Science
B.S. (1975) St. Mary’s University; M.S. (1977) University of Miami; Ph.D. (1980) University of Miami

Drezek, Rebekah Anna, 2002. Assistant Professor in Bioengineering

Driskill, Linda P., 1970. Professor of English and Management Communications

Drozler, Andre W., 1987. Associate Professor of Earth Science
Diploma (1978) University of Neuchatel, Switzerland; Ph.D. (1984) University of Miami

Druschel, Peter, 1994. Associate Professor of Computer Science and in Electrical and Computer Engineering
Dipl.-Ing (1986) Fachhochschule, Germany; M.S. (1990), Ph.D. (1994) University of Arizona

Duck, Ian M., 1963. Professor of Physics and Astronomy
B.S. (1955) Queen’s University, Canada; Ph.D. (1961) California Institute of Technology

Dudey, Marc Peter, 1990. Associate Professor of Economics

Dufour, Reginald J., 1975. Professor of Physics and Astronomy

Dunbar, Robert B., 1981. Adjunct Professor of Earth Science
B.S. (1975) University of Texas at Austin; Ph.D. (1981) University of California at Berkeley

Dunham, James F., 2001. Professor of Viola and Chamber Music

Dunning, F. Barry, 1972. Sam and Helen Worden Professor of Physics and Astronomy

Durovich, Christopher J., 2000. Adjunct Professor of Management

Durrani, Ahmad J., 1982. Professor of Civil and Environmental Engineering

Eads, Rodney, 2001. Adjunct Professor of Executive Education

Eggert, Allen W., 1978. Lecturer in Kinesiology
B.S. (1963) Rice University; M.A. (1967) California Western University

Ehle, Margret, 1973. Professor of German and Slavic Studies

Eisner, Elmer, 1988. Adjunct Professor of Computational and Applied Mathematics
B.S. (1939) Brooklyn College; Ph.D. (1943) Johns Hopkins University

El-Bakry, Amr, 1998. Adjunct Associate Professor of Computational and Applied Mathematics

el-Dahdah, Fares, 1996. Assistant Professor of Architecture

Elden, J. Maxwell, 1988. Adjunct Professor of Psychology

El-Gamal, Mahmoud A., 1998. Professor of Islamic Economics, Finance, and Management and Professor of Economics and Professor of Statistics

Elliot, John F., 2000. Lecturer of Kinesiology and Director of Sport Management

Ellenwein, Sarah, 2000. Assistant Professor of English

Ellison, Paul V. H., 1975. Lynette S. Autrey Professor of Double Bass

Embree, Mark P., 2001. Assistant Professor of Computational and Applied Mathematics

Emerson, Michael O., 1999. Associate Professor of Sociology and Associate of Wiess College

Engel, Paul S., 1970. Professor of Chemistry
B.S. (1964) University of California at Los Angeles; Ph.D. (1968) Harvard University
Gibson, Quentin H., 1996. Distinguished Faculty Fellow in Biochemistry and Cell Biology
M.B. (1941), M.D. (1944), Ph.D. (1947) Queen’s University, Belfast

Gibson, Susan L., 1994. Associate Professor of Biochemistry and Cell Biology

Gilda, Spike, 2001. Adjunct Associate Professor of Linguistics

Giles, Wayne Rodney, 1988. Adjunct Professor of Electrical and Computer Engineering

Gill, Jack M., 1998. Adjunct Professor in the Practice of Management
B.S. (1958) Lamar University; Ph.D. (1962) Indiana University

Gillis, Malcolm, 1993. President and Ervin Kenneth Zingler Professor of Economics

Glantz, Raymon M., 1969. Professor of Biochemistry and Cell Biology

Glass, Graham P., 1967. Professor of Chemistry

Glober, Gary Alan, 2001. Lecturer of Management
B.A. (1957), M.D. (1962) University of California at Berkeley

Glowinski, Roland, 1986. Adjunct Professor of Computational and Applied Mathematics

Goldman, Ronald N., 1990. Professor of Computer Science
B.S. (1968) Massachusetts Institute of Technology; M.A., Ph.D. (1973) Johns Hopkins University

Goldsmith, Kenneth, 1991. Professor of Violin

Gomer, Richard H., 1988. Professor of Biochemistry and Cell Biology

González-Stephan, Beatriz, 2001. Adjunct Associate Professor of Economics

Gustin, Michael C., 1988. Associate Professor of Biochemistry and Cell Biology

Hacker, Carl S., 1973. Adjunct Associate Professor of Statistics
B.S. (1963) College of William and Mary; Ph.D. (1968) Rice University

Hafner, Jason H., 2001. Assistant Professor of Physics and Astronomy

Halas, Naomi J., 1989. Stanley C. Moore Professor in Electrical and Computer Engineering and Professor of Chemistry

Hale, Doyle, 2000. Assistant Professor of Naval Science

Hall, Rosine B. W., 1996. Adjunct Associate Professor of Ecology and Evolutionary Biology

Ham, Keith Edward, 1988. Professor of Political Science

Hampton, Lawrence P., 1999. Lecturer on Management
A.B. (1979) University of Chicago; J.D. (1985) Case Western Reserve University

Hanks, Milton, 1981. Lecturer on Civil and Environmental Engineering

Hamman, John K., 1991. Adjunct Associate Professor in the Practice of Management
B.A. (1975) Rice University; J.D. (1988) South Texas College of Law

Hannon, James P., 1967. Professor of Physics and Astronomy

Haque, Moven, 1988. Lecturer on Civil and Environmental Engineering

Harcombe, Elmore, 1989. Associate Director of the Center for Education, Director of the Model Science Laboratory Project, Adjunct Lecturer in Education Certification

Harron, Paul A., 1972. Professor of Ecollog and Evolutionary Biology
B.S. (1967) Michigan State University; Ph.D. (1973) Yale University

Haring, Robert M., 1988. W. L. Moody Professor of Mathematics

Harland, Peter W., 1989. Adjunct Professor of Chemistry
B.Sc. (1968) University of Wales, Aberystwyth; Ph.D. (1971) Edinburgh University

Harman, Thomas, 1988. Adjunct Professor in Electrical and Computer Engineering
B.S.E.E. (1965) University of Maryland; Ph.D. (1972) Rice University

Harrell, Lynn, 2002. Professor of Cello
L.H.D. (Hon.) (1994) Cleveland Institute of Music

Harris, Paul M. (Mitch), 2000. Adjunct Professor of Earth Science

Hartigan, Patrick M., 1994. Associate Professor of Physics and Astronomy

Hartley, Craig, 1998. Adjunct Professor in Bioengineering

Hartley, Peter Reginald, 1986. Professor of Economics

Harvey, F. Reese, 1968. Edgar Odell Lovett Professor of Mathematics

Harvey, Sheila, 2002. Lecturer of Management

Haskell, Thomas L., 1970. Samuel G. McCann Professor of History

Hassan, Fatime, 1999. Lecturer in Arabic
B.A. (1990) Beirut University College

Hassett, Brendan E., 2000. Assistant Professor of Mathematics

Hauge, Robert H., 1967. Distinguished Faculty Fellow in Chemistry
B.A. (1960) Loras College; Ph.D. (1965) University of California at Berkeley

Haverkamp, Eva, 1999. Anna Smith Fine Assistant Professor of History and Associate of Brown College

Hawkins, Gary, 2001. Lecturer of English

Hebl, Michelle R., 1998. Assistant Professor of Psychology and Management

Heckelman, Elizabeth W., 1990. Lecturer on Education

Heelley, Michael B., 1999. Assistant Professor of Management

Heinckenschloss, Matthias, 1996. Associate Professor of Computational and Applied Mathematics

Heiss, Brian, 2000. Visiting Lecturer of Architecture

Heitman, Elizabeth, 1987. Adjunct Associate Professor of Religious Studies

Helmuts, Jesse David, 1960. A.J. Hartsook Professor Emeritus of Chemical Engineering
B.S. (1950), M.S. (1958) University of Texas at Austin; Ph.D. (1961) University of Michigan

Hemeyer, Terry, 1998. Adjunct Professor in the Practice of Management
B.A. (1966) Ohio State University; M.A. (1968) University of Denver

Hempel, John, 1964. Professor of Mathematics
B.S. (1957) University of Utah; M.S. (1959), Ph.D. (1962) University of Wisconsin at Madison

Henze, Matthias, 1997. Assistant Professor of Religious Studies

Herrick, Robert, 2002. Adjunct Assistant Professor of Earth Science

Hess, Kenneth, 2000. Adjunct Associate Professor of Statistics

Heydorn, Richard P., 1998. Adjunct Professor of Statistics

Hill, Thomas W., 1979. Professor of Physics and Astronomy

Hirasaki, George J., 1989. A. J. Hartsook Professor in Chemical Engineering
B.S. (1963) Lamar University; Ph.D. (1967) Rice University

Hirschi, Karen, 2001. Adjunct Assistant Professor of Bioengineering

Hobby, William P., 1989. Radoslav A. Tsanoff Professor of Public Affairs
B.A. (1953) Rice Institute

Hoebig, Desmond, 1994. Associate Professor of Cello

Hokanson, David A., 2000. Adjunct Assistant Professor in Chemical Engineering
B.S. (1977), MChE (1979) Rice University

Holloway, Clyde, 1977. Herbert S. Autrey Professor of Organ

House, Waylon V., 1986. Adjunct Associate Professor of Chemical Engineering

Howell, William C., 1992. Adjunct Professor of Psychology

Huang, Huey W., 1973. Professor of Physics and Astronomy
B.S. (1962) National Taiwan University; Ph.D. (1967) Cornell University

Hubberman, Brian Michael, 1975. Associate Professor of Art
M.F.A. Equivalent (1974) National Film School of Great Britain

Hudspeth, C. M., 1947. Lecturer on Political Science
B.A. (1940) Rice Institute; J.D. (1946) University of Texas at Austin

Huffer, Lynne, 1998. Professor of French Studies

Hughes, Joseph B., 1992. Professor of Civil and Environmental Engineering

Hulet, Randall G., 1987. Faye Zarofim Professor of Physics and Astronomy

Huston, J. Dennis, 1969. Professor of English

Hutchinson, John S., 1983. Professor of Chemistry, Assistant Vice President for Student Affairs, and Director of Academic Advising
B.S. (1977), Ph.D. (1980) University of Texas at Austin


Iammarino, Nicholas K., 1978. Professor of Kinesiology and Premed Adviser
B.S. (1973) University of Dayton; M.Ed. (1975) University of Toledo; Ph.D. (1978) Ohio State University

Isle, Walter Whitfield, 1962. Vice Provost for Academic Affairs and Clarence L. Carter Distinguished Service Professor of English

Jaber, Thomas L., 1988. Associate Professor of Music and Director of Choral Ensembles

Jackson, Bradley, 1996. Lecturer on Management
B.S. (1983) University of Arkansas; M.S. (1987) University of Houston
Lawrence, Patricia R., 2000. Assistant Professor of Chemistry

Konisky, Jordan, 1996. Vice Provost for Research and Graduate Studies and Professor of Biochemistry and Cell Biology
B.S. (1963) Providence College; Ph.D. (1968) University of Wisconsin

Kono, Junichiro, 2000. Assistant Professor in Electrical and Computer Engineering

Krause, Gary, 2001. Adjunct Professor of Executive Education
B.S. (1976) University of Maryland

Kreutzer, Florian, 2001. Visiting Assistant Professor in German

Kripal, Jeffrey J., 2002. Lynette Autry Associate Professor of Religious Studies

Krisman, Kartik, 2002. Lecturer on Computational and Applied Mathematics

Kuuskraa, Tricky V., 1997. Associate Professor of Management

Kroll, Michael H., 1989. Adjunct Associate Professor in Bioengineering

Krumwiede, Keith, 1999. Wortham Assistant Professor of Architecture

Kulstad, Mark, 1975. Professor of Philosophy

Kwinter, Sanford, 1995. Associate Professor of Architecture

Lamos, Colleen R., 1989. Associate Professor of English

Landecker, Hannah, 2001. Assistant Professor of Anthropology

Landis, Chad M., 2000. Assistant Professor in Mechanical Engineering and Materials Science

Lane, David M., 1976. Associate Professor of Psychology and Management

Lane, Mary Ellen, 2000. Assistant Professor of Biochemistry and Cell Biology

Lane, Neal F., 1996. University Professor, Edward A. and Hermena Hancock Kelly Senior Scholar in the James A. Baker III Institute for Public Policy, and Professor of Physics and Astronomy
B.S. (1960), M.S. (1962), Ph.D. (1964) University of Oklahoma

Last, Nana, 1999. Assistant Professor of Architecture

Laughery, Kenneth R., 1982. Research Professor

Lavenda, Richard A., 1987. Professor of Composition and Theory

Lawrence, Patricia R., 1997. Lecturer on Management

Lee, Benjamin, 1995. Professor of Anthropology

Lee, Cin-Ty, 2002. Assistant Professor of Earth Science

Lee, T. Randall, 1998. Adjunct Assistant Professor in Electrical and Computer Engineering

Leeds, Brett Ashley, 2001. Assistant Professor of Political Science

Leeman, William P., 1977. Professor of Earth Science

Lenardic, Adrian, 1999. Assistant Professor of Earth Science

Lerup, Lars, 1993. Dean of the School of Architecture and William Ward Watkin Professor of Architecture
B. Arch. (1968) University of California at Berkeley; M. Arch. (1970) Harvard University

Lesnick, Robert M., 2001. Adjunct Professor in Executive Education

Levander, Alan R., 1984. Carey Croneis Professor of Earth Science

Levander, Caroline F., 2000. Associate Professor of English

Levy, Eugene H., 2000. Howard Hughes Provost and Professor of Physics and Astronomy

Li, Hui, 2002. Adjunct Associate Professor of Physics and Astronomy

Liang, Edison P., 1991. Andrew Hays Buchanan Professor of Astrophysics

Liapis, Stergios, 1998. Lecturer on Civil and Environmental Engineering

Lichtenstein, Alex, 2002. Associate Professor of History

Liebschner, Michael A., 2000. Assistant Professor in Bioengineering

Lillehei, Jorna, 2002. Adjunct Professor of Electrical and Computer Engineering

Lindsay, Bernard G., 1991. Faculty Fellow in Physics and Astronomy
B.S. (1984), Ph.D. (1987) Queen’s University of Belfast

Llorente, William J., 1977. Professor of Architecture

Llorente, William J., 1993. Dean of the School of Architecture and William Ward Watkin Professor of Architecture

Llusa, Pilar, 2000. Lecturer in Management

Logan, Heather, 1997. Adjunct Lecturer of Art and Art History
B.A. (1964) University of Texas; M.A. (1969) Texas A&M University

Logan, Jill (Thad), 1982. Lecturer in English
B.A. (1973) University of California at Santa Barbara; Ph.D. (1981) Rice University

Long, Elizabeth, 1978. Associate Professor of Sociology and Associate of Baker College

Lopez, Jose A., 1999. Adjunct Associate Professor in Bioengineering
B.S. (1977) New Mexico Institute of Mining and Technology; M.D. (1981) University of New Mexico
Loughridge, Dennis, 2001. Adjunct Professor of Management

Loveland, Katherine A., 1991. Adjunct Professor of Psychology
B.A. (1975) University of Virginia; Ph.D. (1979) Cornell University

Luca, Sergiu, 1983. Dorothy Richard Starling Professor of Violin
Artists Diploma (1966) Curtis Institute of Music

Lurie, Susan, 1987. Associate Professor of English and Associate Dean for Graduate Student Affairs

Lutte, Andreas, 1999. Associate Professor of Earth Science

Ma, Jianpeng, 2000. Assistant Professor in Bioengineering
B.S. (1985) Fudan University P.R. China; Ph.D. (1996) Boston University

Maas, Michael, 1984. Associate Professor of History

MacKenzie, Kevin R., 2000. Assistant Professor of Biochemistry and Cell Biology

Mackie, Hilary S., 1993. Associate Professor of Classics

Makdisi, Ussama S., 1997. Associate Professor of History

Malik, Shahid, 2001. Adjunct Professor of Executive Education

Manca, Joseph, 1989. Professor of Art and Art History

Mandel, James P., 1986. Lecturer on Management and Economics

Mantzaris, Nikolaos, 2001. Assistant Professor of Chemical Engineering
Diploma (1994), National Technical University of Athens, Greece; Ph.D. (2000) University of Minnesota

Marathi, Upendra, 2002. Adjunct Professor of Management

Marcus, George E., 1975. Joseph D. Jamail Professor of Latin American Studies and Professor of Anthropology
B.A. (1968) Yale University; Ph.D. (1976) Harvard University

Margolis, Eric, 1995. Associate Professor of Philosophy

Margrave, John L., 1963. E. D. Butcher Professor of Chemistry
B.S. (1948), Ph.D. (1951) University of Kansas

Marowsky, Gerd, 1994. Adjunct Professor in Electrical and Computer Engineering
M.A. (1966) TH Darmstadt; Ph.D. (1969) University of Gottingen, Germany

Martin, Randi C., 1982. Elma Schneider Professor of Psychology

Martin, William C., 1968. Harry and Hazel Chavanne Professor of Religion and Public Policy

Martinez, Robin F., 2001. Lecturer of Spanish

Masse, Richard P., 1989. Lecturer on Electrical and Computer Engineering

Matsuoka, Seiichi T., 1995. Associate Professor of Chemistry and of Biochemistry and Cell Biology

Matthews, Kathleen Shive, 1972. Dean of the Wiess School of Natural Sciences and Stewart Memorial Professor of Biochemistry
B.S. (1966) University of Texas at Austin; Ph.D. (1970) University of California at Berkeley

Matusik, Sharon F., 1998. Assistant Professor of Management

Matusow, Allen Joseph, 1963. William Gaines Twyman Professor of History and Associate of Baker College

Mawlawi, Osama R., 2002. Lecturer on Electrical and Computer Engineering


McAulay, III, Robert B., 1998. Lecturer on Management
B.A. (1968) Rice University; M.B.A. (1972) University of Texas at Austin

McCullough, Laurence, 2001. Adjunct Professor of Philosophy
A.B. (1969) Williams College; Ph.D. (1975) The University of Texas at Austin

McEvilley, Thomas, 1969. Distinguished Lecturer on Art History

McGill, Scott, 2001. Assistant Professor of Classics

McHale, Mary E.R., 1997. Laboratory Coordinator, Lecturer in Chemistry

McIntyre, Larry V., 1970. E. D. Butcher Professor of Bioengineering and Chemical Engineering

McIntosh, Roderick J., 1980. Professor of Anthropology
B.A. (1973) Yale University; M.Litt. (1975), Ph.D. (1979) Trinity College, University of Cambridge

McIntosh, Susan Keen, 1980. Professor of Anthropology

McKee, Herbert C., 1994. Lecturer on Chemical Engineering
B.S. (1942) Muskingum College; M.Sc., (1947), Ph.D. (1949) Ohio State University

McLellan, Rex B., 1964. Professor of Materials Science
B.S. (1957) Sheffield University; Ph.D. (1962) Leeds University

McManis, Mark H., 2001. Adjunct Instructor of Psychology

McNeil, Linda M., 1984. Professor of Education

McNew, James A., 2000. Assistant Professor of Biochemistry and Cell Biology
B.S. (1989) Texas A&M University; Ph.D. (1994) University of Texas Southwestern Medical Center–Dallas

McStravick, David, 1999. Lecturer on Mechanical Engineering and Materials Science

McZeal, Cassandra Moore, 2002. Adjunct Assistant Professor of Computational and Applied Mathematics

Meade, Andrew, J., 1989. Associate Professor of Mechanical Engineering
Merni, Oddin, 1987. Associate Professor of Musicology and Music History

Meffert, Lisa M., 2000. Assistant Professor of Ecology and Evolutionary Biology

Mellor-Crumney, John M., 1989. Senior Faculty Fellow in Computer Science and Electrical
and Computer Engineering

Mérenty, Erzsébet, 2000. Research Professor in Electrical and Computer Engineering
Research Institute for Physics, Hungarian Academy of Sciences

Merwin, John E., 1955. Research Professor of Civil and Environmental Engineering

Metsker, Michael L., 2001. Adjunct Assistant Professor of Chemistry

Miche, Helena, 1990. Professor of English
Princeton University; Ph.D. (1984) University of Pennsylvania

Mieszkowski, Peter, 1981. Allyn R. and Gladys M. Cline Professor of Economics and Finance

Miettinen, Hannu E., 1977. Professor of Physics and Astronomy

Mikos, Antonios G., 1991. John W. Cox Professor in Bioengineering
and Chemical Engineering

Miller, Clarence A., 1981. Louis Calder Professor in Chemical Engineering

Miller, Michael, 1995. Adjunct Associate Professor in Bioengineering
B.S. (1978) University of Massachusetts, M.D. (1982) University of Massachusetts Medical School

Mitchell, Douglas, 1981. Lecturer on Linguistics and Playwright in Residence
B.A. (1952) Baylor University; Ph.D. (1966) University of Texas at Austin

Mittleman, Daniel, 1995. Assistant Professor in Electrical and Computer Engineering

Montague, P. Read, 1993. Adjunct Assistant Professor in Computer Science

Moore, Pat, 1996. Lecturer on Civil and Environmental Engineering
B.A. (1952), B.S. (1953) Rice University

Morales, Julio, 2001. Adjunct Associate Professor in Kinesiology

Morgan, Julia K., 1999. Assistant Professor of Earth Science

Morgan, T. Clifton, 1987. Albert Thomas Professor of Political Science

Morris, Gary A., 2000. Instructor and Clinical Assistant Professor of Physics and Astronomy

Morris, George Stephen, 2001. Adjunct Associate Professor of Kinesiology

Morris, Wesley Abram, 1968. Professor of English

Morrison, Donald Ray, 1988. Professor of Philosophy

Morstead, Stuart P., 2000. Adjunct Professor in the Practice of Management

Morton, Scott A., 2000. Adjunct Assistant Professor of Earth Science

Moulin, Hervé, 1999. George A. Peterkin Professor of Economics
Agregation de Mathématiques (1971) Paris, France; Ph.D. (1975) University of Paris, France

Murphee, Dennis E., 1992. Lecturer on Management

Murray, William B., 1992. Associate Professor of Voice
B.A. (1956) Adelphi University; Certificate (1958) Università di Perugia; Certificate (1958) Yale
University School of Languages; Certificate (1960) Goethe Institute, Blaubeuren, Germany

Murphy, James, 2000. Lecturer on Civil and Environmental Engineering
M.S. (1983) Pennsylvania State University

Mutchler, Gordon S., 1968. Professor of Physics and Astronomy
B.S. (1960), Ph.D. (1966) Massachusetts Institute of Technology

at Los Angeles

Nagarajah, Satish, 1999. Associate Professor in Civil and Environmental Engineering
B.S. (1980) Bangalore University, India; M.S. (1982) Indian Institute of Science, India;
Ph.D. (1990) State University of New York at Buffalo

Nakatani, Hajime, 2002. Assistant Professor of Art and Art History

Napier, H. Albert, 1983. Professor of Management and Psychology

Narbona, Joe A., 1999. Lecturer of Spanish

Nash, Timothy, 2001. Adjunct Professor in Executive Education

Nataf, Douglas, 2000. Assistant Professor of Physics and Astronomy and in Electrical and Computer Engineering

Neeley, Linda E., 1993. Associate Professor of Art and Art History

Nelson-Campbell, Deborah, 1974. Professor of French

Nevell, Charles J., 1993. Adjunct Associate Professor in Environmental Science

Newman, James H., 1985. Adjunct Associate Professor of Physics and Astronomy

Ngyuen, Dung “Zung”, 1999. Lecturer on Computer Science

Ngyuen, Thanh Cao, 1994. Lecturer of Kinesiology
B.A. (1960) University of Saigon

Niedzockska, Nancy A., 1999. Assistant Professor of Linguistics and Associate of Lovett
College
at Santa Barbara

Nikonovicek, Edward P., 1993. Associate Professor of Biochemistry and Cell Biology
B.S. (1985) St. Louis University; Ph.D. (1990) Purdue University

Niu, Fenglin, 2002. Assistant Professor in Earth Science

Norcross, Alastair, 2002. Associate Professor of Philosophy
Nordlander, Peter, 1989. Professor of Physics and Astronomy and in Electrical and Computer Engineering  
Novotny, Alma M., 2000. Lecturer of Biochemistry and Cell Biology  
B.S. (1968) Duke University; Ph.D. (1972) Purdue University  
Nowak, Robert, 1999. Associate Professor in Electrical and Computer Engineering  
Nuñez-Phillips, 1991. Adjunct Professor in Computational and Applied Mathematics  
B.S. (1964) Villanova University; M.S. (1966) Case Institute of Technology  
Oberholzer, Mark A., 1999. Lecturer in Architecture  
B.S. (1989) Villanova University; M.Arch. (1994) Rice University  
Oberlack, Uwe, 2001. William V. Vietti Professor of Space Physics  
Diploma (1993), Ph.D. (1997) Technical University of Munich  
O’Connor, Daniel P., 2001. Adjunct Lecturer of Kinesiology  
B.A. (1991) Rice University; M.S. (1993) Texas Woman’s University  
Odhiambo, Atieno, 1989. Professor of History  
B.A. (1976) Makerere University College; Ph.D. (1973) University of Nairobi  
Ohno, Yuka, 1997. Assistant Professor of Economics  
Olofsson, Peter, 1996. Lecturer on Statistics  
B.S. (1989), Ph.D. (1994) Gothenburg University, Sweden  
Olson, John Steven, 1973. Ralph and Dorothy Looney Professor of Biochemistry and Cell Biology  
B.S. (1968) University of Illinois; Ph.D. (1972) Cornell University  
O’Malley, Marcia E., 2001. Assistant Professor in Mechanical Engineering and Materials Science  
Oraevsky, Alexander, 1998. Adjunct Assistant Professor in Electrical and Computer Engineering  
Orchard, Michael T., 2001. Professor in Electrical and Computer Engineering  
Osherson, Daniel, 1997. Lynette S. Autrey Professor of Psychology and Professor of Computer Science  
Ostdiek, Barbara, 1994. Associate Professor of Management  
Ostdiek, Donald, 1995. Lecturer in the School of Social Sciences, Director of Policy Studies, and Associate Director of Academic Advising  
Osterr, Kirsten, 2002. Assistant Professor of English  
O’Sullivan, Elizabeth, 2001. Lecturer of Management  
Overall, John E., 1983. Adjunct Professor of Psychology  
B.S. (1954) Trinity University; M.A. (1956), Ph.D. (1958) University of Texas at Austin  
Padley, B. Paul, 1996. Assistant Professor of Physics and Astronomy  
Page, Paula, 1985. Associate Professor of Harp  
B.Mus. (1969) Cleveland Institute of Music  
Pai, Vijay S., 2000. Assistant Professor in Electrical and Computer Engineering and Computer Science  
Papadopoulos, Phaedon P., 2001. Lecturer of Management  
Papakonstantinou, Anne, 1993. Adjunct Lecturer in Education Certification  
Park, Joon, 2002. Professor of Economics  
Parke, Jr., Robert B., 1998. Adjunct Professor in the Practice of Management  
Parker, Jon Kimura, 2000. Professor of Piano  
Parry, Ronald J., 1978. Professor of Chemistry and Biochemistry and Cell Biology  
B.A. (1964) Occidental College; Ph.D. (1968) Brandeis University  
Parsons, Spencer W., 1969. Associate Professor of Architecture  
B.A. (1953) University of Michigan; M.Arch. (1963) Harvard University  
Parsons, William B., 1993. Associate Professor of Religious Studies  
Pasquali, Matteo, 1999. Assistant Professor in Chemical Engineering  
Patrick, Charles, 1998. Adjunct Associate Professor in Bioengineering  
B.S.Ch.E. (1990) Louisiana State University; Ph.D. (1994) Rice University  
Patten, Robert L., 1969. Lynette S. Autrey Professor in Humanities  
Peaceman, Donald W., 1983. Adjunct Professor of Computational and Applied Mathematics  
B.Ch.E. (1947) College of the City of New York; Sc.D. (1952) Massachusetts Institute of Technology  
Pearson, Deborah A., 1991. Adjunct Associate Professor of Psychology  
Peck, David, 1993. Associate Professor of Clarinet  
B.Mus. (1973) University of Southern California  
Pérez, J. Bernardo, 1979. Associate Professor of Spanish  
Phillips, George N., 2001. Adjunct Professor of Biochemistry and Cell Biology  
Pindell, James, 1997. Adjunct Associate Professor of Earth Science  
Pitts, Timothy, 1992. Associate Professor of Double Bass  
Polking, John C., 1968. Professor of Mathematics  
Pomerantz, James R., 1988. Professor of Psychology and Director of the Neurosciences Program  
Pope, Albert H., 1986. Gus Sessions Wortham Professor of Architecture and Master of Brown College  
Porterfield, Todd, 2001. Associate Professor of Art and Art History  


Ransick, Janet, 1992. Artist Teacher of Wind Ensembles B.S. B.M. (1973) University of Southern California

Rau, Carl, 1988. Adjunct Professor of Physics and Astronomy Diplom-Physiker (1967), Dr. rer. nat. (1970) Technical University, Munich, Germany


Saggu, Peter, 2000. Adjunct Associate Professor in Bioengineering and in Electrical and Computer Engineering
B.S. (1973) Technical College Ulm, Germany; M.S. (1977) Technical University, Munich, Germany; Ph.D. (1988) University of Munich

Salaberry, M. Rafael, 2000. Assistant Professor of Spanish

Salas, Marcela, 1995. Senior Lecturer of Spanish

Samuels, Danny M., 1981. Visiting Professor of Architecture
B.Arch. (1971) Rice University

Sams, Clarence F., 1997. Adjunct Assistant Professor of Biochemistry and Cell Biology
B.A. (1975), Ph.d. (1983) Rice University

San, Ka-Yiu, 1997. Adjunct Assistant Professor of Bioengineering

Sasser, Ronald L., 1989. Professor in Bioengineering and Chemical Engineering

Schnoebelen, Anne, 2000. Adjunct Associate Professor in Bioengineering

Sass, Ronald L., 1988. Adjunct Assistant Professor of Psychology

Sawhney, Dale S., 1988. Professor of Earth Science
B.S. (1976) Purdue University; Ph.D. (1982) Massachusetts Institute of Technology

Schaefer, Andrew L., 1989. Adjunct Professor in the Biomedical Engineering Laboratory

Schneider, David J., 1989. Professor of Psychology

Schneitz, Karen Elsbeth, 1994. Assistant Professor of Management

Schoeblen, Anne, 1974. Joseph and Ida Kirkland Mullern Professor of Music and Interim Dean of the Shepherd School of Music

Schuler, Douglas A., 1992. Associate Professor of Management

Scott, David W., 1979. Noah Harding Professor of Statistics

Scott, Graham B. L., 2001. Adjunct Professor of Chemistry

Seusera, Gustavo E., 1989. Welch Professor of Chemistry
M.S. (1979), Ph.D. (1983) University of Buenos Aires

Sears, David A., 1983. Adjunct Professor in the Biomedical Engineering Laboratory
B.S. (1975) Yale University; M.S. (1958), M.D. (1959) University of Portland Medical School

Sedlak, John M., 1990. Lecturer on Civil and Environmental Engineering

Seed, Patricia, 1982. Professor of History

Segner, III, Edmund, 1996. Lecturer on Civil and Environmental Engineering
B.S. Rice University; M.A. University of Houston


Seren, Anne Bibiana, 2002. Adjunct Assistant Professor of Psychology

Shah, Guatami, 2001. Lecturer of Hindi
B.A. (1985) University of Bombay; M.S. (1988) Purdue University

Shamoo, Youself, 1998. Assistant Professor of Biochemistry and Cell Biology

Shank, Jr., C. Dean, 1984. Artist Teacher of Secondary Piano and Piano Technology

Shanks, Jacqueline, 2002. Adjunct Professor in Bioengineering

Shapiro, Armond, 2000. Adjunct Professor in the Practice of Management
B.A. (1963) Reneselaer Polytechnic Institute

Sheafor, Stephen J., 2002. Adjunct Professor in Electrical and Computer Engineering

Sheikh, Taucir, 2001. Lecturer on Civil and Environmental Engineering
B.S. (1975) University of Engineering and Technology Pakistan; M.S. (1980), Ph.D. (1987) University of Texas at Austin

Shehabuddin, Elora, 2001. Assistant Professor of Humanities and Political Science

Shen, Chao-mei, 2000. Lecturer of Chinese
Ph.D. University of Texas at Austin; M.A. National Taiwan University; B.A. National Tsing-hau University

Sher, George, 1991. Herbert S. Autrey Professor of Philosophy
B.A. (1964) Brandeis University; Ph.D. (1972) Columbia University

Shibatani, Masayoshi, 2002. Decede McMurtry Professor of Humanities
B.A. (1970), Ph.D. (1973) University of California at Berkeley

Shipp, Stephanie Staples, 2000. Lecturer of Earth Science

Shook, Joan E., 1998. Adjunct Professor in Practice of Management

Si, Qimiao, 1994. Associate Professor of Physics and Astronomy
B.S. (1986) University of Science and Technology of China; Ph.D. (1991) University of Chicago

Sickles, Robin, 1985. Professor of Economics
B.S. (1972) Georgia Institute of Technology; Ph.D. (1976) University of North Carolina

Siefert, Janet, 2002. Faculty Fellow in Statistics
B.S. (1975) University of Central Arkansas; Ph.D. (1997) University of Houston

Siemann, Evan, 1998. Assistant Professor of Ecology and Evolutionary Biology

Sigrist, Markus W., 1994. Adjunct Professor in Electrical and Computer Engineering
Diplom. (1972), Ph.D. (1977) ETH University, Zurich, Switzerland

Sinclair, James B., 1978. Lecturer on Electrical and Computer Engineering and Associate Dean of Engineering
Singleton, Scott F., 1996. Assistant Professor of Chemistry and of Biochemistry and Cell Biology

Skórczewski, Dariusz, 2001. Lecturer in German and Slavic Studies

Skura, Meredith, 1978. Libby Shearn Moody Professor of English
B.A. (1965) Swarthmore College; Ph.D. (1971) Yale University

Smallery, Richard E., 1976. University Professor, Gene and Norman Hackerman Professor of Chemistry, and Professor of Physics

Smayling, Michael C., 1989. Adjunct Lecturer on Electrical and Computer Engineering

Smith, Clifton Wayne, 1993. Adjunct Professor in the Biomedical Engineering Laboratory
B.S. (1963) Texas A&M University; M.S. (1966), M.D. (1968) University of Texas Medical Branch at Galveston

Smith, D. Brent, 2000. Assistant Professor of Management and Assistant Professor of Psychology

Smith, George, 1981. Professor of Art

Smith, Ian, 2000. Faculty Fellow in Physics and Astronomy

Smith, Ken A., 1975. Distinguished Faculty Fellow in Chemistry

Smith, Richard J., 1973. George and Nancy Rupp Professor of Humanities and Professor of History
B.A. (1966), M.A. (1968), Ph.D. (1972) University of California at Davis

Smith, Jr., Roland B., 1996. Adjunct Professor on Education and Association Provost

Sneider, Allison, 2000. Assistant Professor of History and Associate of Will Rice College

Snow, Edward A., 1981. Professor of English
B.A. (1964) Rice University; M.A. (1966) University of California at Riverside;
Ph.D. (1969) State University of New York at Buffalo

Soligo, Ronald, 1967. Professor of Economics
B.A. (1958) University of British Columbia; Ph.D. (1964) Yale University


Sorensen, Danny C., 1989. Noah Harding Professor of Computational and Applied Mathematics
B.S. (1972) University of California at Davis; M.A. (1975), Ph.D. (1977) University of California at San Diego


Spangos, Pol D., 1984. Lewis B. Ryon Professor of Mechanical Engineering and Civil and Environmental Engineering

Sparagana, John, 1989. Associate Professor of Art

Spence, Dale W., 1963. Professor of Kinesiology

Speziele, Marie, 2002. Professor of Trumpet
B.M. (1964) College Conservatory of Music, University of Cincinnati

Spieler, Christof, 2001. Lecturer on Civil and Environmental Engineering

Spudis, Paul D., 1994. Adjunct Assistant Professor of Earth Science

Spuler, Richard, 1992. Senior Lecturer of German and Associate of Lovett College

Stables, Fraser, 2001. Visiting Lecturer in Art and Art History

Stallmann, Kurt, 2002. Assistant Professor of Composition and Theory

Starbird, Russell B., 2002. Lecturer of Management

Stasney, C. Richard, 1999. Adjunct Professor of Music
B.A. (1965) Yale University; M.D. (1969) Baylor College of Medicine

Stein, Keith, 2001. Adjunct Associate Professor of Mechanical Engineering and Materials Science

Stein, Robert M., 1979. Dean of Social Sciences and Lena Gohlmann Fox Professor of Political Science

Steiner, Uwe, 2001. Associate Professor of German

Stepinski, Tomasz F., 1994. Adjunct Associate Professor of Physics and Astronomy
M.S. (1979) Warsaw University; Ph.D. (1986) University of Arizona

Stern, Michael, 1991. Associate Professor of Biochemistry and Cell Biology
B.S. (1978) Stanford University; Ph.D. (1985) University of California at San Francisco

Stevenson, Paul M., 1984. Professor of Physics and Astronomy and Associate of Brown College
B.S. (1963) Cambridge University; Ph.D. (1979) Imperial College

Stevenson, Randolph T., 1997. Associate Professor of Political Science

Stewart, Charles R., 1969. Professor of Biochemistry and Cell Biology
B.S. (1962) University of Wisconsin at Madison; Ph.D. (1967) Stanford University

Stokes, Gale, 1968. Dean of the School of Humanities, Mary Gibbs Jones Professor of History

Stoll, Richard J., 1979. Professor of Political Science


Strassmann, Joan E., 1980. Professor of Ecology and Evolutionary Biology
B.A. (1974) University of Michigan; Ph.D. (1979) University of Texas at Austin

Stroup, John M., 1988. Harry and Hazel Chavanne Professor of Religious Studies

Stuart, Laurence E., 2002. Adjunct Professor of Executive Education

Subramanian, Devika, 1995. Associate Professor of Computer Science and in Electrical and Computer Engineering
Sukumar, Ramamirtham, 2001. Lecturer on Management

Summer, Carolyn, 1999. Adjunct Professor of Physics and Astronomy

Swick, Dean, 2002. Adjunct Professor of Management
B.A. (1975) St. Lawrence University; M.B.A. (1977) Northeastern University

Swint, John Michael, 1977. Adjunct Associate Professor of Economics
B.A. (1968) California State University at Humboldt; M.A.; Ph.D. (1972) Rice University

Symes, William W., 1984. Noah Harding Professor of Computational and Applied Mathematics

Tabanou, Jacques R., 1999. Adjunct Professor of Computational and Applied Mathematics

Taha, Walid, 2002. Assistant Professor in Computer Science

Talwani, Manik, 1985. Schlumberger Professor of Geophysics

Taner, M. Turhan, 1988. Adjunct Professor of Earth Science
M.S. (1950) University of Istanbul


Tari, Gabor, 1997. Adjunct Assistant Professor of Earth Science

Taylor, Glenn A., 1999. Adjunct Associate Professor in Chemical Engineering

Taylor, Julie M., 1981. Professor of Anthropology

Taylor, Ronald N., 1983. George R. Brown Professor of Business Policy and Professor of Psychology

Terk, Michael, 1996. Assistant Professor in Civil and Environmental Engineering

Tetzuyan, Tayfun Es., 1998. James F. Barbour Professor in Mechanical Engineering and Materials Science

Thal, Sarah, 1999. Assistant Professor of History, Acting Director of the Asian Studies Program, and Associate of Jones College

Thames, Jr., Howard D., 1975. Adjunct Professor of Statistics

Thomas, Prince V., 2000. Visiting Lecturer of Art and Art History

Thompson, Ewa M., 1970. Professor of Slavic Studies

Thompson, James R., 1970. Noah Harding Professor of Statistics

Tittel, Frank K., 1967. J. S. Abercrombie Professor in Electrical and Computer Engineering

Titus, David, 2001. Adjunct Professor in Executive Education

Tobin, Mary L., 1979. Lecturer on English

Toffolotto, Frank R., 1996. Assistant Professor of Physics and Astronomy

Tomson, Mason B., 1977. Professor in Civil and Environmental Engineering
B.S. (1967) Southwestern State College; Ph.D. (1972) Oklahoma State University

Torres, Jorge U., 1998. Faculty Fellow in Bioengineering

Tour, James M., 1999. Chao Professor of Chemistry, Professor of Mechanical Engineering and Materials Science and Professor of Computer Science
B.S. (1981) Syracuse University; Ph.D. (1986) Purdue University

Trosset, Michael, 1992. Adjunct Associate Professor in Computational and Applied Mathematics

Tsukhltani, Chiyeko, 1986. Adjunct Professor of Electrical and Computer Engineering

Tyler, Stephen A., 1970. Herbert S. Autrey Professor of Anthropology and Linguistics

Udden, Mark M., 1983. Adjunct Associate Professor in the Biomedical Engineering Laboratory
S.B.; M.A. (1973) Massachusetts Institute of Technology; M.D. (1977) Southwestern Medical School, University of Texas at Dallas

Uecker, Wilfred C., 1984. Harmon Whittington Professor of Management and Associate Dean of Executive Education for the Jesse H. Jones Graduate School of Management

Vandaveer, Vicki V., 1989. Adjunct Assistant Professor of Psychology

Van Delden, Maarten, 1997. Associate Professor of Spanish

Vandenbarg, Kristy, 1987. Lecturer of Kinesiology
B.S. University of Michigan

Van Wagoner, John, 1997. Adjunct Professor of Earth Science

Vardi, Moshe, 1993. Karen Ostrom George Professor in Computational Engineering and Professor of Computer Science

Varmann, Peter J., 1983. Associate Professor in Electrical and Computer Engineering and Computer Science


Veletos, Anestis S., 1964. Brown & Root Professor in Civil and Environmental Engineering
B.S. (1948) Robert College, Turkey; M.S. (1950), Ph.D. (1953) University of Illinois

Verm, Jane L., 1989. Senior Lecturer of Spanish

Ver Meulen, William, 1990. Associate Professor of Horn

Viebig, Jr., V. Richard, 1969. Lecturer on Accounting
Visser, Pieter A., 1979. Adjunct Lecturer on Music
Vu, Phung A., 1989. Adjunct Professor in Computational and Applied Mathematics
Wagner, Stuart W., 1998. Lecturer on Management
Wallace, James R., 2001. Executive Officer and Associate Professor of Naval Science
A.B. (1975) University of Northern Colorado; M.S. (1983) University of Southern California
Wallace, Kristine GilMartin, 1966. Lecturer in Classics
Wallach, Dan Seth, 1998. Assistant Professor of Computer Science and in Electrical and Computer Engineering
Walters, G. King, 1963. Research Professor of Physics and Astronomy
Wang, Fu-Kuo Albert, 1998. Assistant Professor of Management
Ward, Calvin H., 1966. Foyt Family Professor in Civil and Environmental Engineering and Professor of Ecology and Evolutionary Biology
B.S. (1955) New Mexico State University; M.S. (1958), Ph.D. (1960) Cornell University;
M.P.H. (1978) University of Texas School of Public Health
Ward, Kerry R., 2001. Assistant Professor of History and Associate of Lovett College
Ward, III, Richard H., 1986. Adjunct Professor in the Practice of Management
B.A. (1990) Rice University
Warren, Joe D., 1986. Professor of Computer Science
Warren, Scott K., 1979. Adjunct Assistant Professor of Computer Science
Waters, David L., 1976. Associate Professor of Trombone
B.M.E. (1962) University of Houston; M.Mus. (1964) University of Texas at Austin
Watkins, Michael J., 1980. Professor of Psychology
Webster, Michael, 1997. Associate Professor of Clarinet and Ensembles
Weinberg, Armin D., 1980. Adjunct Professor in Kinesiology
B.Sc. (1966), Ph.D. (1971) Ohio State University
Weisman, R. Bruce, 1979. Professor of Chemistry
B.A. (1971) Johns Hopkins University; Ph.D. (1977) University of Chicago
Weissenger, Klaus H. M., 1971. Professor of German, Master of Hanszen College, and Director of the Goethe Center for Central European Studies
B.A. (1959), M.A. (1965) University of Hamburg, Germany; Ph.D. (1967) University of Southern California
Wellington, Gerard M. 2002. Adjunct Professor of Earth Science
B.A. (1971) San Jose State University; Ph.D. (1981) University of California at Santa Barbara
West, Daniel 1993. Lecturer in Humanities
West, Jennifer L., 1996. Associate Professor in Bioengineering and Chemical Engineering
Westbrook, Robert A., 1989. William Alexander Kirkland Professor of Management and Associate Dean for Faculty Affairs and the MBA Program
Westheimer, Alan D., 1983. Lecturer on Management
B.S.E. (1965) University of Pennsylvania; M.B.A. (1966) University of California at Berkeley
Weston, James P., 2000. Assistant Professor of Management
Weyand, Peter, 2002. Assistant Professor in Kinesiology
Whitaker, Jr., Gilbert R., 1997. Dean of the Jesse H. Jones Graduate School of Management and H. Joe Nelson, III, Professor of Business Economics
B.A. (1953) Rice University; M.S. (1958), Ph.D. (1961) University of Wisconsin at Madison
White, Carolynne, 1988. Lecturer on Education
B.S. (1964) Springfield College; M.Ed. (1998) University of Houston
White, Frank S., 1982. Lecturer on Architecture
B.S. (1977) Rochester Institute of Technology
White, Robert A., 1981. Adjunct Professor of Statistics
Whitmire, Kenton H., 1982. Professor of Chemistry
Whitmore, Mihriban, 1999. Adjunct Instructor of Psychology
Whitson, Peggy, 1997. Adjunct Assistant Professor of Biochemistry and Cell Biology
Widener, Sally K., 2001. Assistant Professor of Management
Wiedlinger, Susan D., 2001. Instructor of Chemistry
Wiener, Martin J., 1967. Mary Gibbs Jones Professor of History
Wiesner, Mark R., 1988. Professor of Civil and Environmental Engineering and Chemical Engineering
Wiley, Gale F., 2002. Lecturer of Management Communications
Wilkinson, Anne Victoria, 2002. Adjunct Instructor of Psychology
Willett, M. Robert, 1995. Adjunct Professor of Chemistry
B.A. (1955) Rice University; M.S. (1959), Ph.D. (1963) Yale University
Williams, Edward E., 1978. Henry Gardner Synnott Professor of Management and Professor of Statistics
B.S. (1966) University of Pennsylvania; Ph.D. (1968) University of Texas at Austin
Williams, William, 1998. Visiting Assistant Professor of Architecture
B.Arch. (1989) University of Houston; M.Arch. (1991) Harvard University
Wilson, James L., 1996. Adjunct Professor of Earth Science
B.A. (1942), M.S. (1944) University of Texas at Austin; Ph.D. (1949) Yale University
Wilson, Lon J., 1973. Professor of Chemistry
B.A. (1966) South Dakota State University; Ph.D. (1971) University of Washington at Seattle
Wilson, Rick K., 1983. Professor of Political Science and Statistics
Wilson, Jr., William L., 1972. Professor in Electrical and Computer Engineering and Associate of Wiess College
Windsor, Duane, 1977. Lynette S. Autrey Professor of Management
Winkler, Kathleen, 1992. Professor of Violin
B.Mus. (1972) Indiana University; M.Mus. (1974) University of Michigan

Winningham, Geoffrey L., 1969. Professor of Art and Honorary Associate of Wiess College
B.A. (1965) Rice University; M.S. (1968) Illinois Institute of Technology

Winningham, J. David, 1970. Adjunct Professor of Physics and Astronomy

Wise, J. D., 1995. Lecturer on Electrical and Computer Engineering

Wittenberg, Jr., Gordon G., 1979. Professor of Architecture

Wolf, Michael, 1988. Professor of Mathematics

Wolf, Joel, 1997. Associate Professor of History and Master of Will Rice College

Wong, Mark E. K., 2001. Adjunct Associate Professor of Bioengineering

Wong, Michael, 2001. Assistant Professor in Chemical Engineering

Wong, Stephen B., 2001. Lecturer on Computer Science

Wood, Philip R., 1990. Associate Professor of French

Wood, Susan, 1981. Professor of English

Wooten, Kevin C., 1994. Adjunct Associate Professor of Psychology

Worth, David S., 2002. Lecturer of Humanities

Wright, Anthony A., 1989. Adjunct Associate Professor of Psychology

Wu, Kenneth K., 1984. Adjunct Professor in the Biomedical Engineering Laboratory
M.D. (1966) National Taiwan University; M.S. (1968) Yale University


Xiao, Yi-tian, 2000. Adjunct Assistant Professor of Earth Science

Yakobson, Boris I., 1999. Associate Professor in Mechanical Engineering and Materials Science

Yasko, Alan, 1996. Adjunct Associate Professor in Bioengineering

Yaszemski, Michael, 1995. Adjunct Associate Professor in Bioengineering

Yeh, Meng, 2001. Lecturer of Chinese

Yepes, Pablo P., 1994. Senior Faculty Fellow in Physics and Astronomy

Younan, Adel H., 1998. Lecturer on Civil and Environmental Engineering

Young, James F., 1990. Professor of Electrical and Computer Engineering

York, James K., 2001. Professor of Naval Science

Yunis, Harvey E., 1987. Professor of Classics

Zambosco-Thomas, Elsa, 1986. Lecturer of Spanish

Zammito, John H., 1994. John Antony Weir Professor of History and Professor of German and Slavic Studies and Associate of Hanszen College
B.A. (1970) University of Texas at Austin; Ph.D. (1978) University of California at Berkeley

Zeff, Stephen A., 1978. Herbert S. Autrey Professor of Accounting and Professor of Managerial Studies
B.S. (1955), M.S. (1957) University of Colorado; M.B.A. (1960), Ph.D. (1962) University of Michigan; Dr. Econ. (Hon.) (1990) Turku School of Economics and Business Administration, Finland

Zelt, Colin A., 1995. Associate Professor of Earth Science

Zhang, Yan Anthea, 2001. Assistant Professor of Management

Zhang, Yin, 1996. Associate Professor of Computational and Applied Mathematics

Ziemer, Heidi E., 1998. Lecturer in Education Certification and Adjunct Assistant Professor in Psychology

Zimmerman, Stuart, 1971. Adjunct Professor of Statistics

Zodrow, George, 1979. Professor of Economics

Zouridakis, George, 1999. Adjunct Associate Professor in Bioengineering

Zuckert, Rachel, 2001. Assistant Professor of Philosophy

Zwaenepoel, Willy E., 1984. Karl F. Hasselmann Professor of Computer Science and Professor in Electrical and Computer Engineering

Zygourakis, Kyriacos, 1980. A.J. Hartsook Professor in Chemical Engineering and Professor in Bioengineering
Professional Research Staff


Alemany, Lawrence B., 1997. NMR Manager, Senior Research Scientist, and Lecturer. NMR Center in Chemistry


Armstrong, James D., 2000. Postdoctoral Research Associate in Biochemistry and Cell Biology
B.Sc. (1992), Ph.D. (1996) University of Glasgow

Arvidson, Rolf, 1999. Research Scientist in Earth Sciences


Ayala, Philippe Y., 1998. Postdoctoral Research Associate in Chemistry

Ba, Dechun, 2001. Postdoctoral Research Associate in Physics and Astronomy

B.A. (1984) Belarussian State University, Minsk; Ph.D. (1992) Institute of Physics, Belarus Academy of Sciences

Bahr, Jeffrey, 2000. Postdoctoral Research Associate in Chemistry


Benedetto, Angelo, 2000. Robert A. Welch Postdoctoral Fellow in Chemistry


Boettcher, Markus, 1997. Chandra Postdoctoral Fellow in Physics and Astronomy

Bondos, Sarah, 1998. Robert A. Welch Postdoctoral Fellow and Lecturer in Biochemistry and Cell Biology


Broom, Bradley, 1999. Research Scientist of Computer Science


Chapman, Gary, 1997. Postdoctoral Research Associate in Bioengineering

Chen, Edward S., 1997. Member of the Technical Staff in Computer Science


Chen, Jinhui, 2001. Postdoctoral Research Associate in Chemistry

Chen, Ying-Cheng, 2002. Postdoctoral Research Associate in Physics and Astronomy

B.E. (1992), M.S. (1995), Harbin Institute of Technology, Harbin, China; Ph.D. Beijing Institute of Aeronautical Materials


Chow, Thomas Wing-Yuk, 1984. Research Engineer in Biomedical Engineering

Constans-Nierga, 2001. Postdoctoral Research Associate in Chemistry

Couch, Robin, 1999. Robert A. Welch Postdoctoral Fellow in Chemistry


Dai, Tianhong, 2002. Postdoctoral Research Associate in Bioengineering

Dall, Sasha, 2000. Complimentary Visiting Scholar in Ecology and Evolutionary Biology


Derrien, Gaelle, 2002. Postdoctoral Research Associate in Chemistry


Dumitrica, Traian, 2000. Postdoctoral Research Associate in Mechanical Engineering and Materials Science


B.S. (1959) Nara Women’s University, Japan; M.S. (1966) University of Hawaii; Ph.D. (1969) University of California at Riverside

Dyke, Christopher Allen, 2002. Postdoctoral Research Associate in Chemistry

B.S., Ph.D. (1971) University of Vienna, Austria

Failla, Guiseppe, 2002. Visiting Scholar in Mechanical Engineering and Materials Science

Falcon, Catherine, 1999. Complimentary Visiting Scholar in Biochemistry and Cell Biology

Ferraz, Helen, 2000. Complimentary Visiting Scholar in Biochemistry and Cell Biology

Fowler, Robert L., 1996. Research Scientist in Computer Science

French, Margaret M., 2001. Postdoctoral Research Associate in Bioengineering
B.A. (1992) Rice University; Ph.D. (1999) University of Texas Graduate School

Fu, Gongmin, 2001. Postdoctoral Research Associate in Bioengineering

Gao, Tong, 1999. Complimentary Visiting Scholar in Biochemistry and Cell Biology
B.A. (1991) Wuhan University; M.S. (1994) Beijing Medical University; Ph.D. (1997) Institute of Microbiology, Beijing, China

B.S. (1977) Kurukshetra University, India; M.S. (1979), Ph.D. (1987) Haryana Agricultural University, India

Geurs, Franciscus, 2000. Postdoctoral Research Associate in Physics and Astronomy

Ghayour, Kaveh, 2000. Postdoctoral Research Associate in Physics and Astronomy


Gotze, Jurgen, 1994. Visiting Scholar in Electrical and Computer Engineering
Diplom (1986), Ph.D. (1990) Technical University of Munich

Guidy, Gwyn, 1993. Member of the Technical Staff in Information Technology

Goldstein, Jerry, 2000. Postdoctoral Research Associate in Physics and Astronomy


Gott, Arjen, 1994. Visiting Scholar in Electrical and Computer Engineering
Diplom (1986), Ph.D. (1990) Technical University of Munich

Guo, Wei, 2000. Postdoctoral Research Associate in Biochemistry and Cell Biology
B.S. (1989) Zhejiang University, China; M.S. (1992) Shanghai Institute of Materia Medica, China; Ph.D. (2000) Fudan University, China

Han, Jia-xiang, 1998. Postdoctoral Research Associate in Chemical Engineering

Han, Jong Hun, 2002. Postdoctoral Research Associate in Chemical Engineering

Holder, Anthony, 1996. Research Scientist in Environmental Science and Engineering

Hong, Seung-Beam, 2000. Postdoctoral Research Associate in Biochemistry and Cell Biology

Hong, Yan-Pyo, 2001. Complimentary Postdoctoral Research Associate in Biochemistry and Cell Biology

Horner-Johnson, Benjamin, 2000. Postdoctoral Research Associate in Earth Science

B.S. (1963) University of Texas at Austin; M.S. (1965), Ph.D. (1967) University of California at San Diego

Hwang, Jiunn-Jye, 2000. Postdoctoral Research Associate in Chemistry
B.S. (1986) Chinese Culture University, Taiwan; M.S. (1992) National Taiwan University; Ph.D. (2000) Case Western Reserve University

Imamura, Yutaka, 2001. Postdoctoral Research Associate in Chemistry

Jansen, John, 2002. IGERT Visiting Scientist/Engineer in Institute of Biosciences and Bioengineering

Jeffries, Paul, 2000. Postdoctoral Research Associate in CSST and CSC and Physics

Jin, Guohua, 1998. Research Scientist in Computer Science

Johnson, Marie P., 2002. Senior Research Scientist in Electrical and Computer Engineering


Kan, Amy T., 1985. Senior Research Scientist in Environmental Science and Engineering

Kapusta, Sergio D., 1988. Complimentary Research Associate in Chemistry
M.S. (1975) University of Buenos Aires; Ph.D. (1975) Rice University

B.S. (1954), Ph.D. (1961) University of Zagreb, Croatia

B.S. (1971) Allegheny College

Klenov, Dmitrij O., 2001. Post Doctoral Research Associate in Mechanical Engineering and Materials Science

Kobayasahi, Nobusuke, 2001. Postdoctoral Research Associate in Chemical Engineering

Kolev, Vladimir, 2001. Postdoctoral Research Associate in Chemistry
Dipl. (1996) Ural's State University; Ph.D. (1999) Institute of Metal Physics RAS

Koelbel, Charles, 1993. Research Scientist in Computer Science

Kosykin, Dmitriy, 2000. Postdoctoral Research Associate in Chemistry
B.S. (1989), M.S. (1997) University of Science and Technology, China

Kourmajian, Vram, 1993. Member of the Technical Staff in Information Technology

Kudin, Konstantin, 2001. Postdoctoral Research Associate in Chemistry

Kulkarni, Anil, 2001. Complimentary Visiting Scholar
B.S. (1970) Bombay University, India; Ph.D. (1988) Queen’s University of Belfast


Kutty, Razia, 2002. Postdoctoral Research Associate in Biochemistry and Cell Biology
Lancaster, James, 2002. Postdoctoral Research Associate in Physics and Astronomy  


LeClerc, Sherry, 2002. Postdoctoral Research Associate in Biochemistry and Cell Biology  

Lesch, Mary F., 1993. Postdoctoral Research Associate in Psychology  

Li, Jian, 2001. Postdoctoral Research Associate in Physics and Astronomy  

Lustig, B. Andrew, 2000. Research Scholar and Director on Program on Biotechnology, Religion, and Ethics  

Lytle, Tom, 1993. Member of the Technical Staff in Information Technology Development and Complimentary Research Staff in Computer Science

Magnani, Beatrice, 2000. Postdoctoral Research Associate in Earth and Sciences  
Ph.D. (1999) Perugia University, Perugia, Italy

Mahidraratne, Mathew, 2001. Complimentary Visiting Scholar in Chemistry  


Matveev, Mikhail, 1998. Research Scientist in Physics  

B.A. (1991) University of Houston

Minevski, Zoran, 1995. Complimentary Research Associate in Chemistry  

Mirakyan, Andrey L., 2000. Postdoctoral Research Associate in Chemistry  

B.S. (1975) Louisiana Tech University


Diploma (1973), Ph.D. (1978) Swiss Federal Institute of Technology, Zürich, Switzerland


Pichler, Marin, 2001. Postdoctoral Research Associate in Physics and Astronomy  


Plasencia, Ramiro, 2001. Postdoctoral Research Associate in Chemistry  

Qian, Feng, 2002. Postdoctoral Research Associate in Bioengineering  

Qin, Yu-Lin, 1996. Postdoctoral Research Associate in Psychology  

Read, Jen’nan Ghazal, 2002. Post Doctoral Fellow, Texas Institute for Society and Health, with appointments at the University of Texas School of Public Health and the Department of Sociology at Rice University  


Sadana, Anil K., 2000. Postdoctoral Research Associate in Chemistry  
M.S. (1990), Ph.D. (1999) Kurukshetra University, India

Saini, Rajesh K., 1997. Postdoctoral Research Associate in Chemistry  

Sampath, Aruna, 2000. Postdoctoral Research Associate in Biochemistry and Cell Biology  


Saterbak, Ann, 1999. Research Engineer/Lab Coordinator in Bioengineering  


Seidle, Heather, 2000. Postdoctoral Research Associate in Chemistry  

Shan, Hui, 1999. Postdoctoral Research Associate in Biochemistry and Cell Biology  

Shen, Hong-Lie, 2001. Postdoctoral Research Associate in Physics and Astronomy  
B.S. (1982) Jiangxi University, China; Ph.D. (1990) Shanghai Institute of Metallurgy, Chinese Academy of Sciences

Sheng, Xia-Yang, 1999. Postdoctoral Research Associate in Mechanical Engineering and Materials Science  

Shipp, Stephanie Staples, 2001. Program Director  

Siebert, Janet, 1998. Postdoctoral Research Associate in Materials Science  
B.S. (1975) University of Central Arkansas; Ph.D. (1997) University of Houston

Silvadouris, Vasiliis, 1999. Postdoctoral Research Associate in Bioengineering  


Smith, Jeff, 2002. Complimentary Visiting Scholar in Ecology and Evolutionary Biology  
B.A. (1997) Rice University
<table>
<thead>
<tr>
<th>Name</th>
<th>Position and Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Song, Kyoo Y.</td>
<td>Senior Research Associate in Chemical Engineering B.S. (1971) Han Yang University, Korea; M.S. (1973) University of New Mexico; Ph.D. (1978) Clemson University</td>
</tr>
<tr>
<td>Spiro, Robert W.</td>
<td>Senior Research Scientist in Physics and Astronomy B.A. (1968), Ph.D. (1978) University of Texas at Dallas</td>
</tr>
<tr>
<td>Stolk, Christaann C.</td>
<td>Postdoctoral Research Associate in Computational and Applied Mathematics M.Sc. (1996), Ph.D. (2000) Utrecht University, the Netherlands</td>
</tr>
<tr>
<td>Tworowska, Izabela</td>
<td>Welch Postdoctoral Research Associate in Biochemistry and Cell Biology M.S. (1992) Institute of Organic Chemistry-Pharmacy, Medical University, Poland; Ph.D. (2001) Polish Academy of Sciences</td>
</tr>
<tr>
<td>Wang, Tong</td>
<td>Senior Research Scientist in Mechanical Engineering and Materials Science Ph.D. (1985) Rice University</td>
</tr>
<tr>
<td>Wilson, William K.</td>
<td>Assistant Director of Laboratory of Basic Medical Sciences and Research Scientist B.A. (1970) Earlham College; Ph.D. (1982) University of New Mexico</td>
</tr>
<tr>
<td>Ying, Yun-Ming</td>
<td>Robert A. Welch Postdoctoral Fellow in Chemistry B.A. (1992) University of Science and Technology of China; Ph.D. (1997) Institute of Photographic Chemistry, Chinese Academy of Science</td>
</tr>
<tr>
<td>Zhao, Yufeng</td>
<td>Postdoctoral Research Associate in Mechanical Engineering and Materials Science B.S. (1988), M.S. (1991) Harbin University of Science and Technology, Harbin, China; Ph.D. (1998) Peking University, Beijing, China</td>
</tr>
</tbody>
</table>
University Standing Committees for 2002–2003

The president is an ex officio member of all committees except for the Faculty Council and University Council, which he chairs.

Committee on Admission and Student Financial Aid
Committee on Affirmative Action
Committee of the College Masters
Committee on Education
Committee on Environmental Health and Safety
Committee on Examinations and Standing
Committee on Faculty and Staff Benefits
Committee on the Faculty Handbook
Committee on Intellectual Property
Committee on the Library
Committee on Parking
Committee on President’s Lectures
Residential Colleges Management
Advisory Committee
Committee on Salary Equity
Committee on Security
Committee on Scholarships and Awards
Committee on Teaching
Committee on the Undergraduate Curriculum
Rice University Athletics Committee
Rice University Marshals Committee
R.O.T.C. Committee
Faculty Council
Graduate Council
Research Council
University Council

Chairs and Lectureships

Throughout its history, Rice University has been especially fortunate in the number of its friends and benefactors. Some of these are memorialized in the names of buildings and special physical facilities; others have generously provided for the enrichment of the university’s intellectual life by establishing chairs and lectureships either on a temporary or a permanent basis. Rice takes pleasure in recognizing on these pages some of these contributors to its academic excellence.

Chairs

J. S. Abercrombie Chairs in the School of Engineering
William W. Akers Fund
Benjamin M. and Mary Greenwood Anderson Chair in Mechanical Engineering and Materials Science
M. D. Anderson Foundation Visiting Scholar in the Baker Institute
Arab American Educational Foundation Chair
Agnes Cullen Arnold Chair in Fine Arts
Herbert S. Autrey Chair in Management
Herbert S. Autrey Chair in Humanities

Herbert S. Autrey Chairs in Social Sciences (three)
Lynette S. Autrey Chairs in Humanities (two)
Lynette S. Autrey Chair in Humanities-Music
Lynette S. Autrey Chair in Management
Lynette S. Autrey Chair in Social Sciences
Baker Institute Scholar on Health Policy
Baker and Botts Visiting Fellow in the Baker Institute
Bonner Means Baker Visiting Fellow
James Foulds Barbour Faculty Research Fund
Isaac and Mildred Brochstein Fellow in Middle East Peace and Security in Honor of Yitzhak Rabin in the Baker Institute
Brown & Root Chair in Engineering
George R. Brown Chair in Administration
Herman and George R. Brown Chair in Civil Engineering
Herman Brown Chair in Engineering
Andrew Hays Buchanan Chairs in Astrophysics
D. R. Bullard-Welch Foundation Chair in Science
E. D. Butcher Chairs
Louis Calder Chair in Chemical Engineering
Harry S. Cameron Chair in Mechanical Engineering
Clarence L. Carter Distinguished Service Chair
Chair in Islamic Economics, Finance, and Management
Chavanne Chair in Religion and Public Policy
T. T. and W. F. Chao Chair in Chemistry
Harry and Hazel Chavanne Chair in Religious Studies
William L. Clayton Fellowship in International Economics
Allyn R. and Gladys M. Cline Chair in Economics and Finance
Allyn R. and Gladys M. Cline Chair in History
John W. Cox Chair in Biochemical and Genetic Engineering
J. Howard Creekmore Chair
Carey Croneis Chair in Geology
Craig Francis Cullinan Chair in the Jesse H. Jones Graduate School
Doerr Endowed Chair in Computational Engineering
Charles Duncan Junior Faculty Achievement Award
Bruce and Elizabeth Dunlevie Chair in English
Thomas Clark and Mary Elizabeth Edwards Memorial Fund (Edwards Chair)
Enron Chair in E-Commerce in the Jesse H. Jones Graduate School of Management
Enron Chair in Risk Management in the Jesse H. Jones Graduate School of Management
G. C. Evans Instructorships in Mathematics
W. Maurice Ewing Chair in Oceanography
Laurence H. Favrot Chair in French
Anna Smith Fine Chair in Judaic Studies
Gladys Louise Fox Chair in English
Henry S. Fox, Sr., Chair in Economics
Len Gohliman Fox Chair in Political Science
Foyt Family Chair in Engineering
Friedkin Chair in Management
Karen Ostrum George Chair in Computational Engineering
Aron and Anaruth Gordon Fellow
Gene and Norman Hackerman Chair in Chemistry
Noah Harding Chair in Computer Science
Noah Harding Chairs in Mathematics
Reginald Henry Hargrove Chair in Economics
A. J. Hartsook Chair in Chemical Engineering
Karl F. Hasselmann Professorship
William Pettus Hobby Chair in American History
Howard R. Hughes, Jr., Chair
Watt J. and Lilly G. Jackson Professorship in Biblical Studies
CHAIRS AND LECTURESHIPS

Wallace Wilson Research Fellow in Energy Studies in the James A. Baker III Institute for Public Policy
Sam and Helen Worden Chair in Physics
Gus Sessions Wortham Chair in Architecture
Visiting Asian Scholars Lectureship Fund
Ervin Kenneth Zingler Chair

LECTURESHIPS

James P. Boone Professorship in Public Speaking
Gene Brice Colloquium Fund for Electrical Engineering
Brown Foundation-J. Newton Rayzor Lectures
Carroll Camden Lectureship in English Literature
William Wayne Caudill Lecture Series in Architecture
William B. Coleman, Jr., Colloquium Fund for Architecture
Deschko Family Lectureship in Music
English Department Distinguished Professor Lectureship
Joe L. Franklin Lectureship in Physical Chemistry
Hanszen College Fund for Aaron Seriff Lectures
W. V. Houston Lectureship
James Baker Hughes Lecture Fund
Violet S. and R. Graham Jackson Lectureship in Practice Management in the School of Architecture
Ervin Frederick Kalb Lectureship in History
Thomas W. Leland Visiting Lectureship in Chemical Engineering
Hilda and Hershel Rich Endowment for Leadership Rice
Linda and Ken Lay Family Endowment
Martel Student Life Fund
John Murfee Worsham Memorial Endowment
Rice Rugby Alumni Fund

FACULTY/STAFF AWARDS

Beta of Texas Chapter of Phi Beta Kappa
The C. M. and Demaris Hudspeth Endowed Award for Student Life and Clubs
Paula and John Mosle, Jr., Faculty Research Awards in the Humanities
Elizabeth and Harold Muckley Endowment for New Faculty in the George R. Brown School of Engineering

PROBLEMS

Hilda and Hershel Rich Endowment for Leadership Rice
Linda and Ken Lay Family Endowment
Martel Student Life Fund
John Murfee Worsham Memorial Endowment
Rice Rugby Alumni Fund