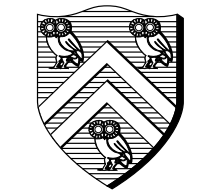
Rice University
General Announcements
1999 - 2000



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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 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, where appropriate, course offerings are subject to change without notice.

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Financial Aid, Scholarships, Part-time Employment on Campus	Financial Aid Office 116 Allen Center; 713-527-4958
Graduate Study	Chair of the Appropriate Department (see pages 80–82)
Undergraduate and Graduate Students, Undergraduate Curricula	Office of the Vice President for Student Affairs 101 Lovett Hall; 713-527-4996

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. The university takes affirmative action in employment by recruiting, hiring, and advancing 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 1999–2000

First Semester

Sunday–Friday, August 22–27	Orientation for new students
Monday, August 30	FIRST DAY OF CLASSES
Monday–Friday August 30–September 3	Registration for continuing undergraduates and graduate students
Monday, September 6	Labor Day holiday
Friday, September 10	**Deadline:** adding/dropping courses without fee
Wednesday, September 15	**Deadline:** filing Ph.D. candidacy petitions in Office of Graduate Studies for January conferral
Friday, September 24	**Deadline:** late registration, adding courses
Friday, October 1	**Deadline:** changing spring 1999 pass/fail to grade and instructors submitting grades to clear incompletes
Friday, October 15	Midsemester grades for first-year students due
	College course plans due to Vice President for Student Affairs
Monday–Tuesday, October 18–19	Midterm recess
Wednesday, October 20	All classes normally held on Monday meet; all Wednesday classes canceled (to equalize holidays by days of the week during the semester)
Monday, November1	**Deadline:** filing thesis master's candidacy petitions in Office of Graduate Studies for January conferral
	Deadline: filing certification for nonthesis master's and the form for automatic master's in the Office of Graduate Studies for January conferral
Friday, November 5	**Deadline:** dropping courses, designating pass/fail option
Monday–Friday, November 15–19	Preregistration for undergraduate students for spring semester
Monday–Wednesday, November 22–24	Self-scheduling of final exams in undergraduate courses
Thursday–Friday, November 25–26	Thanksgiving recess
Wednesday, December 8	LAST DAY OF CLASSES **Deadline:** dropping courses for first-semester students

Monday–Monday, December 13–20	Final examinations
Wednesday, December 15	Deadline: filing Ph.D. candidacy petitions in Office of Graduate Studies for May graduation
Monday, January 3	All grades due in Registrar's Office

Second Semester

Friday, January 14	**Deadline:** submitting theses in Office of Graduate Studies for January conferral, noon
Monday, January 17	Martin Luther King Jr. Day
Tuesday, January 18	FIRST DAY OF CLASSES
Tuesday–Monday, January 18–24	Registration for undergraduate and graduate students
Friday, January 21	**Deadline:** resolving grades of "other" from fall 1999
Friday, January 28	**Deadline:** adding/dropping courses without fee
Tuesday, February 1	**Deadline:** filing thesis master's candidacy petitions in Office of Graduate Studies for May graduation
	Deadline: filing certification for nonthesis master's and the form for automatic master's in the Office of Graduate Studies for May commencement
Friday, February 11	**Deadline:** late registration, adding courses
Friday, February 18	**Deadline:** instructors submitting grades to clear incompletes and conversion of fall 1999 pass/fail to grade
Friday, February 25	Majors Day
Friday, March 3	College course plans due to Vice President for Student Affairs
	Midsemester grades for first-year students due
Monday–Friday, March 6–10	Midterm recess
Friday, March 17	**Deadline:** sophomores filing majors with Registrar's Office
Thursday–Friday, March 30–31	Spring recess
Monday, April 3	**Deadline:** dropping courses, designating pass/fail option
Monday–Friday, April 3–7	Preregistration for undergraduate students for fall semester
Monday to Wednesday, April 17–19	Self-scheduling of final exams in undergraduate courses

Friday, April 28	LAST DAY OF CLASSES
	Deadline: dropping courses for first-semester students
	Deadline: submitting theses in Office of Graduate Studies for May graduation, noon
Saturday to Thursday, April 29–May 4	Final examinations for all degree candidates, noon
Wednesday to Wednesday, May 3–10	Final examinations for remaining students
Saturday, May 6	Grades of all degree candidates due in Registrar's Office, 9 A.M.
Saturday, May 13	EIGHTY-SEVENTH COMMENCEMENT
Wednesday, May 17	Remaining grades due in Registrar's Office
Friday, June 9	**Deadline:** resolving grades of "other"

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 2,600 undergraduates becomes a member of one of eight residential colleges, which have their own dining halls, public rooms, and dorms on campus; most of the first-year students and close to 65 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 1,500 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. 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, the 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 postimpressionist 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

One of the oldest and proudest traditions at Rice, the honor system 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 35–37.

- The evaluation of the student's performance in a course and a decision on the appropriate grade is the responsibility of the designated instructor or instructors in the course.
- No student should be given an extension of time or opportunities to improve a grade that are not available to all members of the class, except for verified illness or justified absence from campus. Students who have three scheduled final examinations in two consecutive calendar days may, however, take one of the examinations at another time. Except for scheduled exams, no course assignments may be due between the last day of classes and the last day of the final examination period.

- Students in independent study courses are not to be allowed an extension beyond the time when grades are due. Faculty are to submit grades at the end of the semester for such students based on work completed during the semester. The instructor directing the independent study bears responsibility with the student for ensuring that the work undertaken is appropriate to the span of a semester and for determining the degree credit to be received.
- 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 the semester for at least one month into 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 for 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 three hours 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 midsemester 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.

Library and Computer Networks

Students seeking information for course work and independent or graduate research may visit Fondren Library at the heart of the university campus, or they may access any of a number of campus computing labs and networks.

Fondren Library

Fondren Library provides a wealth of resources for study and research. Its permanent collection numbers 2 million volumes, more than 2.5 million microforms, and 14,000 current periodical and serial titles, not to mention 28,000 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. Network connections reach to all floors of the library, and circulating Macintosh Powerbooks are available for students to use in the building.

If they want to postpone a trek to the library, students may use the campuswide information system, **RiceInfo**, to access the library's on-line catalog. RiceInfo also links students to a wide variety of literature 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 "electronic studios"—collections of applications and tools tailored to a particular subject or need—or in easing user access to networking systems. 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 Herring Hall.

The library has an open-shelf policy that encourages creative browsing. Students may use a host of special facilities, from individual study carrels to group-study rooms and from audiovisual equipment and electronic workstations to 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 its 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.

Library Endowments

Friends of Fondren Library Endowment
Hobby Foundation Endowment
Henry Malcolm Lovett Endowment
John H. Wright Endowment

Endowed Book Funds

These endowed book funds supplement university-budgeted funds for book acquisitions, helping to meet the instructional and research needs of faculty and students. Each of these book funds was established by gifts or bequests from alumni and friends, corporations, or foundations.

Alice Gray Sears Akin Library Endowment Fund
Ralph A. Anderson, Jr., Memorial Fund in the Library
Robert Cyrus Allen French and Spanish Periodicals Fund
Henry Leigh Bartlett Fund
George R. Brown Library Fund for Engineering
Mr. and Mrs. Emory T. Carl Endowed Fund for Fondren Library
Robert Foster Cherry Endowment Fund
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Peggy Shiffick Collection for Environmental Studies
Society of Rice University Women's Fondren Library Endowment
Pender Turnbull Woodson Research Center Endowment
Peter Fondren Underwood Fund
Waggaman Sisters Fund
David McNeill Whightsel Endowed Fund for Humanities
Willoughby C. Williams Library Endowment Fund
Owen Wister Literary Society (O.W.L.S.) Library Endowment

Owlnet Computing Labs

Owlnet consists of the computing resources for educational use by members of the Rice community. Information Technology manages these resources, including the campus labs, software applications, campus network, and dial-up services. Owlnet comprises three platforms: UNIX workstations and Macintosh and PC-compatible microcomputers.

Owlnet Computing Labs are scattered across the campus, including one in each residential college. A complete listing of labs is available on the web at <http://riceinfo.rice.edu/Computer/Facilities> and in a free brochure available outside 103 Mudd Lab. Some of the larger labs are:

Fondren Library (first and second floors)
Mudd Lab (first floor)
Anderson 218
Ryon Lab 102
Sewall 101

For Further Information. More information about available computing resources and the on-line account application form for new accounts can be found on RiceInfo's computing webpages at <http://riceinfo.rice.edu/Computer>. Students who need help or wish to ask a question can contact the Consulting Center, 103 Mudd Lab, 713-527-4983, <consult@rice.edu>. Consulting staff can help students get started and guide them to additional resources.

Student Health and Counseling Services

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 (extension 4966 during work hours) or the Campus Police (extension 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 expeditions)

Health Insurance. All Rice students must have health insurance. 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 1999–2000 school year is effective from 12:01 A.M., August 15, 1999, until 12:01 A.M., August 15, 2000.

Students who have other medical insurance should complete the Medical Insurance Waiver Form, which is located at <http://dacnet.rice.edu/services/health/>, by August 15, before classes begin, to avoid automatic billing for coverage.

Students who sign up for the Rice Student Health Insurance Plan *must* submit their application on-line at <http://dacnet.rice.edu/services/health/> by August 15, before classes begin, to avoid automatic billing for coverage.

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.

Rice Counseling Center

Rice Counseling Center, in 301 Lovett Hall, addresses students' psychological needs with various programs and services. The center is open year-round except for scheduled holidays and occasional all-day staff retreats. Office hours for counseling and consultations are 8:30 A.M. to noon and 1:00 P.M. to 5:00 P.M., Monday through Friday. Students can make appointments by calling 713-527-4867 or by coming by 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, from substance abuse, eating disorders, and sexual assault/abuse to 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 clearly 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., on how to make a referral or how to respond to a friend in distress)
- Educational programming (e.g., various presentations on mental health issues)
- Crisis intervention on a walk-in emergency basis during regular office hours; students may call 713-527-4867 for assistance with emergencies after hours or on weekends

College Assistance Peer Program (CAPP). In this peer counseling program, students who have been carefully selected and trained in listening skills and mental-health education serve as supportive listeners and referral sources for other students. They also assist the center with its educational programming.

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.

Disabled Student Services

It is the responsibility of this office to coordinate campus accommodations for all students with documented disabilities. Adaptive equipment, such as assistive listening devices, recordings for the blind and dyslexic, temporary mobility assistance, etc., is available for students with specific needs. Information is maintained on scholarships, internships, and other resources specific to students with disabilities. Counseling and advocacy are available as well as consultation on the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973.

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 Smoothees as lunch and dinner options. Others browse through the Rice Campus Store. Farther into 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, as do 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 center sponsors workshops, career panels, and various career fairs each year. Students will find details on individual events publicized throughout the campus and in *Career News*, a center newsletter. The Career Library also has a substantial collection of resources, including literature on a broad range of occupations, material on locating and securing employment, and information on summer jobs, individual companies, and graduate schools.

Representatives from business, industry, and other institutions visit the center each year, seeking both summer workers and full-time employees. Any interested student may schedule interviews with these representatives. Students looking for full-time, part-time, or summer jobs should also check out the listings in the Career Library.

Undergraduate liberal arts majors seeking to parlay their B.A. degrees into a business career may want to consider the Rice Joint Venture Program, which is sponsored by the Career Services Center. Students accepted into the program undertake internships with Houston-area businesses during one semester.

Office of Multicultural Affairs

Located in the cloisters of the Rice Memorial Center, the Office of Multicultural Affairs responds to the academic and social needs of ethnic minority students at Rice. Primarily providing counseling and support, the office maintains its own library of information on graduate schools, jobs, fellowships, internships, and other opportunities available to minority students once they leave Rice. The office encourages cross-cultural programming on campus and attempts to promote a general awareness of issues related to cultural diversity. The Office of Multicultural Affairs is central to the university's continuing efforts to recruit and retain more minority students.

Health Education Office

Also lodged in the cloisters of the Rice Memorial Center, the Health Education Office runs programs on such issues as sexual health awareness, substance abuse prevention, nutrition and diet, and acquaintance rape. The office also provides students with private consultations and a resource room containing health-related literature, including brochures, journals, and posters. Student volunteers with the Health Education Office participate in such groups as Students Organized Against Rape (SOAR) and serve as health representatives for their colleges.

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, and cross-country, indoor, and outdoor track. Women team sports include basketball, volleyball, swimming, tennis, and cross-country, 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, Cameron Field for baseball, the Jake Hess Tennis Stadium, the Rice Track Stadium, 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 Department of Human Performance and Health Sciences 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 forewarned, though, that they participate at their own risk.

Sports Clubs

In addition to the intramural program, the Department of Human Performance and Health Sciences 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 Campus Police. 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 on-line at <http://rupd.rice.edu/parkingregs/>. 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 and intimate interaction. The close sense of community created by individual placement in residential colleges is extended to warm personal relationships with members of the Rice faculty. In its seclusion "behind the hedges," the beautifully ordered, 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 grants the two undergraduate degrees, the Bachelor of Arts (B.A.) and the Bachelor of Science (B.S.), in a range of majors. The vast majority of undergraduates earn the B.A. degree, though students may elect to pursue the B.S. degree, offered at Rice 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 Department of Education, 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. Programs that satisfy the requirements for admission to medical, dental, or law school are also available in conjunction with the various majors.

Graduation Requirements

Basic Degree Requirements

All students must complete the following:

- 12 semester hours of approved courses in each of the 3 distribution groups (for information on distribution requirements, see pages19–20)
- A prescribed number of restricted distribution courses, based upon one's major
- An English competency requirement
- 2 courses in health and physical education

To satisfy the **English competency requirement,** students must pass an English composition examination given to all entering students during Orientation Week. Those failing to pass must successfully complete ENGL 103 *Basic Composition*, a one-semester course carrying degree and distribution credit. The **health and physical education** courses include a range of offerings. Although two courses are required, they do not count toward the total semester hours at graduation. Students with disabilities may make special arrangements to satisfy this requirement.

All Bachelor's Degrees

The following conditions concerning attendance at Rice, course level, and grade point average apply for any bachelor's degree. All students must:

- Be registered at Rice for at least four full fall and/or spring semesters
- Complete at least 60 semester hours at Rice
- Take at least 48 hours of all *degree* course 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* at Rice (certain departments may specify a higher proportion)
- Complete all Rice courses satisfying *degree* requirements with a grade point average of at least 1.67
- Complete all Rice courses satisfying *major* requirements with a grade point average of at least 2.00

Before taking elective courses, students are responsible for making sure their plan of study meets all degree and major deadlines and requirements.

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. As a rule, however, majors leading to the B.A. at Rice are designed to fit the following parameters. To qualify for the B.A.:

- 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 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, and
- Students in architecture must complete at least 38 hours in course work outside the major

Bachelor of Science

The B.S. 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, electrical, 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. To earn a B.S. degree, students must meet the following minimum semester hour requirements in successful 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 128 semester hours

Special 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.

Distribution Requirements

The Distribution Requirement

All undergraduates must complete at least 12 semester hours in each of the three groups listed below. Courses that fulfill the distribution requirement are so labeled in the Courses of Instruction section of this catalog and in the Class Schedule:

Group I ***Humanities***—literature and language, art and art history, classics, philosophy (except logic), religion, music, and humanities

Group II ***Social Sciences***—economics, history, political science, anthropology, linguistics, psychology, and sociology

Group III ***Natural Sciences/Engineering***—biological science, physical science, engineering, mathematics, mathematical sciences, logic, statistics, and computer science

The Restricted Distribution Requirement

In addition to fulfilling the distribution requirement, each undergraduate must take a prescribed number of restricted distribution courses (previously known as foundation courses), depending on the student's major. This requirement is intended to ensure that all Rice undergraduates are introduced to different genres of study within the humanities and the arts, to the fundamentals underlying the study of human society, and to the principles of modern scientific thought and practice. Note that in some cases, a course may fulfill both the distribution and restricted distribution requirements simultaneously.

Students complete specific groups of restricted distribution courses according to their major. Undergraduate majors in the humanities are classified as Group I, majors in the social sciences as Group II, and majors in engineering and the natural sciences as Group III. Music, architecture, and cognitive sciences majors must meet unique restricted distribution requirements. Interdisciplinary majors other than cognitive sciences have been assigned for convenience to one of the three groups. A complete listing of majors by distribution group follows:

Humanities Majors (Group I)

Ancient Mediterranean Civilizations
Art and Art History
Asian Studies
Classics
English
French Studies
German and Slavic Studies
(includes Russian)
Hispanic and Classical Studies
Human Performance/Health Sciences
Medieval Studies
Philosophy
Religious Studies
Study of Women and Gender

Social Sciences Majors (Group II)

Anthropology
Economics
History
Linguistics
Managerial Studies
Mathematical Economic Analysis
Policy Studies
Political Science
Psychology
Sociology

Natural Sciences Majors (Group III)

Biochemistry
Biology
Chemical Physics
Chemistry
Geology
Geophysics
Mathematics
Physics

Engineering Majors (Group III)

Bioengineering
Chemical Engineering
Civil Engineering
Computational and Applied Mathematics
Computer Science
Electrical and Computer Engineering
Environmental Science and Engineering
Mechanical Engineering and Materials Science and Engineering
Statistics

Each student must complete specific restricted distribution courses based on the distribution group that includes that student's major (area majors are assigned to one of the three groups when they are approved). A list of requirements by group follows:

Group I majors must take 6 hours of natural sciences restricted distribution courses.

Group II majors must take 6 hours of natural sciences restricted distribution courses.

Group III majors must take 6 hours of humanities restricted distribution courses. and 3 hours of social sciences restricted distribution courses.

Architecture majors must take 6 hours of humanities restricted distribution courses, 3 hours of social sciences restricted distribution courses, and 6 hours of natural sciences restricted distribution courses.

Cognitive sciences majors must take 6 hours of humanities restricted distribution courses (double majors are not required to take any restricted distribution courses).

Music majors must take 6 hours of humanities restricted distribution courses, 3 hours of social sciences restricted distribution courses, and 6 hours of natural sciences restricted distribution courses.

Double majors. Double majors who combine a Group I or II discipline with a Group III discipline do not need to take any restricted distribution courses. Double majors in music and another discipline must meet the requirements of the distribution group that includes the other discipline. Similarly, double majors in architecture and another discipline must meet the requirements of the distribution group that includes the other discipline; students should be aware, however, that the architecture major still requires the completion of specific restricted distribution courses.

Courses that fulfill the restricted distribution requirement for each group of majors are published by the Registrar and can be obtained from the Registrar's Office or the Office of Academic Advising. They are also available on the World Wide Web at the following location:

http://www.ruf.rice.edu/~reg/SCHED_COURSES/foundation.courses.html

Undergraduate Majors

Students usually decide on a major by the end of their sophomore year, if not sooner. Majors Day, held each spring, brings together representatives of all departments and preprofessional offices to answer questions and provide students with information about their programs. Within the traditional departmental majors, students sometimes have the choice of a particular **area of concentration**, as is the case in electrical engineering, German, and economics. Students also may opt for **double or triple majors**, where they fulfill the major requirements of two or three different departments; 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 Departments and Interdisciplinary Programs section 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 nine 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, human performance and health sciences, 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 science departments, including biochemistry and cell biology, chemistry, ecology and evolutionary biology, geology and geophysics, mathematics, physics, and space physics and astronomy, with the single exception of the last, offer programs leading to the B.A. degree. Majors include biochemistry, biology, 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.

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. See also "Area Majors" (page 32) under Academic Regulations (page 30).

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 44–45). 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 is designed to develop the leadership capacities of Rice undergraduates from all disciplines. The program includes both academic and community experiences designed to introduce students to leadership issues and to the skills associated with effective leaders. There is an emphasis on critical and creative thinking, on effective communications, and on understanding issues from multiple perspectives.

The program is especially beneficial for sophomores in their second semester who can participate in all aspects of the program, but it is open to all students. Currently, the program offers two courses for academic credit. UNIV 309 has traditionally been team-taught by some of the finest professors at Rice and introduces students to leadership issues in the context of diverse disciplines. It includes a team project and a strong emphasis on written and oral presentation. UNIV 310 focuses on helping students develop a framework for making ethical decisions and on presentation and persuasion skills and strategies. Students must write a substantive strategy paper addressing something they would like to change in the world. Each student will identify and work with a mentor as part of preparing the paper.

A key component of Leadership Rice is the Summer Mentorship Program. Students are placed in paid work assignments under the tutelage of an experienced mentor. Mentorships for summer 1999 included opportunities in both the private and nonprofit sectors in Houston; the Washington, D.C., area; and internationally. Rice alumni and parents are invited to help Leadership Rice identify mentorship sponsors. Students enrolled in UNIV 309 are given priority for the mentorship program. All those who participate in the summer mentorship must enroll in UNIV 310.

Leadership Rice sponsors the Rice-on-Board program, which places students on nonprofit community boards as participant-observers for a year. It also oversees Envision grants and the Janus Award. Envision grants, offered three times each school 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 subject from multiple perspectives. The Rice Women's Mentoring Network is also administered by Leadership Rice, and both graduate and undergraduate women may choose to become involved.

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.

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 are simple: 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 history, political science, or economics, no law school specifies particular courses or curricula as prerequisites to admission. Most require only a baccalaureate degree and the Law School Admission Test. Students selecting a major should simply 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 one 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 early, preferably in their first year at Rice. 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 one 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 and 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.

UNDERGRADUATE DEGREE CHART

School Department	Undergraduate Degrees Offered	Additional Options or Areas of Concentration (within majors)
SCHOOL OF ARCHITECTURE		
	B.A., B.Arch.	B.A. majors in architecture and in architectural studies
GEORGE R. BROWN SCHOOL OF ENGINEERING		
Bioengineering	B.S.B.E.	Areas of concentration in cellular and molecular engineering, systems engineering and biomedical instrumentation, and biomaterials and biomechanics
Chemical Engineering	B.A., B.S.Ch.E.	Focus areas in bioengineering, environmental science/engineering, materials science/ engineering, and computational science/ engineering
Civil Engineering	B.A., B.S.C.E.	Option in environmental engineering
Computational and Applied Mathematics	B.A.	Areas of concentration in numerical analysis, operations research, optimization, and differential equations
Computer Science	B.A., B.S.C.S.	
Electrical and Computer Engineering	B.A., B.S.E.E.	Areas of concentration in systems, computer engineering, and physical electronics
Environmental Science and Engineering	B.A.	B.A. as double major with any other Rice major; see also civil engineering and chemical engineering for B.S. options
Mechanical Engineering and Materials Science	B.A., B.S.M.E., B.S.M.S.	Majors in mechanical engineering and materials science and engineering
Statistics	B.A.	Theoretical and applied training orientations; joint work in related departments
SCHOOL OF HUMANITIES		
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
Education	No undergraduate degree offered	Leads to secondary teaching certificate in conjunction with B.A. in major field

School Department	Undergraduate Degrees Offered	Additional Options or Areas of Concentration (within majors)
English	B.A.	
French Studies	B.A.	
German and Slavic Studies	B.A.	German and German cultural studies, and Russian/Slavic studies
Hispanic and Classical Studies	B.A.	Spanish language and literature, Latin American studies, classics, Greek, Latin, and Portuguese
History	B.A.	
Human Performance and Health Sciences	B.A.	Areas of concentration in exercise science, sports medicine, sports management, health sciences, and teaching/coaching
Linguistics	B.A.	Areas of concentration in language, cognitive science, second language acquisition, and language, culture, and society
Philosophy	B.A.	
Religious Studies	B.A.	Distribution requirements in methodology and religious traditions
JESSE H. JONES GRADUATE SCHOOL OF MANAGEMENT		
	No undergraduate degree offered	Three accounting courses open to all undergraduates
SHEPHERD SCHOOL OF MUSIC		
	B.A., B.Mus.	B.A. in music; B.Mus. in composition, music history, music theory, and performance; joint B.Mus./M.Mus. with fifth year of study
WIESS SCHOOL OF NATURAL SCIENCES		
Biochemistry and Cell Biology	B.A.	Part of an integrated biosciences curriculum
Chemistry	B.A.	Chemical physics major offered jointly with physics
Ecology and Evolutionary Biology	B.A.	Part of an integrated biosciences curriculum
Geology and Geophysics	B.A.	Majors in geology and in geophysics
Mathematics	B.A.	Differential geometry, ergodic theory, partial differential equations, probability, real analysis, mathematical physics, complex variables, geometric and algebraic topology, and combinatorics
Physics	B.A.	Major in physics with specific options in applied physics, biophysics, and space physics and astronomy; interdepartmental major in chemical physics
Space Physics and Astronomy	B.A.	See physics
SCHOOL OF SOCIAL SCIENCES		
Anthropology	B.A.	Areas of concentration in archaeology and social/cultural anthropology
Economics	B.A.	Majors in economics and in mathematical economic analysis
Political Science	B.A.	
Psychology	B.A.	
Sociology	B.A.	
INTERDEPARTMENTAL MAJORS		
Area Majors	B.A.	Two or more departments and the Office of Academic Advising
Ancient Mediterranean Civilizations	B.A.	Anthropology, classical studies, Greek, Latin, history, history of art, linguistics, philosophy, and religious studies

School Department	Undergraduate Degrees Offered	Additional Options or Areas of Concentration (within majors)
Asian Studies	B.A.	Anthropology, art, history of art, history, humanities, linguistics, Chinese, Japanese, Korean, Sanskrit, political science, and religious studies
Cognitive Sciences	B.A.	Anthropology, cognitive sciences, computer science, electrical engineering, linguistics, philosophy, psychology, sociology, and statistics
Managerial Studies	B.A.	Accounting, computational and applied mathematics, economics, political science, psychology, and statistics
Medieval Studies	B.A.	History of art, classics, English, French, German, history, humanities, linguistics, Spanish, music, philosophy, political science, and religious studies
Policy Studies	B.A.	Environmental policy, government management, health-care policy, international affairs, law and justice, business policy, and political management
Study of Women and Gender	B.A.	Anthropology, classics, English, French studies, German, history, humanities, linguistics, music, philosophy, religious studies, and sociology

Teacher Certification

Students in the teacher education program earn Texas state teacher certification at the secondary level. Subjects include art, biology, chemistry, computer science, earth science, economics, English, French, general science, geology, German, health sciences, history, Latin, life-earth science, mathematical sciences, physical education, physical sciences, physics, political science, psychology, Russian, social studies, sociology, and Spanish. For more information on teacher certification programs at the undergraduate and graduate levels, see education in the Departments and Interdisciplinary Programs and Courses of Instruction sections.

Foreign Study and Exchange Programs

Each year more than 150 undergraduates from many different majors study away from campus, applying the transfer credit earned toward their degrees. The study abroad advisers and faculty advisers in each department help these students select their programs and arrange for credit transfers (Rice follows the same general guidelines when transferring credit from both foreign and domestic universities). Students entering a foreign study or exchange program should arrange prior approval for transfer credit through the relevant academic department(s) and the registrar. While most students participate in a Rice-based program or in one of the affiliated programs listed below, they are not limited to these options. Detailed information on all programs, including application forms, is available from the Office of Academic Advising and International Programs (Ley Student Center). Students should address requests for leave to study abroad in advance to the director of international education.

American University's Washington Semester Program. Students majoring in policy studies or related fields may participate in American University's Washington Semester Program, which consists of a full semester's course work at American University and an internship that exposes its participants to the operations of different branches of the federal government. American University, located in Washington, D.C., offers separate programs in American politics, U.S. foreign policy, journalism, economic policy, justice, public law, and peace and conflict resolution. Students interested in the program should contact Professor Donald Ostdiek in the political science department or the Office of Academic Advising.

Beaver College Center for Education Abroad. The affiliation with Beaver College Center for Education Abroad provides Rice students with direct access to 40 United Kingdom universities, among them various branches of the University of London, University of Bristol, University of Edinburgh, and Trinity College, Dublin. Beaver College also maintains centers in Australia, Austria, Greece, Hungary, and Mexico. A broad selection of courses of study is available.

C. D. Broad Exchange Program with Trinity College, Cambridge. This exchange program sponsored by the Student Aid Foundation Enterprises involves both students and faculty, linking Rice with Trinity College in Cambridge. Students compete for the chance to undertake one year of study as a visiting student at Trinity College; a Trinity student comes to Rice in alternate years. The program enables similar but shorter exchanges of Rice and Trinity faculty, with the provost appointing the Rice faculty member who participates in the exchange.

Butler University Institute for Study Abroad. Rice's affiliation with Butler University Institute for Study Abroad enables students to enroll directly at many prestigious universities in England, Ireland, Scotland, Australia, and New Zealand. Students may stay for the full academic year or for one or two terms. The universities in Great Britain include a wide array of schools both in and outside London; schools in Australia and New Zealand include the Universities of Melbourne, Sydney, and Auckland. Butler ISA also cooperates with programs in Argentina, Chile, and Costa Rica.

China Cooperative Language and Study Programs Consortium. Under the auspices of the Council on International Education Exchange (CIEE), Rice participates in a consortium that offers students the opportunity to study at Peking University and Nanjing University in China and at National Chengchi University in Taipei. Prospective participants should consult with faculty teaching in the Asian studies major.

Denmark's International Study Program. Full-year, semester, and summer programs in Copenhagen are open to Rice students through this program established under the Danish Ministry of Education and the University of Copenhagen. Academic offerings, which focus on liberal arts, biology, engineering, international business, and architecture and design, include study tours to Russia and Europe. Prior knowledge of the Danish language is not required.

Exchange Program with the Federation of German–American Clubs. Students at Rice with a firm grounding in written and spoken German may compete for a place in the 10-month exchange program cosponsored by the Federation of German–American Clubs and Rice. Successful applicants enroll at one of 18 outstanding German universities, professional schools, or technical schools. The Federation of German–American Clubs assigns students to their respective universities, based on their priority ranking and taking into account their individual qualifications and fields of study, as well as to a host family. The federation also arranges several weekend gatherings in different parts of Germany throughout the year abroad. One or two Rice students are selected each year by the faculty of the Department of German and Slavic Studies, in cooperation with the Office of International Programs, to make an even exchange with one or two German students. Rice participants pay tuition and room and board for their counterparts and are supplied with tuition and a stipend to cover room and board while in Germany. Students should submit their applications by late February.

Institute for the International Education of Students (IES). Rice is an affiliate university of IES, a system of centers in Berlin, Buenos Aires, Dijon, Durham, Freiburg, London, Madrid, Milan, Nantes, Paris, Salamanca, Vienna, Adelaide, Canberra, Beijing, Tokyo, and Nagoya. In most cases, the institute centers are associated with a host university; students may take courses offered by both the center and the university. Counselors and faculty from IES and the host university help students select courses, facilitate registration, arrange for university examinations, and provide transcripts to Rice.

Intercollegiate Center for Classical Studies in Rome. This Rice-affiliated center in Rome focuses on classical studies. Operated through Duke University, this semester-long program offers undergraduate courses taught by European and American professors in Greek and Latin literature, ancient history and archaeology, and ancient art. This program is particularly suited to majors in ancient Mediterranean civilizations, although juniors or seniors majoring in art history or classics would benefit as well.

Rice Fall Semester Program in Chile. The Department of Hispanic and Classical Studies offers a one-semester program each fall in conjunction with the University of Chile in Santiago. Students in good standing who are reasonably proficient in Spanish may apply. They take courses both from the Rice professor who accompanies the group (in advanced Spanish) and from the University of Chile (in a number of fields). The program often includes students from other U.S. universities. Further information is available from the department office in 103 Rayzor Hall.

Rice University–Gakushuin University Exchange Program. Under an exchange agreement negotiated with the School of Humanities, Rice students with previous experience in the Japanese language may apply to spend either a semester or a year at Gakushuin University, a small elite university in Tokyo. While in Tokyo, students take courses in Japanese language and culture as well as courses in other disciplines if the students are sufficiently proficient in the language. Applications for this exchange are due in February of each year.

Rice University–Kyushu University Exchange Program. Japan in Today's World (JTW) is a two-semester program that enables students from select U.S. universities to study the Japanese economy, science, language, and culture at Kyushu University's Fukuoka City campus. Students at least in their sophomore year with a good academic record and strong motivation may apply. Those chosen receive a full tuition waiver from JTW. Although courses are taught in English (except for Japanese language courses) and no previous Japanese study is required, students are encouraged to take classes in Japanese and Asian studies before entering the program.

Rice University–Swarthmore Exchange Program. An exchange program between Rice and Swarthmore College allows qualified Rice students to spend the fall semester of their sophomore, junior, or senior year on Swarthmore's wooded campus near Philadelphia. This nonsectarian coed college with ties to the Society of Friends (Quakers) has academic standards similar to those at Rice. Students who enroll at Swarthmore in its normal program of 4 courses receive 16 semester hours of transfer credit toward their Rice degree. The exchange is on a one-for-one basis in the fall only, with each student continuing to pay tuition, room, board, and fees to his or her home school. Rice students apply in January by submitting a letter of application and two supporting letters from faculty members.

Rice University–University of Lancaster Exchange Program. Rice sophomores majoring in economics, managerial studies, sociology, or religious studies who have maintained a minimum grade point average of 2.50 qualify for an exchange program with the University of Lancaster, a notable British university in northwestern England just south of the Lake District. The Rice–Lancaster arrangement, which requires a full academic year of study, is a one-for-one exchange, with each student paying tuition, room, and board to his or her home university. Students should submit their applications early in the spring semester prior to the school year to be spent abroad; the Office of International Programs selects the finalists in consultation with appropriate departments.

Sea Education Association. Rice's affiliation with Sea Education Association enables students to spend a semester concentrating their studies on deepwater oceanography. Half the time is spent in laboratories at Woods Hole, Massachusetts, and the other half aboard a sailing vessel in the Caribbean conducting research. Another option, Maritime Semester, lets students study the development of maritime cultures and commerce in New England and Canada while sailing off the North American coast.

Sweet Briar Junior Year in France Program. Established in 1948, the Sweet Briar Junior Year in France Program enables college students in the U.S. and Canada to spend a year studying at four universities and other institutions of higher education in Paris. While some participants are French majors, many others specialize in such areas as art and art history, comparative literature, government, history, international relations, mathematics, music, philosophy, political science, religion, and theater arts. Following a four-week orientation period in Tours, students are encouraged to experience French culture by living with families while studying in Paris.

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 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. 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 and meet immunization and TB screening requirements. Immunizations required for admission are diphtheria/tetanus, measles, rubella, and mumps, with immunizations against hepatitis B and chicken pox recommended. The Mantoux tuberculin skin test is also required. A late fee of $30 is charged for failure to submit a fully 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 middle of August and for the spring semester by the first of January.

Students who do not register and who fail to request from the registrar a delay of the deadline in the Academic Calendar (pages vii–ix) are considered withdrawn from the

university by default. To be readmitted, students must be in good standing and must pay a late registration fee of $80.

After the fourth week of classes, students are readmitted *only* for good reason and with the approval of the Committee on Examinations and Standing or the vice president for student affairs

Drop/Add. During the first two weeks of classes, all students may change their registration without penalty fee by adding or dropping courses with appropriate adviser's approval according to the proper procedure. After two weeks, the following conditions apply:

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:

- 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 not drop courses after the end of the tenth week of classes, except with the approval of the Committee on Examinations and Standing (a $25 fee is assessed for courses dropped after the tenth week by non-first-semester students)

Students may not drop courses where the Honor Council has ruled a loss of credit. 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 following fee schedule:

Week 3	$5	Week 7	$17
Week 4	$8	Week 8	$20
Week 5	$11	Week 9	$23
Week 6	$14	Week 10	$25

A flat fee of $25 will be levied for each drop form submitted by first-semester students after the tenth week of classes.

Course Load. Students at Rice normally enroll for 15 to 17 semester hours each semester. This allows them to complete the requirements for graduation in eight semesters. Students must secure permission in writing from the vice president for student affairs before filing their registrations if they want to:

- Register for more than 20 hours
- Enroll in, or drop to, fewer than 12 hours
- Register concurrently at another university

No student may receive credit for more than 20 hours 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 one course at the same hour unless they receive permission from the instructors involved.

Declaring Departmental Majors

Students normally designate a major before preliminary registration for the junior year and will not be permitted to register for the fall semester of the junior year without having declared a major. To assist students with this selection, Majors Day, an event at which departments and preprofessional offices provide information about their programs, is held each spring semester. Once a student declares a major, the department or title of the major is then noted on the student's transcript, and a faculty adviser in the major department is assigned. Introductory courses taken before formal designation of a major may be counted in fulfilling the major requirements.

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.

Although students normally declare a major by the time of preregistration for the spring semester of their sophomore year, they are always free to change departmental majors in the junior or senior year. 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). Students and their advisers should regularly review progress toward their degrees.

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.

Area Majors

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 bestow 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 advisers. 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 note 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)
- Attend Rice full time for at least four fall and/or spring semesters

Interested students should apply for admission through the Office of Admission, following procedures and meeting criteria similar to that for transfer applicants (see page 45). A complete application file includes the $35 application fee, official transcripts of all undergraduate and graduate work, two letters of recommendation from the most recent college attended, and standardized test scores (the SAT, SAT I, or ACT).

Financial Aid and Housing. Students seeking information about financial aid available to participants in the second degree program should contact the Office of Financial Aid. 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. 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 codirector, 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. Credit is normally given for courses whose content makes them equivalent to courses that are or could be offered at Rice. Students must have taken the course at an academic institution accredited by a regional accrediting agency and must have earned a grade of C- or better (for that reason students may not transfer courses taken pass/fail or on a similar basis at other institutions).

The registrar, in conjunction with the academic departments, determines whether courses are appropriate for transfer to Rice. Individual departments may place additional restrictions on particular courses and/or institutions. No more than 14 semester hours of transfer credit taken in summer schools other than Rice may be applied to any Rice degree. Similarly, various majors and degree programs may limit the amount of transfer credit that students may apply to them.

Because of these restrictions, students are strongly advised to seek prior approval from the registrar before taking courses elsewhere. For courses in a student's major or other highly specialized courses, the registrar may require that the student secure approval from the major department. Without prior approval, students cannot be certain that credit taken at another institution will be transferred.

If approved, the equivalent Rice course is entered on the student's record *after* the registrar receives an official transcript from the other college or university. 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. However, all requirements satisfied by the equivalent Rice course are satisfied by the transferred course.

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 examinations are conducted under the honor system (see page 7).

Examinations are considered final examinations when they:

- Cover more than the material learned since the last test, or
- Are the only exam in the course, or
- Require comprehensive knowledge of the entire course

Such exams may be given only during the final examination period.

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.

The Committee on Examinations and Standing recommends that hour-long exams not be given in the final week of classes in those courses in which a final is given.

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 7–9.)

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 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 14 semester hours total as pass/fail
- May register for only 1 course as pass/fail in a semester
- May not take as pass/fail those courses specifically required for the major or courses falling within the major department or major area (when students take such courses pass/fail, the registrar automatically replaces the P with the grade earned)
- Must file the proper form for a course to be taken pass/fail no later than the posted deadline, usually the end of the tenth week of classes (the Committee on Examinations and Standing rarely approves conversion to a pass/fail designation after that deadline)

Students may convert a pass/fail course to a graded course by filing the proper form with the registrar; the deadline specified for resolving a grade of "incomplete" applies here (see INC below). Because they have the option of changing to a grade designation later, students should consider registering a course as pass/fail early in the semester.

Students should be aware that while a grade of P does not affect their grade point average, an F does. 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 four courses.

Grade Symbols. Instructors are required to report a grade for all students (except auditors) whose names appear on the class list. They grade their students using the following conventional symbols: **A**, **B**, **C**, **D**, and **F**. Students successfully completing a course pass/fail receive a **P**, while students successfully completing a designated satisfactory/fail course receive an **S**; in both cases, failure to complete the course successfully is indicated by an **F**.

Satisfactory/fail courses are those that do not use traditional grading procedures. Such courses or labs are designated in the *Schedule of Courses Offered* issued each semester by the registrar. They may be counted toward the completion of a major, but while an S does not affect the grade point average, an F does.

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 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:

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 working off 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. 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 go on probation or suspension when the "incomplete" is changed to a grade, either by an instructor or by default.

("other")—Instructors report this designation to the registrar when a student fails to appear for 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, it records the grade originally submitted. A designation of "other" is also used if an accusation has been made to the Honor Council. Again, students should be aware that they may go on probation or suspension when the "other" is changed to a grade, either by an instructor or by default.

W ("withdrew")—This designation appears for each course in which students are enrolled at the time of their withdrawal from the university. Courses dropped by students before the "late drop" deadline are removed entirely from the transcript. Courses dropped, with the approval of the Committee on Examinations and Standing, after the deadline receive a W. When requests for late drops are denied by the committee, the registrar records the submitted grade. See "Voluntary Withdrawal and Readmission" under Withdrawals and Leaves (page 39) for rules concerning withdrawal in the last five weeks of classes.

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 (see below) or determine minimums for academic performance, letter grades are numbered as follows:

Grade	*Grade Points*
A	4.00
B	3.00
C	2.00
D	1.00
F	0.00

Instructors may attach plus and minus signs to every grade except F. In those cases, one-third of a grade point is added or subtracted, respectively. It is general university grading practice to give pluses and minuses. The Committee on Examinations and Standing has drawn up guidelines on grading for the information of faculty and students.

Grade Point Averages. Grade point averages are calculated as follows. For each course, 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 may 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 and satisfactory/fail courses may not be counted.) Approximately 30 percent of all 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 eight semesters.

Academic Discipline

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 elected or appointed office, nor are they allowed to enroll in more than 17 semester hours.

Academic Suspension. Students are suspended from the university at the end of any semester if they:

- Earn grades that will place them on academic probation a third time
- Have a grade point average for the semester that is less than 1.00 (exceptions are made for students completing their first semester at Rice)

Students readmitted after a period of suspension will be suspended again if in any succeeding semester they fail to meet at least one of the following requirements:

- A cumulative and semester grade point average of at least 1.67
- A semester average of at least 2.00

The first suspension period is normally one semester; the second suspension period is at least two semesters. Students are not readmitted after a third suspension.

Students are suspended as soon as a responsible university official, normally the registrar, learns that their performance has been such as to place them on suspension. Suspension is lifted the first day of class of the semester when the student returns to the university. When students serve the nominal term of suspension but do not intend to return to Rice, suspension is lifted after permission from the Committee on Examinations and Standing is granted.

For students facing a first or second academic suspension who can show the registrar that they can complete their degree requirements in one semester if allowed to return, the suspension is reduced to probation. Students may invoke this ruling only once for a given academic degree plan.

Students who graduate at the end of a semester under academic circumstances that would normally place them on probation or suspension will not have the terms "academic probation" or "suspension" placed on their transcript for that semester.

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 a 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 pro-rated from the official date of suspension, which is determined by the Registrar's Office. While on 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 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 readmitted. 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 affect 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 normally readmitted after they submit a written application to the Committee on Examinations and Standing. 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 38).

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 the Student Health Service, 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 Committee on Examinations and Standing 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 39).

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 who intend to transfer credit back to Rice must complete an Approved Leave 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 Regulations

Students enrolled in four- (or five-) year bachelor's programs may decide whether to operate under the academic regulations 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 operate under the regulations in effect at the time of their last readmission. 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.

Academic Advising and Tutorial Programs

Freshman and sophomore students consult with academic advisers through their residential colleges. In a program overseen by the college masters, more than 150 faculty associates are available to give broad, general advice to students as well as to provide specific information about individual disciplines. Also available within each college are faculty members designated as "divisional advisers," who represent the Schools of Humanities, Social Sciences, Natural Sciences, and Engineering. They advise students whose prospective majors fall into their particular divisions and approve their course schedules, including those classes students wish to drop or add. Majors in music and architecture obtain course approval from academic advisers in the Shepherd School of Music and the School of Architecture.

Once students designate a departmental major, usually in their fourth semester, they go to the major department (or departments in the case of a double major) for academic advising and course approval. Area majors obtain approval from the Office of Academic Advising, which operates in conjunction with the academic departments involved.

Office of Academic Advising

The director of academic advising, assisted by faculty associates, is the administrative liaison between the academic departments and the college advising system. The director maintains an up-to-date file on departmental course requirements, coordinates a tutorial program, provides training for faculty and peer advisers, and organizes the exchange of course information among students, advisers, and departments.

Programs that cross academic disciplines—area majors, preprofessional advising, and fellowships—are the director's responsibility, as are programs like Majors Day and Orientation Week Academic Fair, both of which inform students about academic options within the Rice curriculum.

The Office of Academic Advising also supplies general academic information, brochures and application forms for foreign study and exchange programs, information on prestigious national fellowships (e.g., Rhodes, Marshall, and Luce), and application packets for various graduate admissions tests (e.g., GRE, MCAT, LSAT, and GMAT). Faculty advisers are available to counsel students with academic problems or questions and those students applying to graduate school.

Rice Tutoring Program

This program provides free assistance to undergraduate students having difficulty with courses. Students who are having academic difficulty and students who need tutoring or who would like to serve as tutors should contact the Office of Academic Advising for more information.

Summer School

Rice Summer School offers courses for credit to Rice students, visiting undergraduates, graduate students, and Class III students (see page 93); 6 to 8 semester hours are considered a full load. Interested students should complete the application form found in the Summer Programs catalog. Admission is automatic for any Rice undergraduate or graduate student in good standing. Visiting students must send official transcripts (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 Program 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 in the Summer Programs catalog. 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 1999 tuition and registration information, students should contact the Rice Summer Program Office at 713-527-4803 or visit the website 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 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 testing.

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 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, a 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 may apply for the fall semester only. Other applicants may apply to enter the fall or spring semester, except for architecture applicants who may enter only the fall semester.

Applicants are selected on a competitive basis in six academic divisions: (1) architecture, (2) engineering, (3) humanities, (4) music, (5) natural sciences, and (6) 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 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 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	Laboratory science	2
Social studies	2	(e.g., biology, chemistry, physics)	
Mathematics	3	Additional credits in above-	3
A foreign language	2	listed areas	

The natural science and engineering divisions require trigonometry 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.

Recommendations. Candidates must submit evaluations from a 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. Applicants to humanities, social sciences, architecture, and music divisions must take the SAT II tests in writing and two other subjects of their choice. Natural sciences applicants are required to take a writing, a math, and a science test. Engineering applicants must take a writing, a math, and either the chemistry or physics test. Home-schooled students must take five SAT II tests, one in each of the following areas: writing, math, science, social sciences, and foreign language.

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 an 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 make any additional applications, and must accept Rice's offer of admission by submitting a $100 nonrefundable deposit by January 3. 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 completing the Early Decision Financial Aid Form, which is sent by the Office of Financial Aid in November to Early Decision applicants. Note that **official** financial awards may be made only after the Office of Financial Aid has received the three following documents (all of which can be completed only **after** January 1): the Free Application for Federal Student Aid (FAFSA), the Rice University Financial Aid Form, and copies of the family's IRS tax returns with all schedules and attachments.

Interim Decision Plan. First-year applicants who complete their standardized testing on or by the December testing dates and who postmark all other materials by December 1 may be considered under the Interim Decision Plan. Decisions are mailed by February 10. The committee will admit, defer, or deny Interim Decision applicants.

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

Interim Decision applicants who are offered admission must make 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 make 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 make 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 make 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.

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
- SAT I or ACT scores
- $35 application fee

Applications with the appropriate documents must be postmarked by April 1 for fall term admission and November 1 for spring term admission. Notification of the admission decision is mailed by June 1 and December 15, respectively. The criteria used in evaluating transfer applications are similar to those applied to applicants for the first-year class, except that special emphasis is given to performance at the college level. Because of the highly competitive nature of transfer admission, it is recommended that applicants have a minimum 3.20 (4.00 scale) grade point average on all college work. The SAT I or ACT must be taken by April for fall application and October for spring application. The SAT II is not required.

Students for whom the $35 application fee creates a hardship may apply for a waiver. Transfer applicants must send a copy of the Student Aid Report that they receive after completing the Free Application for Federal Student Aid (FAFSA) along with a request for a fee waiver to the Office of Admission. Financial stress created by application fees to other institutions is not considered a valid reason to grant a fee waiver.

Transfer students must be registered in residence at Rice for at least four full semesters during the fall or spring terms and must complete no fewer than 60 semester hours before earning a Rice degree.

Advanced Placement/International Baccalaureate/Placement Tests

Students who score a 4 or 5 on the Advanced Placement College Board examinations before matriculation at Rice are given university credit for corresponding Rice courses.

Students who earn the International Baccalaureate diploma will receive credit for individual higher-level exams for which they receive a score of 6 or 7. Students from high schools that offer International Baccalaureate courses but not the diploma will receive credit according to the same criteria.

During Orientation Week, a test on calculus with elementary functions is given. This test will also be given the first day of classes of the spring semester. Satisfactory performance results in credit for MATH 101. (A fee of approximately $35 is charged for taking the test.)

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

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 a 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 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. For example, applicants already holding a B.A. may apply only to B.S. programs, and vice versa. The application, a $35 application fee, official transcripts of all undergraduate and graduate work, two letters of recommendation 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 semester admission is June 1 and the deadline for the spring is November 1.

Second degree applicants with a prior bachelor's degree from Rice should apply in writing to the Committee on Examinations and Standing in care of the vice president for student affairs.

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.

Tuition for new students is $640 per semester hour plus an $85 registration fee, the total not to exceed $7,675. 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 1999–2000 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 $230 per course per semester. All others are charged $460 per course per semester for the privilege of auditing.

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 January 4. The following costs apply to undergraduates in the 1999–2000 school year:

Tuition	**Annual**	**Semester**	**Hour***
Entering first-year and transfer students and other students	$15,350	$ 7,675.00	$640
Students matriculating in 1998–99	$14,900	$ 7,450.00	$621
Students matriculating in 1997–98	$14,350	$ 7,175.00	$598
Students matriculating in 1996–97	$13,650	$ 6,825.00	$569
Students matriculating in 1995–96	$12,750	$ 6,375.00	$532
Students matriculating in 1994–95	$11,700	$ 5,850.00	$488

Fees	**Fall**	**Spring**	**Annual**
Student activities**	$ 74.30		
Athletic events	$ 85.00		
College	$ 50.00		
Health service	$110.00	$110.00	
Shuttle	$ 17.00		
Total fees	$336.30	$110.00	$446.30

Room and Board	**Annual**	**Semester**
Room	$ 3,700	$ 1,850
Board	$ 2,900	$ 1,450

*By special permission.

**Fifth-year students in professional degree programs and students working toward a second bachelor's degree may pay a reduced student activities fee of $4.70, which covers the Student Association, University Court, and Honor Council portions of the activity fee, and elect not to pay the college fee.

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 six years. After six years, students pay the tuition applicable to the entering freshman 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. Refunds for first-year students who are federal (Title IV) aid recipients are prorated in accordance with the Higher Education Amendments of 1992 and any related regulations.

For students withdrawing after the second week of classes in a semester, fees or special charges (see page 49) 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 withdrawing at any time forfeit the $100 registration deposit they paid as incoming students.

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 student affairs. 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 1999–2000, the annual room and board charge for residence in a residential college is $6,600. This charge provides room and all the meals eaten during the year.

Housing. About 65 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 lease agreement. To reserve their space, current students must sign a lease 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 priced on an à la carte basis with the exception of four prepaid dinners included in the total room and board charge. The colleges provide three meals per day, Monday through Friday, and a continental breakfast and brunch on Saturday and Sunday. Meals are not served during the Thanksgiving holidays, at the midyear break, over the fall and spring midterm recesses, and during spring holidays. Information on optional meal plans is available from the College Food Service.

Payments and Refunds. Students may pay their residence fee in installments. The exact amounts and due dates appear in the Residential Lease 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 (pages 30–31).

Orientation Week room and board (required for all new students)	$150
Late application fee for Class III students	$ 55
Part-time registration	$ 85
Orientation Week college fee (paid to the individual college)	$110
College social activities fee (paid to the individual college)	$ 15
Late registration	$ 80

Health Insurance

All Rice students must have health insurance. Students may purchase insurance for the 1999–2000 school year through the university program developed for Rice students at a yearly premium of $778 (Plan A) or $685 (Plan B). Coverage is effective from 12:01 A.M., August 15, 1999, until 12:01 A.M., August 15, 2000. Dependent coverage is also available. Both the Cashier's Office and the Office of Student Activities have application forms and policy descriptions. Students who already have medical insurance must obtain a waiver form showing proof of insurance, sign it, and return it to the Cashier's Office by August 10 to avoid being charged automatically for insurance.

Teacher Certification Program Fees

Students enrolling in the student teaching apprenticeship or internship plans must pay a $160 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 in 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 Registrar's Office. 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 program at Rice provides assistance to meet the costs of university attendance for all admitted students who demonstrate computed financial eligibility. Through grants, low-interest loans, campus work opportunities, or a combination of these programs, Rice attempts to give students sufficient aid 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 grant and loan programs, a state grant program, and the Rice tuition grant program also provide funds. Awards are based primarily on financial need.

The university determines need using information supplied by students in the Free Application for Federal Student Aid (FAFSA). "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, 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 *Rice University Financial Aid* explains the assistance program in detail. Copies are available from the Office of Admission or the Office of Financial Aid. The university also publishes budgets that realistically summarize student expenses, including living costs at home and on or off campus, personal expenses, and travel.

Application

To apply for financial assistance, students must:

- Complete and return the Rice University Application for Financial Aid
- File the Free Application for Federal Student Aid (FAFSA)
- Provide a photocopy of their parents' and their own W2 forms, IRS 1040, 1040A, or 1040EZ

Rice considers applicants for all appropriate assistance administered by the university, including grants, scholarships, loans, and work. Students receive notification of awards once their financial aid file is complete. Early-decision candidates are mailed a Rice University Financial Aid Application in October.

Financial aid awards are made annually. Payment terms are specified in the award letter. Because financial circumstances change from year to year, Rice conducts an annual review of need and awards to make corresponding adjustments. 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.

Low-Interest Financing

Meeting the costs of higher education in a private university may be difficult even when the usual analysis indicates no need for financial aid. Although a family's financial situation may be adequate to cover the cost of tuition, fees, and room and board without financial aid, Rice understands that payment of relatively large sums at stated times may create hardships or require sacrifice. The university offers two payment plans to enable families to finance the students' educational costs. Both require low-interest charges.

A **deferred payment plan** divides each semester's charges over four installments. Students arrange for deferred payment through the Cashier's Office. Applications and details are available each semester at the time of billing. **Longer-term financing** is available to eligible students through the Federal Direct Parent Loan for Undergraduate Students. Applications are available in the Office of Financial Aid, and Rice will arrange processing where needed.

Financial Aid Policy

Undergraduates may receive financial aid for 10 semesters. The one exception is the Rice tuition grant (see Section C of *Rice University-Financial Aid Policies and Procedures)*. All semesters for which students have an active transcript in the Registrar's Office count in the 10-semester limitation whether they have received financial aid or not.

Satisfactory Progress Policy for Financial Aid Recipients. The Higher Education Act of 1965, as amended by Congress in 1980, 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

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.

Termination of Aid and Appeal. The Office of Financial Aid 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 Committee on Admission and Student Financial Aid. Students should send their appeals in writing to the chair of the committee, which may take into account mitigating circumstances.

Regaining Eligibility. To regain eligibility, students must address a letter of petition to the Committee on Student Financial Aid, following the procedures for the readmission of suspended students; see "Readmission After Suspension" (pages 38–39). Suspended students readmitted by the Committee on Examinations and Standing need not petition the Committee on Student Financial Aid.

Student Loan Funds

The Office of Financial Aid awards Perkins Loans and William D. Ford Federal Direct Loans to help students meet the self-help portion of aid included in university financial aid policy.

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.

Student Employment

Jobs are available either on or off campus for students interested in working part time during the academic year. Students seeking employment should apply directly to the Office of Financial Aid.

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.

Students with visual handicaps should contact the Texas State Commission for the Blind.

Scholarships and Awards

Scholarships and awards at Rice include the following:

General Awards and Scholarships

Leo M. Acker Memorial Scholarship
Joe L. and Barbara Allbritton Scholarship
Helen and Herbert Allen Scholarship
Herbert Allen Scholarships
Florrie Ethel and M. E. Andrews Scholarship
Robert and Elaine Andrews Scholarship
Mary Bentley and Kingsland Arnold Scholarship
Samuel S. Ashe Scholarship
Asian American Youth Organization Scholarship
Astronaut Fund

Max Autrey Memorial Scholarship
Axson Club, Sarah L. Collins Scholarship
Axson Club, Pauline M. Crouch Scholarship
Axson Club, Special Scholarship Honoring Mrs. A. S. Foote
Axson Club, Katie B. Howard Scholarship
Axson Club, Elanor Trotter Huddleston Scholarship
Axson Club, Margaret Owens and Samuel K. McLelland Memorial Scholarship
Axson Club, Dr. Margaret Rose McLelland Scholarship
Axson Club, Lucille Vaughan Endowed Scholarship
Axson Club, Ellen Axson Wilson Scholarship
Graham Baker Studentship
James A. and Alice Graham Baker Distinguished Scholar
James A. and Alice Graham Baker Honor Scholars
Lee E. Baker Memorial Scholarship
James Foulds Barbour Scholarship
Eric and Arabella Beall Scholarship
Albert L. Beerman Memorial Scholarship Fund
H. Leroy Bell Scholarship
Bhatia Foundation Asian American Scholarship
Mr. and Mrs. Val T. Billups Scholarship
Paul Frederick Bobb Award
Beverly and Donald Bonham Scholarship
Tom W. Bonner Scholarship
Linda Burge Bramlett Memorial Scholarship
Weldon Brigance Scholarship
Fletabel Denton Briggs Memorial Scholarships
Franz and Frances Brotzen Scholarship
Vandiver Brown Scholarship
Robbie N. Brunner Endowment Fund
Halora Adams Burleson Endowed Fund
Clyde and Ethel Butcher Scholarship
Harrianna Butler Scholarship
Daniel M. Caesar Scholarship Fund
E. Finley and Charlotte Reid Carter Scholarship Fund
Chapman-Bryan Memorial Scholarship
George Alva Chatfield, Sr., Scholarship
Rebecca Frances Burrell Chenault Scholarship
Barbara Long Chilton Scholarship
Class of 1921 Scholarship
Class of 1929 Scholarship
Class of 1930 Scholarship
Class of 1931 Scholarship
Class of 1932 Scholarship
Class of 1933 Scholarship
Class of 1934 Scholarship
Class of 1935 Scholarship
Class of 1936 Scholarship
Class of 1937 Scholarship
Class of 1938 Scholarship
Class of 1939 Scholarship
Class of 1940 Scholarship
Class of 1941 Scholarship
Class of 1942 Scholarship
Class of 1943 Scholarship

Class of 1944 Scholarship
Class of 1945 Scholarship
Class of 1946 Scholarship
Class of 1947 Scholarship
Class of 1948 Scholarship
Class of 1949 Scholarship
George S. Cohen Scholarship
Arthur B. Cohn Scholarship
College Bowl Champions Scholarship
College Women's Club Scholarship
Colonneh Club Scholarship
William Arthur Combs Scholarship
Millie Tutt Cook and Mildred Cook Scholarship
John W. Cox Research Fund for Scholarships and Fellowships in Bioengineering and Biosciences
Dr. Margaret Crofton Scholarship
Tom Crumpton Memorial Award
Kenneth Wallace Cunningham Scholarship
Daughters of the American Revolution, John McKnitt Alexander Scholarship
Daughters of the American Revolution, Fannie Bess Emer Montgomery Scholarship
Daughters of the American Revolution, Lady Washington Chapter Centennial Scholarship
Pradipta Kumar Day Scholarship
Decade 1975 Scholarship
Decade 1976 Scholarship
Thomas A. and Pauline M. Dickson Scholarship
Edith Jo Leeseman Dissinger Scholarship
Laurine Wade Douglas Scholarship
Thomas P. and Maude Seeger Dow Scholarships
Samuel Rhodes Dunlap Scholarship
Nan Gayle Dupont Scholarship
James H. Durbin Scholarship
C. A. Dwyer Scholarship
James H. and Minnie M. Edmonds Scholarship
T. C. Edwards Scholarship
Epoch Matching Funds
Paul and June Farren Scholarship Fund
Catherine Goodrich Fay Scholarship
Rodney A. and Elizabeth Gilbert Finlayson Fund
John R. and Ila Morgan Fisk Scholarship
Harriet and Joe Foster Endowed Scholarship in Memory of Charles "Harry" Dorman and Jean Elton Dorman
Thomas Flaxman Scholarship
Thomas R. and Julia H. Franklin Scholarships
Joe Gallegly Scholarship
Gee Family Scholarship
General University Scholarship Fund
George Foundation Scholarship
Getola and Verveer Families Scholarship
Mary Parker Gieseke Scholar
Susanne M. Glasscock Scholarship
Herbert Godwin Endowment Fund
Richard P. Goodwin Scholarship
H. Frank Goss and Janice H. Goss Scholarship
Richard L. Grider Scholarship

Marjory Meyer Hasselmann Scholarship
William Randolph Hearst Scholarship Endowment Fund
James D. Henry Scholarship Fund
Annette Schreiber Hill and William Bruce Hill Scholarship
Christopher Scott Hoelscher Scholarship
Lionel B. Hohenthal Scholarships
John G. and Elsa S. Holland Endowed Scholarship
Washington Cone Holliman Scholarship
Honors Scholarship
Houston Junior Chamber of Commerce Foundation International Program
Lillian and Carl Illig Scholarships
Mercer T. Ingram Scholarship
Interfaith Charities Scholarship
Max Henry Jacobs Scholarship
Meredith H. James Scholarship
Jameson Fellowship
Janus Award
Alfred R. and Eleanor H. Johnson Scholarship
Gaylord Johnson Scholarship
Grant William Jordan and Cora Jordan Memorial Scholarships
John T. King Scholarship
J. Roderick Kitchell Endowment Fund
Alan Kyle Scholarship
Dr. York Lancaster Memorial Scholarship
Carolyn Walker Lard Scholarship
Julia Merle and Roy Lay Scholarship
Leadership Award
A. C. Lederer, Jr., Scholarship
Patrons of E. L. Lester and Company Scholarship
Mason G. Lockwood Engineering Scholarship
The Lottman Scholarships
Daniel B. and Mary H. Lovejoy Scholarship
Genevieve Parkhill Lykes Scholarship
J. Everett McAshan Scholarship
Margaret Brokaw McCann Scholarship
John Charlton McCoy, Jr., Scholarship
William A. McElroy Scholarship
Michael Vincent McEnany Award
J. L. C. McFaddin Scholarship
W. P. H. McFaddin Scholarship
John P. McGovern Outstanding Premedical Student Award
Emma S. McGree Scholarship
Bayliss McInnis and Family Scholarship
James G. and Alberta Matteson McMurtry Scholarship
Nancy Mauney Mafrige Scholarship
Helen South Martin Scholarship
Franklin G. and Harriet Chelgren Meck Scholarship
Hope and Byron Meredith Scholarship
Gilbert A. Metz, Jr., Scholarship
Achille and Malline Meyer Memorial Scholarship
Edmund B. Middleton Scholarship
John and Harriet Millington Scholarship
Earl Douglas Mitchell Scholarship
Mobil Scholarship

Frances Black and Raymond Moers Scholarship
Elizabeth Morford Scholarship
Berney L. Morgan Scholarship
W. Kyle Morrow, Jr., Scholarship
James R. Morrison Endowed Scholarship
Motheral-Neilan Scholarship
Leon M. Nad Scholarship
Ida R. and Hanna E. Nussbaum Scholarship
Rebecca Raphael and Lily G. Nussbaum Scholarship
Charles Breckenridge Parkhill Scholarship
J. H. Pearlstone Memorial Scholarship
Raymond Pearson Scholarship
Peregrine Award Fund
Mrs. Carter Harris Prather Endowed Fund
Presidential Scholarship
Elsie Rachlin Scholarship
Emanuel and Mose Raphael Scholarship
Robert H. Ray Memorial Scholarships
Ernest R. Rechel Memorial Scholarship
William J. Reckling Memorial Scholarship
Randy T. Reese Memorial Scholarship
The Jesse and Lois Reynolds Scholarships
Rice Sponsored National Merit Scholarships and National Achievement Scholarships
William Marsh Rice Scholarships
Morty Rich Community Service Scholarship
Mrs. L. A. Richardson Scholarships
Captain Torkild Rieber Award
Daniel Ripley Scholarship
Edith Ripley Scholarship
Dwane Rivers Scholarship in Chemical Engineering
Fred S. Roberts Scholarship
John M. Roberts Memorial Award in Materials Science
Carl A. Robertus and Ellen J. Robertus Scholarship in Science
James M. and Sarah Rockwell Scholarships
Pamela Davis Rogers Scholarship
Catherine Withers Roper and Benjamin E. Roper Memorial Scholarship
Volney J. Rose Scholarship
Willie Rowell and Ruth Andrews Scholarship
Max Roy Scholarships
David Miller Rulfs, Jr., Scholarship
Carrie Samman and William D. Samman Endowed Scholarship
Susan T. Scanlon Scholarship
Roland and Claire Schmitt Scholarship
Mr. and Mrs. Mose M. Schwartz Scholarship
Anita and Campbell Sewall Scholarship
Leo S. Shamblin Scholarship Fund
Lee Sharrar Scholarship
Evelyn Slomovitz Memorial Scholarship
John Treanor Smith and Margaret Bickley Smith Endowed Scholarship
William A. and Madeline Welder Smith Endowed Scholarship Fund
Society of Rice University Women Scholarship
Southland Paper Mills Foundation Scholarship
Richard Steed Scholarships
Selden D. and Virginia H. Steed Scholarship

Stewart Memorial Scholarship
Harriet May Stewart Endowed Scholarship Fund
Sara Stratford Scholarship
Student Affairs Fund Honoring Anna Chavanne and J. T. McCants
Nola McCarty Symms Scholarship
Hope Pierce Tartt Scholarship
James U. and Margot Teague Scholarship
Beth Turner Scholarship
USX Foundation Scholarship
University Scholars
University Scholars Scholarship
Herschel M. Vaughan Student Scholarship
John B. Warren, Jr., Scholarship
Abe and Rae Weingarten Scholarship
Harris Weingarten Scholarship
Elizabeth Aldridge Wells Scholarship
Gordon R. West Scholarship
Blanche White Honor Scholarship
Charles K. and Maidie Autry Wilbanks Student Fund
Leah Jean Benke Wilbanks Memorial Scholarship
Dorothy Lottman Williams Scholarship
Willoughby C. Williams Scholarship
Eugene L. and Annie Maye Wilson Scholarship
Homer M. Wilson, Jr., Endowed Scholarship
Ervin Kenneth Zingler Scholarship
Frank and Patricia Crady Zumwalt Scholarship

Awards and Scholarships in Departmental Disciplines

Architecture
Alpha Rho Chi Award in Architecture
American Institute of Architects School Medals
AIA/AIAF Scholarship
Edward B. Arrants Award in Architecture
Rosemary Watkin Barrick Traveling Fellowship
Berda and Charles Soon Chan Memorial Scholarship
James H. Chillman, Jr., Prizes
John Crowder Memorial Scholarship
William D. Darden Medal
M. N. Davidson Fellowships
Featherlite Scholarship in Architecture
Margaret Everson Fossi Traveling Fellowship
Gensler Scholarship
Gene Hackerman Scholarship
Ralph S. Herman Memorial Scholarship
Jameson Fellowship
Jesse H. Jones Scholarship in Architecture
Roderick M. Jones Scholarship
McGinty Scholarship Fund
John T. Mitchell Memorial Fund
Morris R. Pitman Scholarship Fund
Louis Sudler Prize in the Arts
Texas Architectural Foundation Awards
William Ward Watkin Traveling Fellowship

Art and Art History
Art Supply Award
Kyriakouli Bitzes Scholarship
Dawn M. Gross Award
Jameson Fellowship for American Decorative Arts
Mary P. B. and John W. Lovell Endowed Scholarship
Mavis C. Pitman Memorial Prize in Art
Christine Croneis Sayres Memorial Art Award
Louis Sudler Prize in the Arts
Texas Art Supply Company Award

Athletics
George L. Alexander, Jr., Memorial Scholarship
J. D. Bucky Allshouse Athletic Scholarship
Cynthia Allshouse Women's Athletic Scholarship
D. Kent and Linda Anderson Foundation Athletic Scholarship
Pat Bailey Scholarship in Athletics
Baseball Scholarship Honoring Wayne Graham
Lester Bendix Memorial Scholarship Fund
Robert E. and Elizabeth W. Bixby Athletic Scholarship
Dick Brannon Scholarship in Athletics
Hubert E. Bray Scholar Athlete of the Year
George R. Brown Football Awards
Emmett Brunson Award
Buckley Baseball Scholarship
Jimmy Burke Memorial Scholarship Fund
John S. Cardwell Football Scholarship
Michael Carter Athletic Scholarship
Joe Bailey Collins Athletic Scholarship
Class of 1971 Athletic Scholarship
Community of Winners Scholarship
John L. Cox Athletic Scholarship
Tom and Patricia D. Cox Endowed Scholarship in Athletics
Tom Crumpton Award
Billy Ed Daniels Scholarship
Tom and Charlotte Daniels Athletic Scholarship
Allen and Beverly Eggert Athletic Scholarship
Allen Eggert Athletic Scholarship
Terry and Pat Eska Football Scholarship
Tom J. Fatjo, Jr., Golf Scholarship
Walter W. Fondren, Jr., Memorial Scholarship
Jim and Patti Fox Athletic Scholarship
The Albert P. George Scholarship
Camille and Meredith George Scholarship for Women's Athletics
Larry and Karen George Athletic Scholarship
The Mamie E. George Scholarship
W. Thad Gilliam and Family Athletic Scholarship
Elizabeth Gillis Women's Athletic Scholarship
Malcolm and Elizabeth Gillis Athletic Scholarship
Barton and Janette Gillman Athletic Scholarship
James W. Glanville Award
Susanne M. and Melbern G. Glasscock Basketball Scholarship
Susanne M. and Melbern G. Glasscock Golf Scholarship
Mr. and Mrs. Matt Gorges Athletic Scholarship

Wayne Graham Baseball Scholarship
Gene Hackerman Award
Gene Hackerman Scholarship for Women's Athletics
Norman Hackerman Women's Athletic Scholarship
Billy and Ruby Hale Athletic Scholarship
Courtney Hall Athletic Scholarship
David Hall Baseball Scholarship
Lawrence A. Hamilton Endowed Scholarship
Catherine Hannah Award
Joyce Pounds Hardy Award
Claude Harmon Scholarship
Ken and Sandy Hatfield Athletic Scholarship
Martha E. Hawthorne Athletic Scholarship
Leota Meyer Hess Endowed Fund
Ann E. and Bruce I. Hendrickson Athletic Scholarship
Ben and Starlett Hollingsworth Athletic Scholarship
Ben and Starlett Hollingsworth Athletic Scholarship II
Ben and Starlett Hollingsworth Athletic Scholarship III
Houston Comets Women's Athletic Scholarship
Daniel A. Hyde Women's Athletic Scholarship
Carl E. Isgren Scholarship
Carl and Kathy Isgren Athletic Scholarship
Guy and Clare Jackson Athletic Scholarship
Gaylord Johnson, Jr., Athletic Scholarship
Mineola Johnson Memorial Scholarship for Baseball
Donald N. Jordan, Jr., Athletic Scholarship
Walter Banard Joseph and Aline L. Joseph Fund
Kay Pearson Keating Award
Ron and Ella Lee Lassiter Athletic Scholarship
Eva Jean Lee Award
Nolan Lehmann Athletic Scholarship
Leigh Leman Volleyball Scholarship
Lifechek Drug Track Scholarship
Jim and Mary Ann Limmer Athletic Scholarship
Joe F. Lipscomb Freshman Award
Nancy Mauney Mafrige Athletic Scholarship
Ed Manderson Tennis Scholarship
I. W. and Diane G. Marks Athletic Scholarship
George Martin Award
T. S. Martino Scholarship
Leigh Masterson Award for Golf
J. R. "Bobby" May Track Scholarship
Harry W. McCormick Scholarship
George and Elaine Miner Athletic Scholarship
George Miner Athletic Scholarship Honoring Red Bale
George Miner Athletic Scholarship Honoring Martha Hawthorne
Dell Morgan Award
Mr. and Mrs. John W. Morrow, Jr., Athletic Scholarship
Jess Neely Football Awards
Neely-Davis Scholarships
Johnny Nichols Athletic Scholarship
Owl Club Endowment
Fred and Mabel R. Parks Foundation Endowed Athletic Fund
John Plumbley Memorial Award

Hally Beth Poindexter Award
Al Poujol Athletic Scholarship
Robert Pilcher Quin Award
"R" Association Award
Robert H. Ray Scholarship Award for Men's Basketball
Rice University Scholar Athlete Award
Rice University Baseball Scholarship Honoring Wayne Graham
RU Honor Athlete Award
Charles R. and Paula M. Robinson Athletic Scholarship
Arthur and Karen Rogers Endowed Scholarship for Athletics
Bob Rule, Sr., Athletic Scholarship
Jeffrey D. Ryan Women's Athletic Scholarship
Don and Chris Sanders Athletic Scholarship
Steve Schroeder Memorial Track Scholarship
Jo E. and Jed Shaw Athletic Scholarship
Robby and Kathy Shelton Athletic Scholarship
J.W. Smelley Athletic Scholarship
Frank A. Smith Football Scholarship
Jerrol Springer Athletic Scholarship
Stancliff Award
Anne and Dick Stephens Athletic Scholarship
Harriet May Stewart Scholarship in Athletics
Albert M. Tomforde, Sr., Athletic Scholarship
Stephen and Leticia Trauber Athletic Scholarship
Anita and Temple Tucker Fellowship of Christian Athletes Scholarship
Mr. and Mrs. Robert B. Tudor, III, Athletic Scholarship
Doak Walker Scholarship Award in Honor of Trevor Cobb
Gene Walker Athletic Scholarship
Robert L. Waltrip Athletic Scholarship
Hugh C. Welsh Scholarship
W. M. Wheless Scholarship
Kenneth T. White, Jr., Athletic Scholarship
Hugh and Joe Ann Wilson Athletic Scholarship
George E. Wise Memorial Scholarship for Baseball
Billy Wohn Award
also Bing Crosby Loan Fund
Fred Wolcott Award
Philip R. Wood Athletic Scholarship
Melissa A. Woodruff Memorial Athletic Scholarship
John L. Wortham & Son, L.L.P., Athletic Scholarship
Sally Henderson Yates Women's Basketball Scholarship

James A. Baker III Institute for Public Policy
Meadows Foundation Student Fellowship Fund
Constantine S. Nicandros Public Policy Internships

Bioengineering and Bioscience
John W. Cox Research Fund for Scholarship and Fellowships in Bioengineering and Biosciences
Travel Fund in Biosciences and Bioengineering

Business Management
E. F. "Gene" Florian Scholarship
H. H. Galloway Scholarship
Houston Society of Financial Analysts Scholarship Award

Chemistry
Dr. Paul S. Engel Research Endowment in Chemistry
George Holmes Richter Memorial Fund
Bertha and Zevi Salsburg Awards
R. Howard and Elizabeth P. Wilson Endowed Scholarship

Computer Science
Torczon Scholarship

Economics
Blanche Randall Haden Scholarship
Omicrom Delta Epsilon Economics Essay Prize
Gaston V. Rimlinger Economics Essay Contest
Wall Street Journal Student Achievement Award
Ervin Kenneth Zingler Scholarship

Education
Donald I. Wood Award

Engineering
George Herder Allen Scholarship
Herbert Allen Merit Award
American Institute of Chemical Engineers, South Texas Section, Scholarship
Amoco Foundation Fellowships
R. C. Baker Foundation Scholarships
George R. Brown Scholarship
Brown Scholarships in Engineering
Buckley-Sartwelle Scholarship in Engineering
Harrianna Butler Scholarship
Alan J. Chapman Scholarship in Mechanical Engineering
Gerard A. Dobelman Memorial Scholarship
Steven G. Dobelman Memorial Scholarship
E. Baird Elfrink Memorial Scholarship
Albert Fanestiel Scholarship
Fluor Daniel Engineering Award
Orville and Margaret Gaither Endowed Scholarship
Gulf Foundation Scholarship
Joe M. Hamner Scholarship
Lillian Haynie Scholarship
James D. Henry Scholarship
Houston Engineering and Scientific Society Scholarship
Paul N. Howell Annual Award in Chemical Engineering
Jacobs Engineering Group, Inc., Scholarship
Charles Francis Cyrus Johnson Scholarship
Frederick M. Johnston Scholarship
A. C. Lederer, Jr., Scholarship in Civil Engineering
Paul Alois Lederer Scholarship in Civil Engineering
Mason G. Lockwood Engineering Scholarship
Walter Loewenstern, Jr., Scholarship in Engineering
Lottman Scholarship
John M. Lynn Endowed Scholarship
William M. McCardell Endowed Scholarship
McDermott Incorporated Scholarship

John Hubert Maness Scholarship in Engineering
Merritt-Gates Scholarship Fund
Gilbert A. Metz Scholarship in M chchcal Engineering
W. L. Moody, Jr., Scholarships in Engineering
Thomas W. Moore Scholarship in Chemical Engineering
Walter P. Moore, Jr., Memorial Scholarship Fund
Berney L. Morgan Scholarship in Mechanical Engineering
W. H. Muery Scholarship Fund in Electrical Engineering
NL Industries Scholarship
National Action Council for Engineering
National Society of Professional Engineers Scholarship
Oshman Scholarships for Women in Engineering
Lawrence A. Pelty and Lavine M. Pelty Scholarship in Civil Engineering
Meg Perkins Memorial Scholarship in Engineering
Jack C. Pollard Graduate Fellowship in Engineering
Randy T. Reese Memorial Scholarship
Rice Engineering Alumni Outstanding Engineering Student Awards
Hershel M. Rich Invention Award
Dwane M. Rivers Scholarship in Chemical Engineering
Phillip and Vera Robinson Endowed Scholarship in Honor of
Dr. Floyd Leer and Dr. Radislov Tsanoff
Ford and Mimi Rogers Scholarship
Shell Incentive Funds Scholarship
Mr. and Mrs. Samuel T. Sikes Scholarship in Mechanical Engineering
Samuel T. Sikes, Jr., Scholarship in Engineering
James Redding Sims Scholarship in Civil Engineering
Sohio Scholarship
Gilbert Adam Stoufflet Endowed Scholarship
Karl C. ten Brink Scholarship in Chemical Engineering
Texaco Scholarship
USX Foundation Scholarship
Louis J. Walsh Scholarships/Fellowships in Engineering
James S. Waters Creativity Award

English/Drama
Academy of American Poets Prize
Barbara Long Chilton Scholarship
Lady Geddes Competition in Writing
Genevieve Parkhill Lykes Scholarship
Susan T. Scanlon Scholarship
Monroe Kirk Spears Award
George Guion Williams Prize for Excellence in Creative Writing

French
Alliance Française Scholarship
Clyde Ferguson Bull Traveling Fellowship
Robert Edwin Moore Scholarship Fund
Pi Delta Phi André Bourgeois Award
William J. Reckling Memorial Scholarship

Geology and Geophysics
Chevron Scholarship
Devlin-Schnable Memorial Scholarship

Leroy Caleb Gibbon Award
Houston Geological Society Outstanding Scholar Award
W. M. Keck Foundation Fellowship in Geology and Geophysics
Eugen A. Merten Memorial Award
Captain Torkild Rieber Award
Captain Torkild Rieber Scholarship
W. A. Tarr Certificate
Sam P. Worden Award

German and Slavic Studies
Max Freund Prize in German
Earl Douglas Mitchell Fellowship

History
Kyriakouli Bitzes Scholarship
Mary Hayes Ewing Publication Prize in Southern History
Charles Garside Memorial Award in History
Jameson Fellowship
Barbara Field Kennedy Prize in American History
Clifford Lefton Lawrence Award in British History
Gus A. Schill, Jr., Endowed Fund
Captain Charles Septimus Longcope Award
Susie Smith Vandiver Scholarship
Willoughby C. Williams Scholarship

Human Performance and Health Sciences
G. L. Hermance Award in Physical Education
Jill Pitman Jones Award

Humanities
Catherine Goodrich Fay Scholarship
Marguerite G. Johnston Scholarship
Josephine Brummett Muller Scholarship

Italian
Italy in America Association of Houston Summer Scholarship
Donne Di Domani Scholarship
Enrico Caruso Award

Managerial Studies
Andersen Consulting Award in Managerial Studies
H. Russell Pitman Award in Managerial Studies
Wall Street Journal Student Achievement Award

Mathematical Science
Torczon Scholarship

Mathematics
Hubert E. Bray Prize in Mathematics
Frank Jones Scholarship in Mathematics
Robert David Maurin Scholarship in Mathematics
Willoughby C. Williams Scholarship

Military Science
American Legion for General Military Excellence Awards
American Legion/Andrew Jackson Memorial Award
Houston Chamber of Commerce Military Affairs Committee Award
Armed Forces Communications and Electronics Association Award
Reserve Officer Association Award Scholarship
Society of American Military Engineers Award
Society of American Military Engineers William S. Bailey Scholarship
Sons of the American Revolution Scholarship

Music
Ralph A. Anderson Scholarship for Chamber Music
William N. Barnard Memorial Fund
Cecilia Bartoli Scholarship in Music
Edward J. and Frances Bing Memorial Scholarship
Emma Pearl Byrne Endowed Fund
Alice Winston Carter Music Scholarship
Dr. Leon Clark Endowed Scholarship Fund
Compaq Computer Corporation Scholarship
Paul E. Craven Scholarship
Denson Endowed Scholarship for Percussion
Elva Kalb Dumas Prize in Music
Lillian H. Duncan Prize in Piano
Armando Ghitalla Scholarship
Frederick Royal Gibbons Memorial Award
William E. and Elva F. Gordon Scholarship
Michael Hammond Endowed Scholarship
Erwin and Emily Heinen Prize in Music
Winifred and Maurice Hirsch Memorial Scholarship Fund
Katie Walter Hubert Scholarship
Mr. and Mrs. C. M. Hudspeth Violin Scholarship
Carl and Lillian Illig Scholarship
Henry and Betty Jackson Scholarship
Frederick M. Johnston and Marguerite G. Johnston Scholarship
Mary Gibbs Jones Endowed Scholarship
Mary Root Kirkland Prize in Voice
Gwendolyn Jaster Lederer Scholarship in Piano
Larry J. Livingston Prize in Violin
Bertha Mallard Scholarship for Music Composition
Willie M. Muery Scholarship in Music
Dr. Joseph A. and Ida Kirkland Mullen Scholarship
Sallie Shepherd Perkins Prize in Music
Sara Meredith Peterson Scholarship
Burt Duke Raiza Prize in Piano
Rex Shanks, Jr., Memorial Scholarship in Music
Shepherd Society Awards and Scholarships
Samuel Morris Slack Music Scholarship in Brass
Dorothy Richard Starling Scholarships in Violin
Phyllis Burnell and Garrett Rezeau Tucker, Jr., Endowed Scholarship in Music
William H. Vernor, Jr., Scholarship
Logan C. and Ione G. Waterman Scholarship Fund
Dorothy Lottman Williams Scholarship
Eula and David Wintermann Scholarship

Naval Science
American Defense Preparedness Association Scholarship (ADPA)
Armed Forces Communications and Electronics Association Awards
Chief of Naval Education and Training Scholarship (CNET)
Distinguished Naval Graduate Award
Mary Henry Gibson Scholarship
Jesse H. Jones Naval Scholarship—A. A. Vandergrift
Jesse H. Jones Naval Scholarship—W. M. Halsey
Commander F. C. Johnson Award
Military Affairs Committee, Houston Chamber of Commerce Award
Navy League Award
Reserve Officers Association Award
C. Grady Smith Memorial Award
Society of American Military Engineers Award
Texas Society—Sons of the American Revolution Award
United Services Automobile Association Scholarship Award
United States Naval Academy Alumni Association Award
Wallace Endowed Scholarship

Philosophy
Jacob and Babette Atlas Prize in Moral Philosophy
Professor Konstantin Kolenda Endowed Fund
Frank Moser and Professor R. A. Tsanoff Scholarship
Hilda Atlas Rich Scholarship
Tsanoff Undergraduate Essay Prizes

Physics
Tom W. Bonner Prize in Physics
Claude W. Heaps Prize in Physics
Wallace Endowed Scholarship

Political Science
Charles Breckenridge Parkhill Scholarship in Political Science

Religious Studies
Aparicio Prize
Edith Jo Leeseman Dissinger Scholarship

Rice Institute for Policy Analysis
Shell Scholar in Public Policy

Science
H. Gordon Davis and Bernice Davis Memorial Scholarship Fund
J. E. Foster Scholarship in Science
Lillian and Carl Illig Scholarships
Meg Perkins Memorial Scholarship in Science

Sociology
Walter and Helen Hall Prize
Weber-Durkheim Prize for Excellence in Sociology

Space Physics
A. J. Dessler Undergraduate Scholarship
The William and Elva Gordon Graduate Fellowship
The William F. Marlar Graduate Scholar

Spanish, Portuguese, and Classics
Barzan Scholarship for Summer Study Abroad
Ruth Lee Kennedy Fellowship for Studies in the Golden Age of Spanish Literature
Sacks Scholarship for Summer Study Abroad
Summer Program in Spain Scholarship
Tsanoff Scholarship for Summer Study Abroad
Robert Wells Scholarship for Summer Study Abroad

College Awards
Marie Alexander Leadership Award
Athenian Awards
Donald R. Baker Scholarships
H. E. Bray Freshman Award
Franz and Frances Brotzen Award
Daniel M. Caesar Memorial Award
Patrick Gordon Memorial Award
Joe M. Hamner Scholarship
J. Dennis Huston Sports Award
Jones College Scholarships
Jones Master and President Award
Margaret J. Jordan Endowment Fund
Leeds Award for Excellence in Scholarship
Alan A. Lewis Memorial Scholarship
Geoffrey James Norris Memorial Scholarship
John E. Parish Fellowship
Richardson College Master's Award for Excellence in Scholarship
Z. W. Salsburg Award
Jackie Schnell Memorial Scholarship
Graham C. Stebbings College Service Award
Corrinne and Radoslav Tsanoff Sophomore and Junior Prizes
Harry Carothers and Olga Keith Wiess Scholarship
Olga Keith Wiess Award
Barbara Bennett Willis Scholarship
S. P. Worden Endowment for Will Rice Award

In addition to the above awards, Rice is invited to nominate students for several scholarships and fellowships that provide funds for foreign study and travel or later graduate work. Final selections for these awards are made nationally or regionally.

Ora N. Arnold Travel Fellowship
Edwin, Frederick, and Walter Beinecke Memorial Scholarship
Franz and Frances Brotzen Travel Award
Churchill Scholarships
Danforth Fellowships

Fulbright-Hays Scholarships
Goliard Travel Scholarship
Roy Jones Fellowship in Russian Studies
Latin American Scholarship Program of American Universities, Inc. (LASPAU), Scholarships
Henry Luce Scholarships
Marshall Scholarships (British)
Rhodes Scholarship (British)
Sherman, Texas, Travel Award
Harry S. Truman Scholarships
Wagoner Scholarships for Study Abroad
Thomas J. Watson Fellowships
Woodrow Wilson Doctoral Dissertation Fellowship in Women's Studies
Zonta International Amelia Earhart Aerospace Award

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)

Delta Phi Alpha—to promote an interest in the German language and literature (Gamma Xi chapter at Rice: April 1949)

Sigma Delta Pi—to promote an interest in the Spanish language and literature (Rice chapter: May 14, 1953)

Tau Sigma Delta—national honor society in architecture and applied arts (Tau chapter at Rice: May 7, 1961)

Eta Kappa Nu—founded in 1904 at the University of Illinois for electrical engineering students, to stimulate and reward scholarship as well as assist and encourage its members to grow professionally throughout their lives (Rice chapter: January 1981)

Omicron Delta Epsilon—to promote study in economics (Rice chapter: 1981)

Psi Chi—founded in 1929 at Yale University to encourage, stimulate, and maintain excellence in scholarship and to advance the science of psychology (Rice chapter: April 23, 1990)

Undergraduate Student Life

Residential Colleges

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

Each college has faculty masters who live in a house next to the college. Answering to the president of the university, 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 room in its on-campus residential colleges for about 65 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 entrées, whenever possible, to accommodate students' religious practices

For more information on room and board, see Living Expenses (pages 48–49).

College Courses. One of the colleges' important activities is their sponsorship of courses and workshops open to all students. By expanding course offerings outside the

traditional departments, college courses promote the academic involvement of the colleges while introducing students to interdisciplinary topics of particular interest.

Students propose college courses during the semester before they are offered. Once approved by the masters and faculty associates of the college and by the vice president for student affairs, these college courses are offered for academic credit on the same basis as departmental courses. The registrar provides a list of college courses each semester during preliminary registration.

College workshops, generally providing instruction in practical skills, carry no academic credit and do not appear on a student's permanent record. They may meet regularly throughout the semester or within a limited time as short courses.

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 eight college presidents, and eight 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, the assistant dean for student judicial programs, or the Judicial Affairs Committee, as appropriate. Final appeal is to the vice president for student affairs. The student-staffed Honor Council conducts hearings and trials for alleged offenses against the honor system (see page 7). 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 annually presents two coveted awards, 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.

Major 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 are also 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 RMC 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 in 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 various schools of architecture, engineering, humanities, management, music, natural sciences, and social sciences, as well as interdepartmental areas. The number of graduate programs has steadily increased over time, and Rice now offers advanced degrees in 33 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. They lead to the degrees of Doctor of Musical Arts (D.M.A.), Master of Architecture (M.Arch.), M.Arch. in Urban Design, Master of Arts in Teaching (M.A.T.), Master of Business Administration (M.B.A.), Master of Chemical Engineering (M.Ch.E.), Master of Computational and Applied Mathematics (M.C.A.M.), Master of Civil Engineering (M.C.E.), Master of Computer Science (M.C.S.), Master of Electrical Engineering (M.E.E.), Master of Environmental Engineering (M.E.E.), Master of Environmental Science (M.E.S.), Master of Materials Science (M.M.S.), Master of Mechanical Engineering (M.M.E.), Master of Music (M.Mus.), and Master of Statistics (M.Stat.).

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.

Graduate Degrees

Research Degrees

Ph.D. Programs. The Ph.D. degree is awarded for original studies in the departments listed in the Graduate Degree Chart (pages 74–77); 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 page 79.) 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 Chart (pages 74–77), 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. The minimum residency requirement is one semester of full-time study.

Master's programs generally 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). 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 way 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 page 79.)

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

Both Research Degree Programs. For general information on advanced degree work at Rice, see Requirements for Graduate Study (page 78). The individual departments establish foreign language requirements for the master's and doctoral degrees according to the need for foreign languages when conducting research and scholarship in their respective fields. Specific requirements for advanced research degrees in each field of study appear, listed by department, in the Departments and Interdisciplinary Programs section. Students seeking additional material should contact the appropriate department chair (see Department Information Chart on pages 80–82).

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 72) appear in the Graduate Degree Chart (pages 74–77). 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 (page 78). 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 Departments and Interdisciplinary Programs section. Program information and application materials are also available from the department chairs (see Department Information Chart on pages 80–82).

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.

GRADUATE DEGREE CHART

School Department	Graduate Degrees Offered	Additional Options or Areas of Concentration (within majors)
SCHOOL OF ARCHITECTURE		
	M.Arch., M.Arch. in Urban Design, D.Arch.	
GEORGE R. BROWN SCHOOL OF ENGINEERING		
Bioengineering	M.S., Ph.D.	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.
Chemical Engineering	M.Ch.E., M.S., Ph.D.	Transport and interfacial phenomena, thermodynamics, fluid mechanics, catalysis and reactor design, process control, optimization and systems analysis, polymers, advanced materials, petroleum engineering, and pollution control
Civil Engineering	M.C.E., M.S., Ph.D.	Structural dynamics and control, structures and mechanics, reinforced and prestressed concrete, geotechnical engineering, computer-aided engineering, probability and random vibrations, and solid mechanics
Computational and Applied Mathematics	M.C.A.M., M.C.S.E., M.A., Ph.D.	Numerical analysis, operations research, and differential equations; additional program in computational science and engineering (see Interdepartmental Programs)
Computer Science	M.C.S., M.S., Ph.D.	Algorithms and complexity, artificial intelligence and robotics, compilers, distributed and parallel computation, graphics and visualization, operating systems, and programming languages
Electrical and Computer Engineering	M.E.E., M.S., Ph.D.	Bioengineering, communication, control, electro-optics, physical electronics, and computer engineering
Environmental Science and Engineering	M.E.E., M.E.S., M.S., Ph.D.	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
Mechanical Engineering Materials Science	M.M.E., M.M.S., M.S., Ph.D.	Mechanical engineering: heat transfer, fluid dynamics, mechanics and vibrations, computer-aided design, robotics and control, mechanical behavior of materials, composite materials, thermodynamics and diffusion, thin film properties, and aerospace engineering
Statistics	M.Stat., M.A., Ph.D.	Applied probability, biomathematics, data analysis, density estimation, epidemiology, financial statistics, image processing, model building, quality control, statistical computing, statistical genetics, stochastic processes, and time series analysis
SCHOOL OF HUMANITIES		
Art and Art History	M.A.	History of art; options in classical archaeology and media studies
Education	M.A.T.	Secondary teaching certificate in conjunction with B.A. in major field

School Department	Graduate Degrees Offered	Additional Options or Areas of Concentration (within majors)
English	M.A., Ph.D.	British and American literature and literary theory
French Studies	M.A., Ph.D.	French literature, language, and culture
German and Slavic Studies	M.A., Ph.D.	German and German cultural studies
Hispanic and Classical Studies	M.A.	Spanish language and literature
History	M.A., Ph.D.	U.S., European, and other history
Human Performance and Health Sciences	No graduate degree offered	
Linguistics	Ph.D.	Anthropological, applied, cognitive, field, functional or discourse, and English, German, or Romance linguistics; second language acquisition; and language typology and universals
Philosophy	M.A., Ph.D.	Specialization in medical ethics
Religious Studies	M.A., Ph.D.	Asian religions (M.A. only), Biblical studies, ethics, history of Christianity, philosophy and religious thought, and psychology of religion; additional specialization in health care ethics
JESSE H. JONES GRADUATE SCHOOL OF MANAGEMENT		
	M.B.A., M.B.A./Master of Engineering M.B.A./M.D. (with Baylor College of Medicine)	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, health-care management, and strategic management and planning; joint nonthesis degree option with all engineering disciplines listed below
SHEPHERD SCHOOL OF MUSIC		
	B.Mus./M.Mus., M.Mus., D.M.A.	Composition, choral and instrumental conducting, historical musicology, performance, and music theory
WIESS SCHOOL OF NATURAL SCIENCES		
Biochemistry and Cell Biology	M.A., Ph.D.	Biochemistry, biophysics, genetics, molecular biology, development, cell biology, plants, and neurobiology
Chemistry	M.A., Ph.D.	Organic chemistry, inorganic chemistry, and physical chemistry
Ecology and Evolutionary Biology	M.A., Ph.D.	Biogeochemistry, wetland ecology, plant community and population ecology, insect diversity and community structure, behavioral ecology, sociobiology, and molecular evolution
Geology and Geophysics	M.A., Ph.D.	Stratigraphy, sedimentation, paleoclimate, geophysics, geodynamics, global plate tectonics, geochemistry, igneous and metamorphic petrology, marine geology, and structural geology
Mathematics	M.A., Ph.D.	Differential geometry, ergodic theory, partial differential equations, probability, real analysis, mathematical physics, complex variables, geometric and algebraic topology, and combinatorics
Physics	M.A., Ph.D.	Atomic and molecular physics, biophysics, particle physics, condensed matter physics, surface physics, and theoretical physics

School Department	Graduate Degrees Offered	Additional Options or Areas of Concentration (within majors)
Space Physics and Astronomy	M.S., Ph.D.	Space physics, astronomy, and applied 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, industrial-organizational/social psychology, and engineering psychology/human–computer interaction

INTERDEPARTMENTAL AND COOPERATIVE PROGRAMS CHART

Program	Degrees Offered	Departments/Areas of Concentration
INTERDEPARTMENTAL PROGRAMS		
Systems Theory	Master's, Ph.D.	Departments in chemical engineering, mechanical engineering and materials sciences, economics, electrical and computer engineering, and mathematics. Contact: 713-527-4020 or elec@rice.edu
Materials Science and Engineering	Master's, Ph.D.	Departments in chemistry, electrical and computer engineering, mechanical engineering and materials sciences, chemical engineering, and physics. Contact: 713-527-4906 or mems@rice.edu
Applied Physics	Master's, Ph.D.	Departments in physics, chemistry, electrical and computer engineering, mechanical engineering and materials sciences, and space physics and astronomy; sciences that underlie important new and emerging technology. Contact: Rice Quantum Institute 713-527-6028 or quantum@rice.edu
Computational Science and Engineering	Master's, Ph.D.	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: 713-527-4805 or caam@caam.rice.edu
COOPERATIVE PROGRAMS		
Joint Program in Computational Biology	Training opportunities for Ph.D. students	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: 713-527-4752 or bioc@rice.edu
Joint Program in Law	B.A./J.D.	Accelerated interdisciplinary legal education with Columbia University School of Law; allows Rice students who have completed junior-year requirements to apply to Columbia one year early and complete undergraduate requirements while in law school. Contact: 713-527-4998 or bass@rice.edu

School Department	Graduate Degrees Offered	Additional Options or Areas of Concentration (within majors)
Joint Programs with Medical Colleges	M.D./Ph.D., M.D./M.A., M.D./M.S.	Combined M.D. and advanced research degree for research careers in medicine; with Baylor College of Medicine. Contact:713-737-5869 or bioeng@rice.edu
Joint Program in Biomedical Ethics	M.A., Ph.D.	Religious studies degree with the University of Texas Health Science Center at Houston. Contact: 713-285-5201 or reli@rice.edu Philosophy degree with the Baylor College of Medicine and the Institute of Religion. Contact: 713-527-4994 or phil@rice.edu

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 (above) 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.

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 contact the chair of the appropriate department for application forms and relevant information about the program. The Department Information Chart (pages 80–82) 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 and high scores on the GRE (or GMAT). 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.

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:

Residency—Masters students must spend at least one semester and Ph.D. students must spend at least four semesters in full-time study at Rice.

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 10 years of initial enrollment in the degree program. Masters students are required to complete their program, including thesis defense, within 5 years of initial enrollment. In both cases, students have a limit of 6 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 2 signed copies of the thesis to the Office of Graduate Studies no later than 6 months from the date of the 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, 3) the total time to the doctoral degree. The maximum credit allowed for students with master's degrees from Rice will be 6 semesters, and the maximum credit allowed for students with master's degrees from outside Rice will be 2 semesters.

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

Courses—Students plan their first semester of study with the department chair or an officially designated faculty member, affiliating as soon as possible with a faculty adviser who then helps them plan a full course program as well as the thesis or special report. Students may register for courses of study and drop or add courses only with the approval of this adviser or the department chair.

Deadlines—Students must observe all deadlines listed in the Academic Calendar (pages vii–ix).

Grades—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 on page 85.

Grade Appeals—Students may appeal a grade that they feel is erroneous. This procedure should begin with the instructor. If the student is unable to satisfactorily conclude the inquiry, a written appeal must go to the department chair. If questions still linger, an appeal may be made, in writing, to the dean of the area of study. After all other appeals have been exhausted, all documentation may be sent to the associate dean for graduate studies for further review.

Pass/fail—All students, except Class III students, may take courses pass/fail, but only with department approval. The total courses taken pass/fail may not exceed the total full years of residence, and students may register for only one such course in a semester. They must file a course as pass/fail no later than the end of the tenth week of classes; they may later convert a pass/fail course to a graded course by filing with the registrar. Students should be aware that while a grade of P or S does not affect their grade point average, a grade of F does. See the pass/fail section (page 35–36) for more information.

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, averaged over the semester, or extend over more than 8 semesters.

Employment—Full-time students may accept employment only with the approval of the department and the Office of Graduate Studies. 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 84).

Candidacy, Oral Examinations, and the Thesis

Approval of Candidacy. Candidacy marks a midpoint in the course of graduate education. Achieving candidacy 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. 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. candidacy in the Office of Graduate Studies by December 15 and for approval of M.A./M.S. candidacy before February 1 of the academic year they expect to graduate. 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. Ph.D. 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.

DEPARTMENT INFORMATION CHART

Department Chair	Phone, Fax, and E-Mail	Faculty Research Interests
SCHOOL OF ARCHITECTURE		
Lars Lerup (Dean)	713-527-4044 fax: 713-285-5277 arch@rice.edu	Architecture, design, urbanism, theory and practice
John J. Casbarian (Associate Dean)	713-285-5152	
GEORGE R. BROWN SCHOOL OF ENGINEERING		
Bioengineering: Larry McIntire	713-737-5869 fax: 713-737-5877 bioeng@rice.edu	Biochemical engineering, biological systems modelling, biomaterials, biomedical lasers, cellular and molecular engineering, controlled release technologies, metabolic engineering, spectroscopy, systems engineering and instrumentation, thrombosis, tissue engineering, and transport processes
Chemical Engineering: Kyriacos Zygourakis	713-527-4902 fax: 713-285-5478 ceng@rice.edu	Thermodynamics and phase equilibria, chemical kinetics and catalysis, optimization, stability and process control, rheology and fluid mechanics, polymer science, biomedical engineering, enhanced oil recovery and cleanup of ground-water aquifers, biochemical reactor engineering
Civil Engineering: Ahmad Durrani	713-527-4949 fax: 713-285-5268 civi@rice.edu	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
Computational and Applied Mathematics: John E. Dennis	713-527-4805 fax: 713-285-5318 caam@caam.rice.edu	Operations research, mathematical program-ming, discrete and continuous optimization, numerical linear algebra, inverse problems, computational seismology, optimal design, partial differential equations, numerical analysis
Computer Science: Moshe Y. Vardi	713-527-4834 fax: 713-285-5930 comp@rice.edu	Algorithms and complexity, artificial intelligence and robotics, compilers, distributed and parallel computation, graphics and visualization, operating systems and programming languages
Electrical and Computer Engineering: Robert Jump	713-527-4020 fax: 713-524-5237 elec@rice.edu	Bioengineering, control and system theory, signal processing, communications, computer systems engineering, solid-state devices, and quantum electronics
Environmental Science and Engineering: Philip Bedient	713-527-4951 fax: 713-285-5203 envi@rice.edu	Surface and groundwater hydrology, biochem-ical process engineering, aquatic chemistry, environmental microbiology, physical-chemical processes, membrane processes, colloid chemistry,GIS and contaminant transport modeling, urban and regional air quality, earth systems, and environmental law
Mechanical Engineering and Materials Science: Tayfun Tezduyar	713-527-4906 mems@rice.edu	Heat transfer, computational fluid dynamics, random vibrations, solid mechanics, computer-aided design, biomechanics, robotics, control, materials engineering, and optimization theory
Statistics: Katherine B. Ensor	713-527-6032 fax: 713-285-5476 stat@rice.edu	Applied probability, biomathematics, data analysis, density estimation, epidemiology, financial statistics, image processing, model building, quality control, statistical computing, statistical genetics, stochastic processes, and time-series analysis

Department Chair	Phone, Fax, and E-Mail	Faculty Research Interests
SCHOOL OF HUMANITIES		
Art and Art History: William Camfield	713-527-4668/4815 fax: 713-527-4039 arts@rice.edu	Art history: Greek and Roman art and archaeology, early Christian through 20th-century European art, American art
Education: Meredith Skura	713-527-4826 fax: 713-285-5459 educ@rice.edu	Secondary education
English: Wesley Morris	713-527-4840 fax: 713-285-5991 engl@rice.edu	Medieval through 20th-century English literature, American literature, theoretical bases of literary criticism and genre theory
French Studies: Bernard Aresu	713-527-4851 fax: 713-285-5951 fren@rice.edu	Medieval through contemporary literature, French literary theory, philosophy, French cultural history
German and Slavic Studies: Klaus Weissenberger	713-527-4868 fax: 713-285-5964 germ@ruf.rice.edu	All periods of German literature, literature of East Germany, exile literature, medical philology and dialectology, genre theory, methods of criticism, cultural theory, German cinema
Hispanic and Classical Studies: Lane Kauffman	713-527-5451 fax: 713-527-4863 span@rice.edu	Medieval, golden age, and modern peninsular Spanish literature, modern Spanish American literature, Hispanic linguistics, second language acquisition, semiotics and literary theory
History: Gale Stokes	713-527-4948 fax: 713-285-5207 hist@rice.edu	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, East Asian and Latin American history
Human Performance and Health Sciences: James Disch	713-527-4808 fax: 713-285-5329 hphs@rice.edu	
Linguistics: James Copeland	713-285-6010 ukeie@ruf.rice.edu	General and cognitive-functional linguistics, syntax and semantics, discourse analysis, typology, language description and change, computational linguistics
Philosophy: George Sher	713-527-4994 phil@ricevm1.rice.edu	History of philosophy, metaphysics, ethics, medical ethics, social and political philosophy, philosophy of law, language, and science
Religious Studies: Gerald M'Kenny	713-285-5201 fax: 713-285-5486 reli@rice.edu	Theological and medical ethics, New Testament and early Christianity, Indo-Tibetan thought and practice, history of Christianity, contemporary continental philosophy of religion, psychology of religion, Judaism
JESSE H. JONES GRADUATE SCHOOL OF MANAGEMENT		
Gilbert R. Whitaker, Jr. (Dean) Robert A. Westbrook (Associate Dean)	713-527-4838 fax: 713-285-5251 enterjgs@rice.edu 713-285-5396 fax: 713-285-5251	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, computer–human interaction, international business and trade, business–government relationships, leadership, firm valuation, brand equity, and business ethics
SHEPHERD SCHOOL OF MUSIC		
Michael Hammond (Dean)	713-527-4854 fax: 713-285-5317 musi@rice.edu	Orchestral studies, performance, conducting, composition, theory, music history

Department Chair	Phone, Fax, and E-Mail	Faculty Research Interests
WIESS SCHOOL OF NATURAL SCIENCES		
Biochemistry and Cell Biology: Frederick Rudolph	713-527-4015 fax: 713-285-5154 bioc@rice.edu	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, bacteriophage
Chemistry: Kenton Whitmire	713-737-5683 fax: 713-285-5155 chem@rice.edu	Synthesis and biosynthesis of organic natural products, synthesis of small cycloalkanes, molecular recognition and biological catalysis, bioinorganic and organometallic chemistry, chemistry of group 13 (III) elements, 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 and fullerene nanowires
Ecology and Evolutionary Biology: Ronald Sass	713-527-4919 fax: 713-285-5232 eeb@rice.edu	Biogeochemistry, wetland ecology, plant community and population ecology, behavioral ecology, sociobiology, molecular evolution, and insect diversity and community structure
Geology and Geophysics: Alan Levander	713-527-4880 fax: 713-285-5214 geol@rice.edu	Stratigraphy, sedimentation, paleoclimate, geophysics, geodynamics, global plate tectonics, geochemistry, igneous and metamorphic petrology, marine geology, and structural geology
Mathematics: Frank Jones	713-527-4829 fax: 713-285-5231 math@rice.edu	Differential geometry, ergodic theory, partial differential equations, probability, real analysis, mathematical physics, complex variables, geometric and algebraic topology, and combinatorics
Physics: F. Barry Dunning	713-527-4938 fax: 713-527-9033 physics@rice.edu	Atomic and molecular physics, biophysics, condensed matter and surface physics, nuclear and particle physics, theoretical physics
Space Physics and Astronomy Patricia Reiff	713-527-4939 spac@rice.edun	Observational astronomy of star-forming regions, nebulae, and galaxies; solar system studies, including instrumentation for planetary probes; theoretical astrophysics and space plasma physics, with emphasis on planetary magnetospheres and compact objects; and earth systems science
SCHOOL OF SOCIAL SCIENCES		
Anthropology: George Marcus	713-527-4847 fax: 713-285-5455 anth@rice.edu	Archaeology, anthropological linguistics, social/cultural anthropology, theory, history, and global change
Economics: George Zodrow	713-527-4875 fax: 713-285-5278 econ@rice.edu	Applied microeconomics, economic theory, econometrics, public finance, industrial organization, game theory, monetary economics, labor economics, micro foundations of macroeconomics
Political Science: T. Clifton Morgan	713-527-4842 poli@rice.edu	Comparative government and political development in Western Europe and Latin America, American government including public policy, Congress, and intergovernmental relations, international relations and conflict
Psychology: Robert Dipboye	713-527-4856 fax: 713-285-5221 psyc@rice.edu	Cognitive psychology, cognitive neuropsychology, human factors, industrial/organizational psychology

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. The defense may be held at any time except during official examination periods. A candidate must be enrolled in the semester in which his or her oral examination is held.

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 on-line 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. fall 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 re-examination 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 first day 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 signifying successful defense of the thesis, to the Office of Graduate Studies immediately after the oral examination.

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://www.ruf.rice.edu/~graduate/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 the deadline for submitting the thesis is noon of the next-to-last Friday before commencement of the academic year that the student expects to graduate.

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 $25 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 page 48 for information on refunds of tuition and fees). 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 $100.

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 2 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.

Students may not drop courses after the end of the tenth week of classes, except by approval of the vice provost for research and graduate studies (a $25 fee is assessed for courses dropped after the tenth 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 (page 31).

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.

Tuition, Fees, and Expenses

The tuition and fees for graduate students in this section are for the 1999–2000 academic year only and are subject to change in subsequent years. Current tuition and fees for all graduate students, full time and part time, are as follows, in effect through 4 or 6 semesters as indicated below:

	Per Year	Per Semester
Tuition– all schools except Jones School	$16,100	$8,050
Tuition–Jones School	$17,000	$8,500
Health service fee	$220	$110
Graduate Student Association fee	$12	$6
Shuttle fee	$17	
Honor Council fee	$1	
Jones School Activities Fee	$55	

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. After six semesters of full-time study (excluding the summer semesters), continuing students enter a reduced-tuition category of $900 per year ($450 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. All students, full time, part time, and those in away status, must also carry health insurance (see pages 92–93).

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 December. Past these deadlines, a late payment penalty of $55 will be accessed.

Other fees applicable under special circumstances:

Late Registration Fee (starts the second week of class)	$ 80
Reinstatement fee upon return after official leave of absence	$ 25
Readmission fee upon return after withdrawal or failure to register	$100
Fee for off-campus preceptorship programs credited on transcript	$160/semester
Tuition for part-time and Class III students	$ 900/credit hour
Registration fee for part-time and Class III students	$ 85/semester
Late application fee, Class III	$ 53
Failure to preregister	$ 27
Tuition for education internship	$160/semester

For information regarding refunds on tuition and fees, see p. 48.

For $85 each, graduate students and their spouses may buy from the Cashier's Office an athletic events ticket, which admits them to all regularly scheduled Rice Athletic events.

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. Graduate 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. Ph.D. students may receive support from Rice-funded fellowships and scholarships for no more than five years of study; the limit for master's degree students is three years. In the case of Ph.D. students entering with a previously earned master's degree relevant to their course of study, stipend support extends for no more than four years of study, and the students must have achieved candidacy by the beginning of their fourth year.

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 Financial Aid offers need-based assistance in the form of loans and federal work-study employment.

Subsidized William D. Ford Federal Direct Loans. Graduate students may process these loans through Rice up to a maximum eligibility of $8,500 per year, as set by Rice University and the guarantor. No interest accrues and no payment is required

under the following conditions:

- While a student is enrolled at least half time at Rice
- While a student is enrolled full time in any eligible postsecondary institution
- For six months after withdrawing from Rice

Repayment begins after this period, including a variable interest rate not to exceed 8.25 percent (adjusted each July 1) on the unpaid principal balance. Depending on the size of the total loan commitment, the repayment period may extend over as many as ten years. Students should submit a completed William D. Ford Federal Direct Loan Request Form application, with supplements and 1040s, to the Office of Financial Aid.

Unsubsidized William D. Ford Federal Direct Loans. Graduate students may use this program to borrow up to $10,000 per year to an aggregate of $73,000 (undergraduate and graduate combined). Interest on these loans accrues during the in-school and deferment periods, but students do not have to begin paying on the principal and interest until they leave Rice. The interest rate on the unpaid balance of the loan is a variable rate not to exceed 8.25 percent (adjusted each July 1).

Federal Work-Study Employment. Federal work-study employment funding is available to students who meet eligibility criteria set by the federal government. Interested students should file a Free Application for Federal Student Aid (FAFSA) with the Federal Aid Program. Earnings are limited to the amount shown on the award letter.

Special Loan Programs. A Gulf Oil Corporation Foundation Loan Fund and the Benjamin S. Lindsey and Veola Noble Lindsey Memorial Loan Fund are available to help students working toward a degree meet their educational expenses, but funds are limited. Interested students may contact the Office of Financial Aid. 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 assistance. Detailed information and application forms are available in the Office of the Financial Aid.

The Professor John A. S. Adams, Sr., Memorial Graduate Student Loan Fund. This fund provides financial assistance, in the form of loans, to graduate students at Rice University. Students wishing to apply for such a loan should obtain an application from the Office of Financial Aid and return the completed application to that office. Guidelines for the program are:

- Individual loans are made for an amount not to exceed $1,500.
- Loans are made for a period of up to one year and may be renewable on an annual basis.
- The interest rate applicable to an Adam's loan is determined by the Office of Financial Aid in accordance with the policies and procedures of the university.
- 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.
- Applications for the loan are available through the Office of Financial Aid.
- 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 $1 per $50 loaned 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.

A partial list of graduate scholarships, fellowships, and awards includes:

Achievement Rewards for College Scientists (ARCS Foundation) Scholarships in Science and Engineering
Ora N. Arnold Fellowship for better understanding between people and governments of the United States and those of Mexico, the South American states, the West Indies, and the Philippine Islands
Nettie S. Autrey Memorial Fellowship in Science
Eleanor and Mills Bennett Fellowships in Hydrology
George R. Brown Fellowship
Ralph Budd Award for Research in Engineering
Allen H. Carruth Policy Research Fellow
Samuel Fain Carter Fellowship in Economics
Edward F. Chavanne Fellowship in Religious Studies
Robert L. Chuoke Award in Physics
Cities Service Research Fellowship in Geology
Continental Oil Company Fellowship in Geology
John W. Cox Research Fund for Scholarships and Fellowships in Bioengineering and Biosciences
William Dunlap Darden Medal in Architecture
Edmund McAshan Dupree Distinguished Graduate Fellowship in Electrical Engineering
Environmental Protection Agency Fellowships in Environmental Science and Engineering
W. Maurice Ewing Fellowship in Marine Science
Exxon Fellowship in Geology
Florence Fulton Endowed Fellowship in Economics
John W. Gardner Award in Humanities and Social Sciences
Leroy Caleb Gibbon Award in Geology and Geophysics
Marilyn Marrs Gillet Fellowship in the Humanities
Louis J. Girard Foundation Fellowship for Opthalmic Research
William and Elva Gordon Scholarship in Space Physics and Astronomy
Gulf Oil Company Fellowship in Geology
Patricia Roberts Harris Fellowships
Karl F. Hasselmann Fellowship in Chemical Engineering
Marjory Meyer Hasselmann Fellowship in Chemistry
Fannie and John Hertz Foundation Fellowship in Applied Physical Sciences
Diana P. Hobby Fellowship
Stephen C. Hofmann Fellowship in Chemistry
Houston Gem and Mineral Society Fellowship in Geology
Houston Geological Society Outstanding Student Award
Houston Livestock Show and Rodeo Endowed Scholarship
Houston Oil and Minerals Corporation Fellowship in Geology

Jameson Fellowship for American Decorative Arts
W. M. Keck Foundation Fellowship in Geology and Geophysics
Ruth Lee Kennedy Fellowship for Studies in the Golden Age of Spanish Literature
Captain Charles Septimus Longcope Award in History
Edgar Odell Lovett Fellowships in Mathematics
Jermayne MacAgy Fellowships in Art History
Jack F. Maddox Foundation Fellowship in Engineering
William F. Marlar Scholarship in Space Science
Mrs. L. F. McCollum Fellowship
John P. McGovern Outstanding Premedical Student Award
John W. Mecom Fellowship in Geology
Earl Douglas Mitchell Fellowship
National Institutes of Health Fellowships
National Institutes of Health Traineeships in Biology
National Science Foundation Graduate Fellowships
Pennzoil Company Fellowship in Geology
Petroleum Research Fund Fellowships of the American Chemical Society
Phillips Petroleum Company Fellowship in Chemistry
Mrs. L. A. Richardson Trust
Zevi W. Salsburg Awards in Chemistry
Schlumberger Foundation Fellowship in Mathematics
Shell Fellowship in Physics
Robert P. and Eleanor Warden Shubinski Award in Civil Engineering
Sigma Xi Research Awards
John Stauffer Scholarship in Chemistry
Tenneco Oil Company Fellowship in Geology
Texaco Fellowship in Physics
Texas Instruments Graduate Student Fellowship
TI Graduate Fellowship
John and Eileen Tietze Fellowship
Radoslav A. Tsanoff Fellowship in Philosophy
Richard B. Turner Memorial Awards in Chemistry
Eric Umland Endowed Fund
Union Oil of California Fellowship in Geology
Lodieska Stockbridge Vaughan Fellowship
Bob E. and Lore Merten Watt Fellowship in Natural Sciences
Harry Weiser Awards in Chemistry
Robert A. Welch Foundation Predoctoral Fellowships
Wiess Fellowship in Geology
H. A. Wilson Award in Physics
Hin Wei Wong Fellowship
Wray-Todd Fellowships in Natural Sciences

Scholarships and Prizes of the Jesse H. Jones Graduate School of Management

Amerada Hess Corporation Fellowship
J. Kenneth S. Arthur Scholarship
Alice Pratt Brown Scholarship
Columbia Energy Scholarship
COMIT Scholarship in Management Information Systems
J. Howard Creekmore Scholarships
Criterion Investment Management Company Endowed Fellowship
Dean’s Award for Academic Excellence
David E. Farnsworth Scholarship
Financial Executives Institute Award

E. F. “Gene” Florian Scholarship
Bernard Fuchs Scholarship
H. H. Galloway Award
Harry B. and Aileen B. Gordon Scholarships
Houston Business Forum Scholarship
Houston Society of Financial Analysts Scholarship Award
Elmer E. and Adele G. Isgren Endowed Scholarship at the Jesse H. Jones Graduate School of Management
Jones Graduate School Alumni Association Scholarship
Jones Graduate School Partners Scholarship
Jones Scholars
William H. and Marion F. Keenan Fellowships
Cooper M. and Zava Waldrop Lochridge Scholarship
Speros P. Martel Scholarship
John T. McCants Scholarship
Leon Nad Memorial Scholarship
Vernon F. “Doc” Neuhaus, Sr., Scholarship
Lawrence J. O’Connor, Jr., Endowed Fund
Lorane T. Phillips Award for Excellence in Writing
Robert E. Phillips Award for Excellence in Oral Presentation
Verne F. Simons Scholarship
Texaco Foundation Scholarship
Wall Street Journal Student Achievement Award
M. A. “Mike” Wright Award

Scholarships and Prizes of the Shepherd School of Music. See listing in the undergraduate section, pages 64.

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. Graduate student organizations falling under the umbrella of the Graduate Student Association include the Jones Student Association and their affiliate organizations and the graduate division of the Chinese Student Association.

Housing for Graduate Students

The new 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, and auto paths, not to mention parking and recreational areas. Electronically controlled gates for both pedestrian and vehicular paths are provided. Handicap accessibility is also an important feature. A shuttle bus travels back and forth between the apartments and campus.

There are 112 units, including one-bedroom, two-bedroom, three-bedroom, and efficiency apartments. The design includes a centrally located space for social activities, a laundry room equipped with washing machines and dryers on each floor, a study room adjacent to each laundry 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 Campus Housing at 713-285-5445 for further information.

In addition to the Graduate Apartments, rooms and apartments are usually available for rent within walking or bicycling distance of the campus. Houston has a reasonable cost of living for a city of its size.

The Information Desk, the Office of Student Activities, and the Graduate Student Association keep a record of available rooms and apartments listed with the university by area landlords. The daily newspapers and a weekly *Greensheet* are other sources of rental housing. 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 11–13). 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, as described in a brochure available in

the Cashier's Office and the Office of Student Activities. Rice's group coverage for the 1999–2000 academic year is effective from 12:01 A.M., August 15, 1999, until 12:01 A.M. August 15, 2000. Dependent coverage is also available. Students who have other medical insurance should sign a waiver card showing proof of insurance and return it to the Cashier's Office by August 10, before classes begin, to avoid automatic billing.

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 Jones Graduate School. Class III students must register for at least 3 hours and cannot take courses on a pass/fail basis.

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 15 for fall semester courses and December 15 for spring semester courses. Late applications are not considered after classes have begun.

Tuition and Fees for Class III

The tuition for 1999–2000 is $900 per semester hour, plus an $85 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 $55, and students registering after the second week of class must pay a $80 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.

Foreign Graduate Students/Class III

Because Class III is not a degree-granting program, foreign graduate students enrolled as Class III students cannot receive visas from Rice University. B–2 visitors may be ineligible for enrollment as Class III students. The vice provost for research and graduate studies and the foreign student adviser will make a determination in those cases.

Ancient Mediterranean Civilizations

The School of Humanities

Director and Adviser
Michael Maas

Professors
Werner H. Kelber
Roderick J. McIntosh
Susan Keech McIntosh
Albert van Helden
Harvey E. Yunis
Associate Professors
Hilary Mackie
Donald Ray Morrison
David Nirenberg
Carol E. Quillen
Paula Sanders
Kristine Gilmartin Wallace
Walter M. Widrig
Assistant Professor
Matthias Henze
Visiting Assistant Professor
Christian Brockman *(spring)*

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 this 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 Graduation Requirements (pages 17–19). Single or double majors in Ancient Mediterranean Civilizations must complete at least 30 semester hours (10 courses). Students must take a core course near the beginning of their studies. They may select from the courses that follow to fulfill their requirements for the major (a list is also published in the program brochure):

Core Courses
AMC 200 *Origins of Western Civilizations: Athens, Rome, and Jerusalem*
CLAS 207 *Greek Civilization: An Introduction*
CLAS 208 *Roman Civilization*

Anthropology
ANTH 205 *Introduction to Archaeology*
ANTH 206 *Introduction to World Prehistory*
ANTH 345 *The Politics of the Past*
ANTH 362 *Archaeological Field Techniques*
ANTH 363 *Early Civilizations*
ANTH 460 *Advanced Archaeological Theory*
ANTH 474 *Advanced Seminar on the Prehistoric Landscape*

Classical Studies
CLAS 212 *Myth, History, and the Problem of the Past*
CLAS 222 *Perspectives on Greek Tragedy*
CLAS 315 *Socrates: The Man and His Philosophy*
CLAS 316 *Democracy and Political Theory in Ancient Greece*
CLAS 322 *Women in Greece and Rome*
CLAS 335 *Classical Mythology*
CLAS 351 *Epic and Saga*

Greek Studies
GREE 101 *Introduction Ancient Greek I*
GREE 102 *Introduction Ancient Greek II*
GREE 201 *Intermediate Greek:* Iliad
GREE 301 *Advanced Greek I: Homer's* Odyssey
GREE 302 *Advanced Greek II: Herodotus*
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: Poetry*
LATI 302 *Advanced Latin: TBA*
LATI 303 *Advanced Latin: TBA*
LATI 307 *Advanced Latin: TBA*
LATI 309 *Advanced Latin: TBA*
LATI 310 *Advanced Latin: TBA*
LATI 312 *Advanced Latin: TBA*
LATI 491 *Directed Reading*
LATI 492 *Directed Reading*

History
HIST 152 *Freshman Seminar: Ancient History*
HIST 200 *Origins of Western Civilizations: Athens, Rome, and Jerusalem*
HIST 202/325 *Introduction to Medieval Civilization: Early Middle Ages*
HIST 207 *Greek Civilization*
HIST 273/373 *Postbiblical Jewish History I*
HIST 281 *The Middle East, 600–1805*
HIST 306 *Politics and Society in Ancient Greece*
HIST 307 *Imperial Rome from Caesar to Diocletian*
HIST 308 *World of Late Antiquity*
HIST 309 *Decline and Fall of the Roman Empire in the West*
HIST 320 *Science in Antiquity and the Middle Ages*
HIST 334 *History of Astronomy and Cosmology*
HIST 377 *The Ancient City*
HIST 439 *Christianity and the West: From the Barbarians to Beowulf*
HIST 451 *Philosophies and Theologies of History*
HIST 460 *Advanced Seminar in Ancient History*
HIST 489 *Sex and Group Identity, from Biblical Times to Modern U.S.*

History of Art
HART 205 *Introduction to the History of Art*
HART 309 *Late Antique/Early Christian Art and Architecture*
HART 310 *Byzantine Art and Architecture*

Linguistics
LING 437 *History of Linguistics*
LING 455 *Ancient Languages: Near East*

Philosophy
PHIL 201 *History of Philosophy I*
PHIL 301 *Ancient and Medieval Philosophy*

PHIL 307 *Social and Political Philosophy*
PHIL 501 *Seminar in Ancient Philosophy*

Religious Studies
RELI 122 *Interpreting the Bible*
RELI 200 *The Bible in Western Tradition*
RELI 302 *Jewish–Christian Dialogue*
RELI 307 *Christian Origins*
RELI 308 *Canonical Gospels*
RELI 310 *Pauline Theology*
RELI 383 *The Dead Sea Scrolls*
RELI 411 *Introduction to Classical Hebrew I*
RELI 412 *Introduction to Classical Hebrew II*

University Courses
UNIV 302 *Communication, Cognition, and Culture*

See AMC (page 235) in the Courses of Instruction section.

Anthropology

The School of Social Sciences

Chair
George E. Marcus

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

Adjunct Professor
Kathleen R. Gibson
Associate Professors
James D. Faubion
Eugenia Georges
Assistant Professor
Kathryn Milun

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

The major in anthropology has two 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 17–19). Students majoring in anthropology must:

- Complete a total of 30 semester hours of departmental courses (10 courses)
- Take courses in both archaeology and cultural and linguistic anthropology

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 one or two 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 34).

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 72–73).

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
- One of the three special papers required for the Ph.D.
- A thesis

Ph.D. Program. For the Ph.D. degree, students must accomplish the following (they should complete the three required papers during their first two years of study):

- Complete three substantial papers, each emphasizing an analytical, research, and writing skill appropriate to their field of specialization
- Demonstrate reading competency in one 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 (pages 235–249) in the Courses of Instruction section.

Architecture

The School of Architecture

Dean
Lars Lerup
Associate Dean
John J. Casbarian

Professors
William T. Cannady
Gordon G. Wittenberg, Jr.
Associate Professors
Michael Bell
John Biln
Richard L. Ingersoll
Sanford Kwinter
Spencer W. Parsons
Albert H. Pope
Assistant Professors
David Brown
Fares el-Dahdah
Carlos Jimenez
Keith Krumwiede

Lecturers
Louis DeLaura
Alan Fleishacker
James Furr
Tom Lord
Mark Oberholzer
David Todd
Wendy Todd
Frank S. White
Adjunct Lecturer
Stephen Fox
Visiting Critics
Natalye Appel
Nonya Grenader
Doug Oliver
Visiting Professor
Danny M. Samuels

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 17–19). 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 4 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 2 semesters of architectural technology. They must also complete university distribution requirements. It is recommended that students take an introductory drawing course during their first 2 years of study to develop visual skills.

Students who satisfactorily complete the foundation sequence may, upon approval of their major, enter the 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 2-year foundation program may choose the architectural studies curriculum. The first 4 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 only 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 2-semester preceptorship, and completion of 2 graduate studios and 5 approved lecture or seminar courses.

Typical Curriculum for B.A. in Architecture

1st Semester
ARCH 101 *Principles of Architecture I*
HART 205 *Introduction to History of Art*
PHYS 101 *Mechanics (with lab)*
HUMA 101 *Introduction to Humanities*
HPER 101 *Basic Instruction in Physical Activity*

2nd Semester
ARCH 102 *Principles of Architecture I*
ARCH 132 *Freshman Seminar*
HART 206 *Introduction to History of Art*
MATH 101 *Single Variable Calculus*
HUMA 102 *Introduction to Humanities*
HPER 102 *Basic Instruction in Physical Activity*

3rd Semester
ARCH 201 *Principles of Architecture II*
ARCH 207 *Introduction to the Design of Structures*
HART 345 *Renaissance and Baroque Architecture in Italy*
Studio Art Elective*
Elective*

4th Semester
ARCH 202 *Principles of Architecture II*
ARCH 214 *Design of Structures II*
ARCH 346 *19th- and 20th-Century Architectural History*
Approved restricted distribution course in social science elective*

5th Semester
ARCH 301 *Principles of Arcitecture III*
ARCH 315 *Design of Structures III*
Architectural Theory Elective
Elective*
Elective*

6th Semester
ARCH 302 *Selected Architectural Problems I*
ARCH 316 *Building Climatology*
Elective*
Elective*
Elective*

7th Semester
ARCH 401 *Principles of Architecture IV*
Elective*
Elective*
Elective*

8th Semester
ARCH 402 *Selected Architectural Problems II*
Elective*
Elective*
Elective*

*All courses must be selected to satisfy both architecture major requirements and university distribution requirements.

Preceptors

Backen Arrigoni & Ross, Inc.
San Francisco

Cambridge Seven Associates
Cambridge

Studio Citterio/Dwan
Milan

Genzler & Associates
London, Los Angeles, New York, San Francisco

Michael Graves Architects and Industrial Design
Princeton

Kohn Pedersen Fox, Architects
London, New York

Lake/Flato Architects
San Antonio

Machado–Silvetti Associates
Cambridge

Mitchell Giurgola
New York

NBBJ
Seattle

Pei, Cobb, Freed & Partners
New York

Cesar Pelli & Associates
New Haven

Renzo Piano Building Workshop
Genoa, Paris

Robert A. M. Stern Architects
New York

Venturi Scott–Brown & Associates
Philadelphia

Zimmer Gunsul & Frasca
Los Angeles

Master of Architecture

The Master of Architecture (M.Arch.) program prepares graduates for a full range of professional activities in the field of architecture. It is offered to individuals who possess a bachelor's degree. Students follow a course of study in all four areas of the curriculum: design; history, theory, and criticism; structures, practice, and environments; and computing, logic, and representation. These areas of study are sustained by groups of courses from which students may choose offerings according to the requirements of their particular program. Strong emphasis is given to developing design skills, logic, and imagination through an intensive series of design studio courses. Students are also required to prepare an independent thesis before graduating. A potential exists for dual degrees.

The Master of Architecture program is accredited by the National Architectural Accrediting Board (NAAB). It leads to the degree of Master of Architecture, which qualifies graduates to take the state professional licensing examination after completing the required internship in an architectural office.

Programs of Study

There are 3 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 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 2 semesters of college-level courses in the history of art and/or architecture are recommended; so is a minimum of 1 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 4-semester core curriculum (76 credit hours), which is followed by a 3-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

1st 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*

2nd 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*

3rd Semester
ARCH 503 *Core Design Studio III*
ARCH 515 *Design of Structures III*
ARCH 683 *20th-Cent. History of Ideas in Architecture*
Dist. Elective (Comp., Log., and Repr.)

4th Semester
ARCH 504 *Core Design Studio IV*
ARCH 516 *Building Climatology*
ARCH 623 *Professionalism and Manag. in Architecture*
Dist. Elective (Hist., Theory, and Crit.)

Advanced Curriculum

5th Semester
ARCH 601 *Architectural Problems*
Dist. Elective (Hist., Theory, and Crit.)
Dist. Elective (Comp., Log., and Repr.)
Elective

6th Semester
ARCH 602 *Architectural Problems*
ARCH 701 *Pre-Thesis Preparation*
Dist. Elective (Struct., Pract., and Env.)
Elective

7th Semester
ARCH 703 *Thesis Studio*
Elective
Elective

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 4 and 6 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 2 semesters of college-level courses in the history of art and/or architecture are recommended; so is a minimum of 1 semester of college-level courses in mathematics and physics.

Students in this program enter into the second year of the core curriculum (2 semesters, 38 credit hours), which is followed by the advanced curriculum (3 semesters, 57 credit hours). Course work in both core and advanced curricula consists of 5 studios (including thesis) and 14 distribution courses (96 credit hours).

Core Curriculum

1st 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.)

2nd Semester
ARCH 504 *Core Design Studio IV*
ARCH 516 *Building Climatology*
ARCH 623 *Professionalism and Manag. in Architecture*
Dist. Elective (Hist., Theory, and Crit.)

Advanced Curriculum

3rd Semester
ARCH 601 *Architectural Problems*
Dist. Elective (Hist., Theory, and Crit.)
Dist. Elective (Comp., Log., and Repr.)
Elective

4th Semester
ARCH 602 *Architectural Problems*
ARCH 701 *Pre-Thesis Preparation*
Dist. Elective (Struct., Pract., and Env.)
Elective

5th Semester
ARCH 703 *Thesis Studio*
Elective
Elective

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 3-semester advanced curriculum of elective courses. Course work consists of 3 studios (including thesis) and 8 distribution courses (57 credit hours).

1st Semester
ARCH 601 *Architectural Problems*
Dist. Elective (Hist., Theory, and Crit.)
Dist. Elective (Comp., Log., and Repr.)
Elective

2nd Semester
ARCH 602 *Architectural Problems*
ARCH 701 *Pre-Thesis Preparation*
Dist. Elective (Struct., Pract., and Env.)
Elective

3rd Semester
ARCH 703 *Thesis Studio*
Elective
Elective

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 2 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 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 or master's degree in architecture. A student entering with a master's degree normally takes 3 semesters of course work before the qualifying examination. A student with a bachelor's degree normally requires 2 and 5 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.

See ARCH (pages 250–258) in the Courses of Instruction section.

Art and Art History

The School of Humanities

Chair
William A. Camfield

Professors
Karin L. Broker
Neil Havens
Basilios N. Poulos
George Smith
Geoffrey L. Winningham
Associate Professors
Brian Michael Huberman
Darra Keeton
Joseph Manca
Hamid Naficy
Linda E. Neagley
John Sparagana
Walter M. Widrig
Assistant Professor
Heghnar Watenpaugh
Distinguished Lecturer
Thomas McEvilley

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

This major offers two tracks of study: one in studio art and one in art history, the latter with concentrations in the Western tradition of European and American art. Courses include listings in studio art, film, and photography (ARTS), history of art listings in both art and architecture and film and media studies (HART), and theater listings (THEA).

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

For general university requirements, see Graduation Requirements (pages 17–19). Students majoring in art and art history must complete 12 departmental courses (36 to 38 semester hours, depending on certain course options). At least half of these courses must be at the 300 or 400 level, and students must take more than half of them at Rice.

Studio Art Track. Course selection in this track is subject to prerequisites and consultation with the studio faculty adviser. Students in the studio art track must take:
- 10 courses in studio art
- 2 courses in the history of art

Art History Track. The department recommends that course work include HART 480/580 *Theoretical Perspectives on the Visual Arts* and that course work taken outside the department include a foreign language. Students in the art history track must take:
- 10 courses in the history of art, with some chronological distribution, including:
  HART 205–206 *Introduction to the History of Art*
  1 non-Western art course
  At least 1 seminar
- 2 courses in studio art

Double Majors. Double majors must also select one track. These students must take at least 10 departmental courses. Those in the studio art track take 8 courses in studio art and 2 courses in the history of art. Those in the art history track take 8 courses in the history of art (including HART 205–206 *Introduction to the History of Art* and a non-Western art course) and 2 courses in studio art.

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

The M.A. in art history has concentrations in the Western tradition of European and American art, and graduate work is possible in film and media studies. Entering graduate students must pass a reading examination in either French or German. Other languages may be required depending on the course of study. The M.A. degree requires at least 33 semester hours of graduate courses. Students must complete:

- 3 hours of courses in art historical concepts, history, and methods of research
- 9 hours of thesis work (in the second year)
- 21 hours of lecture, seminar, and reading courses

Financial Support. Graduate fellowships and scholarships are awarded on the basis of scholarly achievement and available funds. Graduate students, as part of their training, are expected to render some service as research assistants.

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, which is a public film program. Featured films include classic and contemporary titles, independent and experimental films, documentaries, 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.

See ARTS (pages 258–263), HART (pages 366–371), and THEA (page 511–512) in the Courses of Instruction section.

Asian Studies

The School of Humanities and the School of Social Sciences

Professors
Anne C. Klein
Benjamin Lee
Richard J. Smith (Director)
Stephen A. Tyler
Professor Emeritus
Fred R. von der Mehden
Assistant Professors
Nanxiu Qian
Sarah Thal

Adjunct Professor
E. Douglas Mitchell
Lecturers
Lilly C. H. Chen
Marshall McArthur
Steven Lewis
Hiroko Sato
Insun Yang

Degree Offered: B.A.

This major encourages students to explore a variety of Asian cultures, past and present, from a number of different disciplinary perspectives. Our goal is not only to convey a sense of the richness, diversity, and complex interaction of Asian civilizations but also to show how an understanding of Asia may shed valuable light on Western cultural traditions. The major consists of courses from the schools of the Humanities and Social Sciences, including language classes in Chinese, Japanese, Sanskrit, Korean, and Tibetan. A team-taught interdisciplinary course, HUMA 111/211 *Introduction to Asian Civilizations,* serves as the core of the major.

Requirements: The undergraduate Asian Studies major will consist of 30 hours or more of course work. All majors must take the core course, HUMA 111/211 (also offered as ASIA 211, HIST 206 and RELI 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 17–19). Students majoring in Asian studies must complete 30 semester hours or more of major course work, including:

- HUMA 111/211 *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
- Two years of Asian language (this may include Asian languages 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.

Students may count toward the major one or more independent reading courses (ASIA 401 for the fall and ASIA 402 for the spring) taught by Asian studies faculty in the departments below. 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 Chinese Culture* (also offered as HIST 220)
ANTH 310 *Contemporary Chinese Culture* (enriched version of ANTH 220; also offered as HIST 310)
ANTH 353 *Cultures of India*

Asian Studies

ASIA 211 *Introduction to Asian Civilizations* (also offered as HIST 206, HUMA 111/211, and RELI 212)
ASIA 299 *Women in Chinese Literature* (also offered as CHIN 299 and WGST 299)
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 334 *Introduction to Traditional Chinese Narrative* (also offered as CHIN 334)
ASIA 335 *Introduction to Classical Chinese Literature* (also offered as CHIN 335)
ASIA 344 *Korean Literature* (also offered as HUMA 344 and KORE 344)
ASIA 401 and 402 *Independent Reading*

Chinese

CHIN 101 and 102 *Introduction to Chinese Language and Culture I* and *II*
CHIN 201 and 202 *Introduction to Chinese Language and Culture III* and *IV*
CHIN 203 and 204 *Accelerated Chinese Language and Culture I* and *II*
CHIN 299 *Women in Chinese Literature* (also offered as ASIA 299 and WGST 299)
CHIN 301 and 302 *Intermediate Chinese Language and Culture I* and *II*
CHIN 311 and 312 *Intermediate Accelerated Chinese Language and Culture I* and *II*
CHIN 330 *Introduction to Traditional Chinese Poetry* (also offered as ASIA 330)
CHIN 332 *Chinese Films and Modern Chinese Literature* (also offered as ASIA 332)
CHIN 334 *Introduction to Traditional Chinese Narrative* (also offered as ASIA 334)
CHIN 335 *Introduction to Classical Chinese Literature* (also offered as ASIA 334)
CHIN 403 *Reading Chinese Newspapers*
CHIN 404 *Reading Chinese Magazines*
CHIN 411 and 412 *Advanced Chinese Language and Culture I* and *II*
CHIN 431 and 432 *Readings in Classical Chinese Literature*

History

HIST 206 *Introduction to Asian Civilizations* (also offered as ASIA 211, HUMA 111/211, and RELI 212)
HIST 219 *Patterns of the Chinese Past*
HIST 220 *Contemporary Chinese Culture* (also offered as ANTH 220)
HIST 221 *Japanese History I: Early Japan to the Age of the Samurai*
HIST 222 *Japanese History II: Modern Japan*
HIST 250 *Traditional Chinese Culture*
HIST 310 *Contemporary Chinese Culture* (enriched version of HIST 220; also offered as ANTH 310)
HIST 341 *Early Chinese History*
HIST 342 *Modern Chinese History*
HIST 352 *The Comparative Modernization of China and Japan*
HIST 405 *Issues in Comparative History*
HIST 421 *Japanese History I: Early Japan to the Age of the Samurai* (enriched version of HIST 221)
HIST 422 *Japanese History II: Modern Japan* (enriched version of HIST 222)
HIST 448 *Creating Modern Japan: The Meiji Restoration*
HIST 450 *Traditional Chinese Culture* (enriched version of HIST 250)

History of Art and Architecture

HART 209 *Introduction to Asian Art*
HART 361 *Arts of China*
HART 365 *Arts of Japan*
HART 482 *Buddhism: Art and Faith*

Humanities
HUMA 111/211 *Introduction to Asian Civilizations* (also offered as HIST 206 and RELI 211)

Japanese
JAPA 101 and 102 *Introduction to Japanese Language and Culture I* and *II*
JAPA 201 and 202 *Introduction to Japanese Language and Culture III* and *IV*
JAPA 301 and 302 *Advanced Japanese Reading and Composition I* and *II*

Korean
KORE 101 and 102 *Introduction to Korean Language and Culture I* and *II*
KORE 201 and 202 *Introduction to Korean Language and Culture III* and *IV*
KORE 301 and 302 *Advanced Korean I* and *II*
KORE 344 *Korean Literature* (also offered as ASIA 344 and HUMA 344)
KORE 345 *Linguistic Structure of Korean* (also offered as LING 345)

Linguistics
LING 345 *Linguistic Structure of Korean* (also offered as KORE 345)
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*

Political Science
POLI 351 *Politics of Southeast Asia*
POLI 353 *Reforms in Post-Mao China*
POLI 460 *Seminar in Comparative Government*

Religious Studies
RELI 211 *Introduction to Asian Civilizations* (also offered as ASIA 211, HIST 206, and HUMA 111/211)
RELI 322 *Introduction to Buddhism*
RELI 325 *Buddhism and the Female*
RELI 330 *Introduction to the Tibetan Language* (also offered as TIBT 330)
RELI 470 *Buddhist Wisdom Texts*
RELI 471 *Buddhist Meditation Theory*
RELI 532 *Introduction to the Tibetan Language* (also offered as TIBT 532)
RELI 570 *Buddhist Wisdom Texts* (enriched version of RELI 470)
RELI 571 *Buddhist Meditation Theory* (enriched version of RELI 471)
RELI 572 *Introduction to Buddhism* (enriched version of RELI 322)

Sanskrit
SANS 301 and 302 *Elementary Sanskrit I* and *II* (also offered as LING 351 and 352)

Tibetan
TIBT 330 *Introduction to the Tibetan Language* (also offered as RELI 330)
TIBT 532 *Introduction to the Tibetan Language* (also offered as RELI 532)

See ASIA (page 263–264) in the Courses of Instruction section.

Bioengineering

George R. Brown School of Engineering

Chair
Larry V. McIntire

Professors
John W. Clark
David Hellums
Antonios G. Mikos
Ka-Yiu San
Kyriacos Zygourakis
Associate Professor
Fathi Ghorbel
Assistant Professors
Bahman Anvari
Michael A. Barry
Jennifer L. West
Lab Coordinator/Research Engineer
Ann Saterbak
Adjunct Professors
Suzanne D. Eskin
Craig J. Hartley
Joel L. Moake
Joseph Rodarte
Andrew Schafer
David Sears
C. Wayne Smith
Kenneth Wu
Adjunct Associate Professors
Gregory R. D. Evans
Michael H. Kroll
José A. Lopez
Michael Miller
Timothy Scott-Burden
Mark M. Udden
Michael Yaszemski
Adjunct Assistant Professors
Daniel E. Epner
Charles W. Patrick
Jan F. M . Post
Scott I. Simon
Alan W. Yasko

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

Graduate and undergraduate programs in bioengineering offer concentrations in areas that include cellular and molecular engineering, systems engineering and instrumentation, or biomaterials and biomechanics. Research areas include: 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.

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:

- build a solid engineering background for our students and equip them with advanced analytical, computational, and experimental skills
- provide them with a fundamental understanding of the life and medical sciences
- develop their ability to participate in interdisciplinary teams with molecular and cell biologists, or medical scientists

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.E. 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, 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 17–19). 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 *Single Variable Calculus I and II*, CHEM 121 and 122 *General Chemistry with Laboratory*, PHYS 101 (or PHYS 111) *Mechanics*, PHYS 102 (or PHYS 112) *Electricity and Magnetism*, and CAAM 210 or CAAM 211 *Introduction to Engineering Computation*. Sophomore students should take MATH 211 and 212, CHEM 211 and 212, BIOS 201, and either MECH 211 or ELEC 242. BIOE 252 *Bioengineering Fundamentals* should be taken in the second semester of the sophomore year.

Concentration Areas. Students in the B.S. program will choose courses from three specialization areas:

- Cellular and Molecular Engineering
- Systems Engineering and Instrumentation
- Biomaterials and Biomechanics

Students majoring in bioengineering must complete the following courses:

Core Courses

Bioengineering
BIOE 252 *Bioengineering Fundamentals*
Introductory Biomechanics/Biomaterials
Systems Physiology
Biosystems Transport and Reaction Processes
Bioengineering Laboratory
Bioengineering Design

Biosciences
BIOS 201 *Introductory Biology*
BIOS 301 *Biochemistry*
BIOS 311–315 (2 hours) *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*

Chemical Engineering
CENG 411 *Thermodynamics*

Chemistry
CHEM 121 *General Chemistry with Laboratory*
CHEM 122 *General Chemistry with Laboratory*
CHEM 211 (w/CHEM 213) *Organic Chemistry* (w/Laboratory)
CHEM 212 (w/CHEM 214) *Organic Chemistry* (w/Laboratory)

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

Other Engineering
ELEC 243 or MECH 211 *Circuits and Electronics or Engineering Mechanics*

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

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

Specialization Areas

Five bioengineering area elective courses, at least 3 of which must be at the senior level, will be required in one of the 3 areas:

- Cellular and Molecular Engineering
- Systems Engineering and Biomedical Instrumentation
- 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 72-73).

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 six to ten 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.

- 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
- Systems Engineering and Instrumentation
- Biomaterials and Biomechanics

See BIOE (page 264–266) in the Courses of Instruction section.

Biosciences

Biochemistry & Cell Biology

The Wiess School of Natural Sciences

Chair
Frederick B. Rudolph

Professors
Kathleen Beckingham
George N. Bennett
Zenaido Camacho
James Wayne Campbell
Raymon M. Glantz
Jordan Konisky
Kathleen Shive Matthews
John Steven Olson
Graham A. Palmer
George N. Phillips, Jr.
Charles R. Stewart
Associate Professors
Janet Braam
Richard H. Gomer
Michael C. Gustin
Edward P. Nikonowicz
Michael Stern
Assistant Professors
Bonnie Bartel
Susan L. Gibson
Seiichi P.T. Matsuda
Yousif Shamoo
Scott F. Singleton
Lecturer/Laboratory Coordinators
David R. Caprette
Bruce F. Cooper
Adjunct Professor
Florante A. Quiocho
Distinguished Faculty Fellow
Quentin H. Gibson
Senior Faculty Fellow
Deborah Kimbrell
Faculty Fellow
Marian Fabian

Ecology and Evolutionary Biology

The Wiess School of Natural Sciences

Chair
Ronald L. Sass

Professors
Frank M. Fisher, Jr.
Paul A. Harcombe
David C. Queller
Joan E. Strassmann
Stephen Subtelny
Calvin H. Ward
Assistant Professor
Evan Siemann
Adjunct Professors
Guy N. Cameron
Jaelyn Eberle
Nancy Greig
Fred T. Turner
Huxley Fellows
Mark Heilman
Barry Sullender
Lecturer/Laboratory Coordinator
Alan Thornhill
Instructor
Greg Mickelson

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

The undergraduate curriculum in the biosciences is administered jointly by two departments: the Department of Biochemistry & 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, plant biology, and advanced courses in other related areas.

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 17–19). 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 and 102 *SingleVariable Calculus I* and *II*

MATH 211 *Ordinary Differential Equations and Linear Algebra*

Chemistry

CHEM 121–122 *General Chemistry with Laboratory*

CHEM 211–212 *Organic Chemistry*

CHEM 213–214 *Organic Chemistry Lab*

Physics

PHYS 125 and 126 *General Physics I* and *II*

Biosciences

BIOS 201–202 *Introductory Biology*

BIOS 301–302 *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*

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 530 *NMR Spectroscopy and Molecular Modeling*

BIOS 532 *Spectroscopy*

BIOS 533 *Computational Biology*

BIOS 535 *Practical X-Ray Crystallography*

Options. One of the advanced laboratory course requirements can be satisfied by taking any of the following: (i) STAT 305 (if used to satisfy a lab requirement, this may not also be used to satisfy a lecture course requirement); or (ii) BIOS 310, if taken for at least two credits; or (iii) 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 (iv) BIOS 401/402 (one semester may be used to meet this lab requirement, and the other semester may be used to meet the requirement for a group A

or B course, as discussed below). 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 labs).

Course Sequence. Students should take the 100-level mathematics and chemistry courses in their freshman year; the 100-level physics courses and the 200-level biosciences courses in either their freshman or their sophomore year; and the 200-level chemistry courses in their sophomore year. Those with a weak background in chemistry should complete CHEM 121–122 before taking BIOS 201–202. Taking BIOS 201–202 while freshmen gives students earlier access to upper-level courses.

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 on page 34).

Biochemistry Major. Students majoring in biochemistry must take the following in addition to the courses listed above that are required of all biosciences majors (see listings in the Courses of Instruction section for Group A and B designations):

- BIOS 352 *Physical Chemistry for Biosciences* (or CHEM 311–312 *Physical Chemistry*)
- BIOS 481 *Molecular Biophysics*
- Two additional biosciences courses from Group A, at least one of which must be BIOS 341 *Cell Biology* or BIOS 344 *Molecular Biology and Genetics*
- 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 one semester of honors research, BIOS 401 or 402, for one of the elective courses from Group A if their faculty supervisor is from the Department of Biochemistry & Cell Biology. The recommended courses for those taking a limited number of Group A courses are BIOS 341 *Cell Biology* and BIOS 344 *Molecular Biology and Genetics*. Biochemistry majors are assigned an adviser from the Biochemistry & Cell Biology Department.

Biology Major. Students majoring in biology must take the following in addition to the courses listed above that are required of all biosciences majors (see listings in the Courses of Instruction section for Group A and B designations):

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

Students may substitute STAT 305 *Introduction to Statistics for Biosciences* for one of the last 3 courses.

Students may also substitute one 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 & Cell Biology) or from Group B (if their supervisor is from the

Department of Ecology and Evolutionary Biology). The recommended courses for those taking a limited number of Group A courses are BIOS 341 *Cell Biology,* BIOS 344 *Molecular Biology and Genetics,* and BIOS 352 *Physical Chemistry for Biosciences*.

Students may specialize in ecology and evolutionary biology or in cell and molecular biology by choosing the 3 additional biosciences courses from Group B or from Group A, respectively. Specialization is not required, and students may switch tracks 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 (also see Environmental Program listings on pages 158–159 and Environmental Science Double Major on pages 160–164).

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

Admission. Applicants for graduate study in the Department of Biochemistry & 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 & Cell Biology," which is updated annually. For general university requirements, see Graduate Degrees (pages 72–73).

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, Phillips, 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 are missing formal training in these subjects, they are required to take the equivalent background courses during their first year. The corresponding courses at Rice are:

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*
BIOS 800 *Graduate Research* (rotations in first year)
UTHSC GS210051 Ethical Dimensions of the Biomedical Sciences

Students must also take 2 units from the following set of advanced courses:
BIOS 525 *Plant Molecular Biology* (1 unit)
BIOS 530, 532, 533, 535 *Graduate Laboratory Modules in Molecular Biophysics* (1/2 unit each)
BIOS 545 Advanced Molecular Biology and Genetics (1 unit)
BIOS 588 *Advanced Cell and Developmental Biology* (1 unit)

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 orientation is provided during the first year.

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 entire 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:

- Continual 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 the thesis and make a public oral presentation of their research work to their Thesis Committee and other interested parties, answering subsequent questions posed by the committee.

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

Admission and First Year. 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
- A strong background in biology
- Completed course work in physics (one year), mathematics (including calculus), chemistry (including organic chemistry), and biochemistry

These requirements do not preclude admission of qualified applicants who have majored in areas other than biology.

Students should make up any deficiencies no later than their first year of residence (including the subsequent summer) but preferably during the summer preceding the first semester of residence. Students must pass an examination during the first year; those entering with an M.A. degree are normally exempt from this exam.

M.A. Program. For the M.A. degree, applicants must complete 30 semester hours of graduate study, including 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 for Graduate Degrees (see pages 72–73), applicants for the Ph.D. degree must:

- Complete three or more years of graduate study in ecology and evolutionary biology, with at least two years in residence at Rice
- Maintain a grade average of B or better in courses taken in the department and satisfactory grades in courses taken outside the department
- Perform satisfactorily in teaching assignments for at least two semesters
- Pass the admission to candidacy examination given by the Graduate Advisory Committee (this examination may be oral and/or written)
- Complete an original investigation worthy of publication in a scientific journal and a doctoral thesis
- Publicly defend the doctoral thesis
- Present a departmental seminar on the research

See BIOS (pages 266–273) in the Courses of Instruction section.

Center for the Study of Languages

Maria-Regina Kecht, *Director*
Michael Barlow, *Associate Director*

Lecturers
(with direct CSL affiliation)
Lilly C. H. Chen
Marshall McArthur
Hiroko Sato
E. Danielle Sharon
Insun Yang

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.

Chemical Engineering

The George R. Brown School of Engineering

Chair
Kyriacos Zygourakis

Professors
Constantine Armeniades
Sam H. Davis
Derek C. Dyson
Joe W. Hightower
George J. Hirasaki
Larry V. McIntire
Antonios G. Mikos
Clarence A. Miller
Mark A. Robert
Ka-Yiu San
Research Professor
Jesse David Hellums
Associate Professor
Walter G. Chapman
Assistant Professors
Thomas W. Badgwell
Jacqueline L. Goveas
Matteo Pasquali
Professors Emeritus
William W. Akers
Riki Kobayashi
Adjunct Professor
G. D. Fisher
Adjunct Associate Professors
Norman F. Carnahan
Waylon V. House
Adjunct Assistant Professor
Louise C. Moorhead
Lecturer
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.A. and B.S. in Chemical Engineering

For general university requirements, see Graduation Requirements (pages 17–19). For the **B.A. degree,** students majoring in chemical engineering must complete 73 semester hours of departmental courses, which include prerequisites and laboratory courses. Students must have a minimum of 135 hours at graduation.

The **B.S.Ch.E. 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 four 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 135 hours at graduation. They must complete the following courses:

Chemistry
CHEM 151–152 *Honors Chemistry with Laboratory*
(or CHEM 121–122 *General Chemistry with Laboratory*)
CHEM 211–212 *Organic Chemistry*
CHEM 213–214 *Organic Chemistry Lab*
CHEM 311–312 *Physical Chemistry*
Any 2 of CHEM 212, CHEM 311, or CHEM 312 are required for the B.S. degree.

Chemical Engineering
CENG 301 *Chemical Engineering Fundamentals*
CENG 302 *Separation Processes*
CENG 303 *MATLAB and MAPLE for Chemical Engineers*
CENG 343 *Chemical Engineering Lab I*
CENG 390 *Kinetics and Reactor Design*
CENG 401 and 402 *Transport Phenomena I* and *II*
CENG 403 *Equipment Design*
CENG 404 *Process Design*
CENG 411 and 412 *Thermodynamics I* and *II*
CENG 443 and 444 *Chemical Engineering Lab II* and *III* (CENG 500 *Undergraduate Research* may be substituted for either CENG 443 or 444)
CENG 470 *Process Dynamics and Control*
CENG 471 *Process Dynamics and Control Lab*

Mathematics
MATH 101 and 102 *Single Variable Calculus I* and *II*
MATH 211 *Ordinary Differential Equations and Linear Algebra*
MATH 212 *Multivariable Calculus*
(or equivalent honors courses)

Computational and Applied Mathematics
CAAM 210 or 211 *Introduction to Engineering Computation* (to satisfy computing requirements)
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*
CENG 420 *Biosystems Transport and Reaction Processes*
CENG 503 *Chemical Engineering Processes: Air Pollution*
(or see requirements for focus areas in environmental science/engineering, bioengineering, materials science/engineering, and computational engineering)

The undergraduate curriculum is designed so that outstanding students interested in careers in research and teaching may enter graduate school after earning either bachelor's degree.

Prerequisites for Chemical Engineering Courses. Before undergraduates may register for courses in chemical engineering at the 300 level and above, they must satisfy the following prerequisites:

For CENG 301
MATH 101 and 102
CHEM 151–152 (or 121–122)
Co-/Prerequisite: CENG 303

For CENG 302
CENG 301
Co-/Prerequisites: MATH 211 and 212 and CAAM 210 or 211

For CENG 390
CENG 301
MATH 211 and 212
Co-/Prerequisite: CENG 343

For CENG 401
PHYS 101 and 102
CENG 302

For CENG 402
CENG 401

For CENG 403
CENG 302, 390, 402, and 411
Co-/Prerequisites: CENG 470 and MECH 211

For CENG 404
CENG 403
Co-/Prerequisites: CENG 412 and 470

For CENG 411
CENG 302

For CENG 412
CENG 411

For CENG 470
CENG 390, 401, and 411

In unusual cases, and with the written consent of the instructor, students may register for a course without completing the required prerequisite(s). Waivers, however, are not transferable.

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

For general university requirements, see Graduate Degrees (pages 72–73).

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 (2 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 (pages 279–282) in the Courses of Instruction section.

Chemistry

The Wiess School of Natural Sciences

Chair
Kenton H. Whitmire

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

Associate Professor
John S. Hutchinson

Assistant Professors
Victor Behar
Vicki L. Colvin
Seiichi P. T. Matsuda
Scott F. Singleton

Lecturer
Kristen Kulinowski

Distinguished Faculty Fellow
Robert H. Hauge

Faculty Fellows
Daniel Colbert
Bruce R. Johnson

Adjunct Professors
Tohru Fukuyama
M. Robert Willcott

Degrees Offered: B.A., 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 array of modern instrumentation, each chemistry major 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, 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 and fullerene nanowires.

Degree Requirements for B.A. in Chemistry

For general university requirements, see Graduation Requirements (pages 17–19). Students majoring in chemistry must have a total of at least 127 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 213–214 *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 360 *Inorganic Chemistry*
CHEM 491 *Research for Undergraduates*

Mathematics

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

Physics

PHYS 101 or 111 *Mechanics*
PHYS 102 or 112 *Electricity and Magnetism*
*(*PHYS 201 *Waves and Optics* and PHYS 202 *Modern Physics* recommended)

Other

NSCI 230 *Computation in the Natural Sciences* (or equivalent)

Additional Courses

At least 2 courses from the following:

CHEM 401 *Advanced Organic Chemistry*
CHEM 430 *Quantum Chemistry*
CHEM 495 *Transition Metal Chemistry*

To ensure that students receive suitable breadth in their laboratory experience, these 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 213 and CHEM 214, with approval of the committee. Since this advanced modular laboratory program is being offered for the first time this year, it will be necessary to phase in the curriculum over the next couple of years. It is anticipated that additional modules other than those specifically listed above will be developed during this time period. During the interim, the department will accept CHEM 313 and CHEM 314 (which were offered in previous years, but will not be offered in 1999–2000) as substitutes for two advanced modules each. For special situations, please consult your departmental adviser.

At least 4 advanced laboratory module credit hours from the following list.

CHEM 373 *Advanced Module in Fullerence 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 384 *Advanced Module in Instrumental Analysis, B*

6 hours in upper-level courses (from chemistry, physics, mathematics, computational and applied mathematics, biochemistry, or other subjects with adviser approval)

Students must take at least 3 hours of research (CHEM 491) in no less than 2-hour segments. With department 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.

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. For certification, students must complete:

- All core courses (see above)
- CHEM 495 *Transition Metal Chemistry*
- Either CHEM 401 *Advanced Organic Chemistry* or CHEM 430 *Quantum Chemistry*
- 9 hours in upper-level courses from chemistry, physics, mathematics, computational and applied mathematics, biochemistry, or other approved subjects

A foreign language, preferably German, is recommended.

Chemical Physics Major. The chemical physics major is offered in conjunction with the Department of Physics; faculty advisers are Professor Hutchinson in chemistry and Professor Stevenson in 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:

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 and 102 *Single Variable Calculus I* and *II*
(or MATH 121 and 122)
MATH 211 *Ordinary Differential Equations and Linear Algebra*
MATH 212 *Multivariable Calculus*
(or MATH 221 and 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, CHEM 415
6 hours from CHEM 213, CHEM 214, CHEM 351, CHEM 352, CHEM 373–384, PHYS 331, or PHYS 332
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.A./Ph.D. Program in Chemistry

The high level of training provided in the Rice B.A. program enables certain especially 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.A. 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. Students specializing in organic chemistry should also start taking cumulative examinations during the senior year.

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

For general university requirements, see Graduate Degrees (pages 72–73). Students who have completed course work equivalent to that required for a B.A. in chemistry may apply for admission to the Ph.D. program. For more information, see Admission to Graduate Study (page 77).

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

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 courses
- Pass 2 oral examinations, the first involving a presentation of the student's research progress to date and the second a presentation of an original research proposal
- If specializing in organic chemistry, pass 5 cumulative examinations (which are given periodically)
- Submit and defend a publishable thesis that represents an original and significant contribution to the field of chemistry

See CHEM (pages 283–286) in the Courses of Instruction section.

Civil Engineering

The George R. Brown School of Engineering

Chair
Ahmad J. Durrani

Professors
Ronald P. Nordgren
Pol D. Spanos
Anestis S. Veletsos

Associate Professors
Panos Dakoulas
Satish Nagarajaiah

Assistant Professor
Michael Terk

Lecturers
Prabadh V. Banavalkar
Moyeen Haque
Milton Hanks
Sergios Liapis
Pat H. Moore
John M. Sedlak
Ed Segner, III

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

The profession of civil engineering involves the development, planning, design, construction, and operation of large facilities and systems. These include buildings, bridges, and other structures, as well as systems for transportation, water supply, drainage and flood control, and waste disposal and pollution control. Also part of this field is the planning of new and the redevelopment of existing civil infrastructure. Students in the professional degree program (B.S.C.E.) may opt for either the basic program or a specialized environmental engineering option.

The research interests of the civil engineering faculty lie in the areas of structural engineering and mechanics, earthquake engineering, geotechnical engineering, and computer-aided design. These include structural dynamics, offshore technology, reinforced concrete and prestressed concrete, reliability of systems, random vibrations, soil dynamics, soil-structure interaction, and structural control. Other interests include experimental dynamics, studies of reinforced concrete structural assemblies, the mechanical properties of soil, and the mechanics of solids. A joint M.B.A./Master of Civil Engineering degree is also available in conjunction with the Jessie H. Jones Graduate School of Management.

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

For general university requirements, see Graduation Requirements (pages 17–19). 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.

The **B.S.C.E.** degree is a professional degree accredited by the Accreditation Board for Engineering and Technology (ABET). Students may choose between a basic program and the more specialized environmental engineering option offered in conjunction with the Department of Environmental Science and Engineering (see below). 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:

Basic Program

Mathematics

MATH 101 and 102 *Single Variable Calculus I* and *II*
MATH 211 *Ordinary Differential Equations and Linear Algebra*
MATH 212 *Multivariable Calculus*

Physics

PHYS 101 *Mechanics* (with lab)
PHYS 102 *Electricity and Magnetism* (with lab)

Chemistry

CHEM 121–122 *General Chemistry with Laboratory*

Computational and Applied Mathematics

CAAM 210 or CAAM 211 *Introduction to Engineering Computation*
CAAM 335 *Foundations of Applied Mathematics*
(or CAAM 353 *Computational Numerical Analysis)*
CAAM 381 *Introduction to Applied Probability*
(or STAT 310 *Probability and Statistics)*

Additional Fields

MECH 200 *Classical Thermodynamics*
*(*or ELEC 243 *Introduction to Electronics)*
MSCI 301 *Materials Science*

1 course from the following:

CHEM 211 *Organic Chemistry*
GEOL 101 *The Earth*GEOL 102 *Evolution of the Earth*
ENVI 201 *Introduction to Environmental Systems*
SPAC 203 *Atmosphere, Weather, and Climate*
PHYS 201*Waves and Optics*
BIOS 201 *Introductory Biology*
*(*or BIOS 202 *Introductory Biology)*

Civil Engineering

CIVI 211 *Engineering Mechanics*
CIVI 251 *Plane Surveying*
CIVI 300 *Mechanics of Solids*
CIVI 302 *Strength of Materials Lab*
CIVI 304 and 305 *Structural Analysis I* and *II*
CIVI 306 *Steel Design*
CIVI 363 *Applied Fluid Mechanics*
CIVI 400 *Mechanics of Solids II*
CIVI 403 *Reinforced Concrete Design*
CIVI 404 *Concrete Lab*
CIVI 451 *Introduction to Transportation*
CIVI 464 *Hydrology and Watershed Analysis*
CIVI 470 *Basic Soil Mechanics*
CIVI 530 *Concrete Building Design*
(or CIVI 540 *Steel Building Design)*
ENVI 403 *Principles of Environmental Engineering*

Electives

1 approved elective at the 400 or 500 level in civil engineering or a closely related area (CIVI 480 *Senior Design Project* is recommended)

Environmental Engineering Option

Mathematics

MATH 101 and 102 *Single Variable Calculus I* and *II*
MATH 211 *Ordinary Differential Equations and Linear Algebra*
MATH 212 *Multivariable Calculus*

Computational and Applied Mathematics

CAAM 210 or CAAM 211 *Introduction to Engineering Computation*
CAAM 335 *Foundations of Applied Mathematics*
(or CAAM 353 *Computational Numerical Analysis)*
CAAM 381 *Introduction to Applied Probability*
(or STAT 310 *Probability and Statistics)*

Physics

PHYS 101 *Mechanics* (with lab)
PHYS 102 *Electricity and Magnetism* (with lab)

Biological Sciences

BIOS 201 *Introductory Biology*
*(*or BIOS 202 *Introductory Biology)*

Chemistry

CHEM 121–122 *General Chemistry with Laboratory*

1 course from the following:
CHEM 212 *Organic Chemistry and* CHEM 214 *Organic Chemistry Lab*
CHEM 311 *Physical Chemistry*
GEOL 326 *Environmental Geology*
GEOL 451 *Analysis of Environmental Data*

Civil Engineering
CIVI 211 *Engineering Mechanics*
CIVI 300 *Mechanics of Solids*
CIVI 302 *Strength of Materials Lab*
CIVI 304 *Structural Analysis I*
CIVI 306 *Steel Design*
CIVI 363 *Applied Fluid Mechanics*
CIVI 403 *Reinforced Concrete Design*
CIVI 404 *Concrete Lab*
CIVI 470 *Basic Soil Mechanics*

Environmental Science and Engineering
ENVI 201 *Introduction to Environmental Systems*
ENVI 401 *Introduction to Environmental Chemistry*
ENVI 403 *Principles of Environmental Engineering*
ENVI 412 *Hydrology and Watershed Analysis*
ENVI 434 *Chemical Transport and Fate in the Environment*

3 courses from the following:
ENVI 518 *Groundwater Hydrology*
ENVI 525 *Environmental Microbiology*
ENVI 530 *Physical-Chemical Processes in Environmental Engineering*
ENVI 536 *Biological Processes*

Degree Requirements for M.C.E., M.S., and Ph.D. in Civil Engineering

Although the B.S.C.E. is a suitable terminal degree for students interested in a professional career, a master's degree (M.C.E.) is becoming increasingly desirable. Students seeking a career in teaching or in research and development should complete the Ph.D. degree. The M.S. and Ph.D. programs give special attention to developing student interest in, and ability for, independent study and research. Students may pursue graduate studies in structural engineering, structural mechanics, and geotechnical engineering. A joint M.B.A./M.C.E. degree is also available in conjunction with the Jesse H. Jones Graduate School of Management. Involvement in undergraduate teaching is expected of both M.S. and Ph.D. students.

Admission. Applicants 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.

M.C.E. Program. For general university requirements, see Graduate Degrees (pages 72–73). 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 72–73). 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.S. Program. For general university requirements, see Graduate Degrees (pages 72–73). To earn a M.S. degree, students must:

- Complete at least 24 semester hours of approved courses
- Produce an acceptable thesis
- Pass a final oral examination on the thesis

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. For general university requirements, see Graduate Degrees (pages 72–73). To earn a Ph.D. degree, 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

Should the department faculty conclude, at any stage of the doctoral program, that a student is unqualified to continue, the student is dismissed.

See CIVI (pages 289–293) in the Courses of Instruction section.

Classics

The School of Humanities

Professor
Harvey Yunis
(on leave 1999–2000)

Associate Professors
Hilary S. Mackie
Kristine Gilmartin Wallace
Visiting Assistant Professor
Christian Brockman *(spring 2000)*

Degree Offered: B.A.

Formally administered by the Department of Hispanic and Classical Studies, the classics major explores the languages, literature, history, and culture of ancient Greece and Rome. Students may elect to concentrate on either Latin or classics, which involves the study of ancient Greek as well as Latin. Both concentrations emphasize the study of the literature of Greek and Roman civilizations in the original languages. Additional "classical studies" courses use English translations to explore various aspects of classical civilizations.

The classics major provides an essential base for further graduate work in classics, ancient history, ancient philosophy, ancient religion (especially early Christianity), and ancient art history. A secondary teaching certificate awarded in conjunction with the B.A. is available through the Department of Education. 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 17–19).

Classics Majors. Students majoring in classics (both Greek and Latin) must complete 27 semester hours of departmental courses as follows:

- 21 hours (7 courses) in Greek and Latin at the 200 level or above
- At least 6 hours (2 courses) in each language
- 3 hours (1 course) at the 300 level in classical studies or from another department in one of the following: Greek and Roman philosophy, art, history, or religion
- LATI 493 *Comprehensive Examination* in the spring semester of the senior year

Latin Majors. Students majoring in Latin must complete 24 semester hours of departmental courses as follows:

- 18 hours (6 courses) in Latin at the 200 level or above
- 3 hours (1 course) at the 300 level in classical studies or from another department in one of the following: Greek and Roman philosophy, art, history, or religion
- LATI 493 *Comprehensive Examination* in the spring semester of the senior year

Comprehensive Examination. Students in both concentrations take the comprehensive examination in the last week of their last semester.

See CLAS (pages 294–295), GREE (page 365), and LATI (page 408) in the Courses of Instruction section.

Cognitive Sciences

The School of Social Sciences

Director
Randi C. Martin

Professors
Robert S. Cartwright, Jr.
John W. Clark, Jr.
James E. Copeland
Philip W. Davis
Richard E. Grandy
Stephen L. Klineberg
Daniel Osherson
Stephen A. Tyler
Michael Watkins

Professor Emeritus
Sydney M. Lamb

Associate Professors
Suzanne E. Kemmer
David M. Lane
Devika Subramanian

Assistant Professors
Michel Achard
Michael Barlow
Michael Byrne
Eric Margolis
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, while others work at more abstract philosophical levels.

Degree Requirements for B.A. in Cognitive Sciences

Students planning to major in cognitive sciences should take one or more of the following courses during the 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 17–19). 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 2 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, and neuroscience. Suitable courses in the first three of these areas are listed below under their respective department headings. Suitable courses in neuroscience include: BIOS 421 *Neurobiology*, CSCI 420 *Brain and Behavior*, ELEC 481 *Fundamentals of Systems Physiology and Biophysics*, LING 411 *Neurolinguistics*, and PSYC 362 *Biopsychology*.

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 the 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 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*
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*

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*

Psychology
PSYC 308 *Memory*
PSYC 309 *Psychology of Language*
PSYC 340 *Research Methods*
PSYC 351 *Psychology of Perception*
PSYC 352 *Formal Foundations of Cognitive Science*
PSYC 360 *Thinking*
PSYC 362 *Biopsychology*

Other Departments

ANTH 406 *Cognitive Studies in Anthropology and Linguistics*
BIOS 421 *Neurobiology*
ELEC 201 *An Introduction to Engineering Design*
ELEC 481 *Fundamentals of Systems Physiology and Biophysics*
ELEC 498 *Introduction to Robotics*
SOCI 353 *Conceptions of Human Nature*
STAT 300 *Model Building*

See CSCI (page 301) in the Courses of Instruction section.

Computational and Applied Mathematics

The George R. Brown School of Engineering

Chair
John E. Dennis

Professors
John Edward Akin
Michael M. Carroll
William J. Cook
Steven J. Cox
Sam H. Davis
Danny C. Sorensen
William W. Symes
Richard A. Tapia
Chao-Cheng Wang

Professors Emeritus
Robert E. Bixby
Angelo Miele
Paul E. Pfeiffer

Associate Professors
David Applegate
Nathaniel Dean
Matthias Heinkenschloss
Yin Zhang

Assistant Professors
Liliana Borcea
Petr Kloucek

Faculty Fellow
Alan Carle

Adjunct Professors
J. Bee Bednar
Evin Joyce Cramer
Elmer Eisner
Roland Glowinski
Richard P. Kendall
Emilio J. Nuñez
Donald W. Peaceman
Phuong A. Vu

Adjunct Associate Professors
Richard Carter
Amr El-Bakry
Michael W. Trosset

Adjunct Assistant Professor
Aladin M. Boriek

Lecturer
Michael D. Pearlman

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 programming 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 B.A./M.C.A.M. degree program and a joint M.B.A./Master of Engineering degree are 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 54 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*
MATH 212 *Multivariable Calculus*
COMP 210 *Introduction to Principles of Scientific Computation*
COMP 212 *Intermediate Programming*
CAAM 210 or 211 *Introduction to Engineering Computation*

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*
CAAM 336 *Differential Equations in Science and Engineering*
(or STAT 310 *Probability and Statistics* or STAT 331 *Applied Probability)*

Advanced Courses: Two full-year sequences chosen from the following four areas

1. Numerical Analysis
CAAM 451 *Numerical Linear Algebra*
CAAM 453 *Numerical Analysis and Ordinary Differential Equations*

2. Operations Research
CAAM 471 *Linear Programming*
CAAM 475 *Integer and Combinatorial Optimization*

3. Optimization
CAAM 454 *Optimization Problems in Computational Engineering and Science*
CAAM 460 *Optimization Theory*

4. Differential Equations
CAAM 436 *Partial Differential Equations I*
CAAM 437 *Partial Differential Equations II*

Electives: At least three 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 credentials of each applicant individually. For general information, see Graduate Degrees (pages 72–73) and Admission to Graduate Study (page 77).

Applicants should be aware that it normally takes one to two years to obtain a master's degree and three to five years to obtain a doctorate (a master's degree is not a prerequisite for the doctoral degree).

M.C.A.M. Program. This professional degree program emphasizes the applied aspects of mathematics. The M.C.A.M. degree requires satisfactory completion of at least 30 semester hours of course work approved by the department.

M.A. Program. For an M.A. in computational and applied mathematics, students must:

- Complete at least 30 semester hours at the graduate level, including 5 courses in computational and applied mathematics, in addition to thesis work
- Produce an original thesis acceptable to the department
- Perform satisfactorily on a final public oral examination on the thesis

For students working toward the Ph.D. degree, successful performance on the thesis proposal fulfills the master's thesis requirement.

Ph.D. Program. For a Ph.D. in computational and applied mathematics, students must:

- Complete a course of study approved by the department, including at least 2 courses outside the major area
- Perform satisfactorily on preliminary and qualifying examinations and reviews
- Produce an original thesis acceptable to the department
- Perform satisfactorily on a final public oral examination on the thesis

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 & Cell Biology, Geology and Geophysics, Computer Science, Chemical Engineering, Electrical and Computer 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 above list). 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 72–73).

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 two 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 following requirements:

Required Courses
COMP 412 *Compiler Construction*
ELEC 425 *Computer Systems Architecture*
CAAM 420 *Introduction to Computational Science* (taken in the first semester)

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 71–72). 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 (pages 274–279) in the Courses of Instruction section.

Computer Science

The George R. Brown School of Engineering

Chair
Moshe Y. Vardi

Professors
Robert S. Cartwright, Jr.
Matthias Felleisen
Ronald N. Goldman
G. Anthony Gorry
Kenneth W. Kennedy, Jr.
Willy E. Zwaenepoel

Adjunct Professors
Jack Dongarra
Geoffrey Fox
Micha Hofri
S. Lennart Johnsson

Associate Professors
Keith D. Cooper
Alan L. Cox
Devika Subramanian
Joe D. Warren

Adjunct Associate Professors
P. Read Montague
Scott K. Warren

Assistant Professors
Peter Druschel
Lydia Kavraki
Dan Wallach

Senior Faculty Fellow
John Mellor-Crummey

Research Scientists
Vikram Adve
Michael Fagan
Robert Fowler
Richard Hanson
Charlie Hu
Guolin Jin
Linda Torczon

Lecturers
Ian Barland
Kathryn Fisler
John Greiner
Eric Sachs

Visiting Professor
Steve Wallach

Visiting Scholars
Andras Kornai
Alfonso San Miguel-Aguirre

Postdoctoral Research Associates
Evan Speight
Rizos Sakellariou

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

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 degree (B.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 17–19). 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 59 and 61 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 and 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 212 *Multivariable Calculus*
MATH 221 *Honors Calculus III*

Breadth Courses (7 courses for a total of 25 hours, required for all majors, usually taken in the junior and senior years)

STAT 310 or 331 *Probability and Statistics*
CAAM 335 *Foundations of Applied Mathematics I*
(or MATH 355 *Linear Algebra)*
CAAM 353 *Computational Numerical Analysis*
ELEC 326 *Digital Logic Design*
COMP 311 *Programming Languages*
(or COMP 412 *Compiler Construction)*
COMP 481 *Automata, Formal Languages, and Computability*
(or COMP 482 *Design and Analysis of Algorithms)*
COMP 421 *Operating Systems and Concurrent Programming*

Electives (2 courses for a total of 6 to 8 hours in computer science at the 300 level or higher)

Degree Requirements for B.S. in Computer Science

The B.S.C.S. degree is designed for students who are interested in a more in-depth study of computer science in order to prepare themselves for a professional career in the computing industry. To receive a B.S.C.S. degree, a student must complete all the requirements of the B.A. degree (i.e., base, breadth, and electives), with the addition of PHYS 101–102 (or PHYS 111–112) (7 hours) to ensure a strong scientific background. In addition, the student must complete the depth component. This component consists of

a coherent set of four or five courses specializing in some area of computer science. The same course cannot satisfy both the breadth requirement and the depth requirement. Students can adopt a preset depth component or design their own components, consisting of at least 15 hours. B.S.C.S. degree plans have to be approved by departmental advisers by no later than the end of the junior year. Sample curricula are listed on the departmental website; more information is available from department advisers. The computer science requirements of the B.S.C.S. degree total 83 to 85 semester hours. For a B.S. degree in computer science, a total of 128 semester hours is required.

Degree Requirements for M.C.S., M.S., and Ph.D. in Computer Science

Master's Programs. For general university requirements, see Graduate Degrees (pages 72–73). The professional M.C.S. degree is a terminal degree for students intending to pursue a technical career in the computer industry. To earn the M.C.S. degree, students must successfully complete 30 semester hours of course work approved by the department and following the plan formulated in consultation with the department adviser.

Areas of concentration for the M.C.S. include algorithms and complexity, artificial intelligence, compiler construction, distributed and parallel computing, graphics and geometric modeling, operating systems, and programming languages. The professional program normally requires three semesters of study.

The M.S. degree is a research degree requiring a thesis in addition to course work.

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 4 to 6 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 3rd semester
- Complete a master's thesis by the end of the 5th 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 7 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.

See COMP (pages 295–301) in the Courses of Instruction section.

Economics

The School of Social Sciences

Chair
George R. Zodrow

Professors
Dagobert L. Brito
Bryan W. Brown
James N. Brown
John B. Bryant
Mahmoud El-Gamal
Malcolm Gillis
Peter Hartley
Peter Mieszkowski
Hervé Moulin
Robin C. Sickles
Gordon W. Smith
Ronald Soligo

Associate Professors
Suchan Chae
Marc Peter Dudey

Adjunct Professors
Bruce M. Lairson
John Michael Swint

Adjunct Associate Professors
Charles E. Begley
Joon Park

Assistant Professors
Yasar Barut
Yoosoon Chang
Monika Gehrig-Merz
Kevin Hasker
Yuka Ohno

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

For general university requirements, see Graduation Requirements (pages 17–19). Students in either major should have at least 120 total semester hours at graduation. Full information regarding major requirements is available from the department office.

Economics Major. Students majoring in economics must take at least 10 courses: 9 in economics and 1 in quantitative methods (see below). Students may graduate with honors by achieving a B+ (3.33 grade point average) in all economics courses and by writing a senior thesis while taking ECON 403 and 404 *Senior Independent Research* (see Honors Programs on page 34), or HONS 470 *Rice Undergraduate Scholars Program—Proposal Development* and HONS 471 *Rice Undergraduate Scholars Program—Research* (see HONS courses page 383).

Students may transfer no more than 3 of the 9 required economics courses from other schools, and students transferring the equivalent of ECON 211 or 212 *Principles of Economics I* or *II* must pass a department qualifying exam (additional transfer credits in economics may count toward university graduation requirements but not departmental

major requirements). In general, the required course in quantitative analysis may also be transferred; however, ACCO 305 *Introduction to Accounting* cannot be transferred from another institution. The three-course limit on transfer credits does not apply to students transferring from other universities.

The department strongly recommends that students take two semesters of calculus (MATH 101 and 102 *Single Variable Calculus I* and *II* or MATH 111 *Fundamental Theorem of Calculus* and MATH 112 *Calculus and Its Applications*) and a course in probability and statistics (ECON 382 *Elements of Statistical Methods*, also offered as STAT 310 *Probability and Statistics*). Failure to take these courses will limit the range of electives available to the student.

Course requirements for the economics major include the following:

All of the following:

ECON 211 and 212 *Principles of Economics I* and *II*
ECON 370 *Microeconomic Theory*
(or ECON 372 *Mathematical Microeconomics)*
ECON 375 *Macroeconomic Theory*

At least 3 courses in applied economics from the following:

ECON 301 *History of Economic Analysis*
ECON 355 *Money and Banking*
ECON 415 *Human Resources, Wages, and Welfare*
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 and 439 *Economics of the Law I* and *II*
ECON 440 *Economics of Uncertainty*
ECON 445 *Managerial Economics*
ECON 448 *Corporation Finance*
ECON 450 *World Economic and Social Development*
ECON 451 *Political Economy of Latin America*
ECON 452 *Principles of Islamic Economics and Finance*
ECON 455 *Money and Financial Markets*
ECON 461 *Urban Economics*
ECON 472 *Introduction to Game Theory*
ECON 480 *Environmental and Energy Economics*
ECON 482 *Distributive Justice—A Microeconomic Approach*
ECON 483 *Public Finance*
ECON 485–486 *Contemporary Economics Issues*

1 quantitative methods course from the following (or approved equivalent):

ECON 382 *Elements of Statistical Methods*
ECON 400 *Econometrics*
ECON 471 *Linear Programming*
ECON 475 *Integer and Combinatorial Optimization*
ECON 476 *Operations Research—Stochastic Models*
CAAM 210–211 *Introduction to Engineering Computation*
STAT 300 *Model Building*
STAT 310 *Probability and Statistics*
STAT 381 *Applied Probability*
STAT 410 *Introduction to Statistical Computing and Regression*
STAT 431 *Mathematical Statistics I*
COMP 212 *Intermediate Programming*
ACCO 305 *Introduction to Accounting*

Mathematical Economic Analysis Major. Students majoring in mathematical economic analysis must take at least 16 courses (see below). Students may graduate with honors by achieving a B+ (3.33 grade point average) in the 16 courses required for the major and any other economics electives taken. Course requirements for the mathematical economic analysis major include the following:

All of the following:
ECON 211 and 212 *Principles of Economics I* and *II*
ECON 372 *Mathematical Microeconomics*
ECON 375 *Macroeconomic Theory*
ECON 382 *Elements of Statistical Methods* (STAT 310 *Probability and Statistics*)
(or STAT 410 *Introduction to Statistical Computing and Regression)*
(or STAT 431 *Mathematical Statistics I)*
ECON 400 *Econometrics*
MATH 101 and 102 *Single Variable Calculus I* and *II*
MATH 211 *Ordinary Differential Equations and Linear Algebra*
MATH 212 *Multivariable Calculus*
(or MATH 221 *Honors Calculus III)*
MATH 355 *Linear Algebra*
(or CAAM 310 *Linear Algebra)*

At least 3 courses in applied economics from the following:
ECON 301 *History of Economic Analysis*
ECON 355 *Money and Banking*
ECON 415 *Human Resources, Wages, and Welfare*
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 and 439 *Economics of the Law I* and *II*
ECON 440 *Economics of Uncertainty*
ECON 445 *Managerial Economics*
ECON 448 *Corporation Finance*
ECON 450 *World Economic and Social Development*
ECON 451 *Political Economy of Latin America*
ECON 452 *Principles of Islamic Economics and Finance*
ECON 455 *Money and Financial Markets*
ECON 461 *Urban Economics*
ECON 480 *Environmental and Energy Economics*
ECON 483 *Public Finance*
ECON 485 and 486 *Contemporary Economics Issues*

At least 1 course in advanced analysis from the following (or an approved equivalent):
ECON 440 *Economics of Uncertainty*
ECON 471 *Linear Programming*
ECON 472 *Introduction to Game Theory*
ECON 475 *Integer and Combinatorial Optimization*
ECON 476 *Operations Research—Stochastic Models*
ECON 477 *Mathematical Structure of Economic Theory*
ECON 478 *Economic Applications of Mathematical Programming*
ECON 482 *Distributive Justice—A Microeconomic Approach*
CAAM 451 *Numerical Linear Algebra*
CAAM 460 *Optimization Theory*
CAAM 472 *Game Theory and Decision Analysis*

At least 1 approved research course from the following:
ECON 403–404 *Senior Independent Research*
ECON 495–496 *Senior Seminar*

Graduate Courses in the Mathematical Economic Analysis (MTEC) Major. Undergraduate majors satisfying the course prerequisites may, subject to the approval of the instructor and of the chair of the departmental undergraduate committee, substitute certain graduate courses for undergraduate courses as follows: ECON 501 for ECON 372; ECON 502 for ECON 375; ECON 504 for ECON 382; ECON 510 for ECON 400. Furthermore, ECON 505 and ECON 508 may also be taken by undergraduates and may be used toward satisfying MTEC course requirements. Specifically, ECON 505 could be

used either in the category headed "At least 3 courses in applied economics from the following . . ." or "At least 1 course in advance analysis from the following," while ECON 508 could be used only in the category "At least 1 course in advanced analysis from the following."

Note that this set of graduate courses (ECON 501, 502, 504, 505, 508, and 510) includes 6 of the 7 courses required during the first year of the Ph.D. program at Rice. Rice graduates who subsequently enroll in the Ph.D. program at Rice will be given graduate credit for all 500-level economics courses taken while undergraduates. With judicious planning and hard work a student could, with one additional year of study at Rice, earn an M.A. in economics.

To obtain an M.A., students must satisfy all requirements for Ph.D. candidacy. In particular, students must prepare original research (a prospectus) that could be developed into a Ph.D. dissertation. This work could be an extension or embellishment of a paper written as a senior independent research project (ECON 403–404). In some cases, and at the discretion of the thesis adviser, the paper produced in ECON 403–404 may fulfill this requirement. To obtain a Ph.D. candidacy, students also are required to take the qualifying exams in economic theory and a field examination in one specialized field within economics. These fields are listed in the section below on " Degree Requirements for the Ph.D. in Economics."

The completion of a Ph.D. dissertation typically requires at least 1 additional year of research (but no additional courses) beyond the M.A.

Only highly motivated students with excellent aptitudes for economics and strong backgrounds in mathematics should consider substituting graduate for undergraduate courses. Typically, but not necessarily, such students will be majors in mathematical economic analysis. The course work in the graduate program would be most appropriate for students aiming for graduate study in economics or a related field such as finance.

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 (page 93) 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 72–73). Candidates for the Ph.D. degree usually spend from two to two and a 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 18 courses, including ECON 593–594 *Workshop in Economics I* and ECON 595–596 *Workshop in Economics II*
- Perform satisfactorily on written general examinations in economic theory
- 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 (pages 302–308) in the Courses of Instruction section.

Education

The School of Humanities

Chair
Meredith Skura

Professors
Ronald L. Sass
Raymond O. Wells, Jr.
Associate Professors
Joe Dan Austin
Linda M. McNeil
Clinical Professors
Cheryl L. Craig
Wallace Dominey
Elnora Harcombe
Anne Papakonstantinou
Lecturers
Lissa Heckelman
Roland B. Smith, Jr.
Cylette Willis

Degrees Offered: Secondary Teaching Certificate in conjunction with B.A. in major field, M.A.T.

Students in the teacher education program show a commitment to teaching, a strong record of scholarship in their subject areas, and promise as thoughtful, engaging teachers. Graduates emerge from the program knowledgeable in their particular fields and fully prepared for the teaching profession, trained in children's learning, schools and school policy, and a diversity of teaching styles and methods. The Rice program emphasizes a sound liberal or general education; an 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 and supervising the learning process.

Rice offers three teacher education plans: a secondary teaching certificate in combination with the undergraduate degree in the elected subject field(s), a Master of Arts in Teaching (M.A.T.), and a postbaccalaureate plan for Class III students (page 93) that involves taking those courses and state examinations needed for certification but does not confer a degree. All three plans include intensive study in the teaching field, courses in professional preparation, teaching in the Rice Summer School for Middle and High School Students, and (for postbaccalaureate students in the M.A.T. plan) a paid internship in an accredited secondary school. While maintaining their institutional integrity, the Rice programs comply with state of Texas certification requirements. Students seeking additional information about the teacher education program may wish to acquire a Teacher Education Program Handbook from the department. They are also encouraged to meet with Education Department faculty.

Texas Teaching Credential. Rice is approved by the state of Texas to offer teacher preparation programs in the following fields: art, biology, chemistry, computer science, earth science, economics, English, French, general science, geology/earth science, German, health sciences, history, Latin, life sciences, mathematics, physical education, physical science, physics, political science, psychology, Russian, social studies, sociology, and Spanish.

After satisfactory completion of the Rice program, which includes the state-mandated ExCET examinations, students are recommended for a Texas teaching credential. The Texas Education Agency then awards a Texas Provisional Teaching Certificate (Grades 6–12).

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 teach and create courses under the supervision of experienced master teachers and university faculty in the Rice Summer School for Middle and High School Students.

Internships are undertaken by Master of Arts in Teaching candidates and by undergraduates who begin earning certification in their senior year. Under this plan, students teach one summer session in the Rice University Summer School for Middle and High School Students, as described previously, and then are supervised through their first semester of a full-time, paid teaching practicum in a neighboring, cooperating school system. Permission to do the field-based practicum is contingent upon a successful summer-school teaching experience.

Requirements for Secondary Teaching Certificate with B.A.

Admission. Students may apply to the Rice University Education Department for admission to the teacher education program if they show:

- Attainment of junior standing at Rice 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 Teacher Certification Program form approved by department representatives and the Teacher Education Council before registration for the junior year.

Requirements. Students should check with the education faculty for detailed program requirements and further options that will be available under the revised requirements. These are expected to go into effect for new majors during the 1999–2000 academic year. All courses in their field(s) of specialization (see specific plans below) must have the approval of members of the Rice Teacher Education Council. Each student's plan of study is designed in conjunction with an adviser in the Department of Education and in the student's major department. To complete the teacher education program while earning a bachelor's degree, students must:

- Be exempted from or pass the state's Texas Academic Skills Program (TASP) exam prior to enrolling in any education courses
- Select one of the following plans and complete the required semester hours:
  - Plan I (one teaching field): at least 36 approved hours in subject field with at least 12 hours of upper-level work
  - Plan II (two fields for undergraduates or at least one field for M.A.T. or Class III students): at least 24 approved hours in *each* field, including at least 12 semester hours of upper-level work in *each* field
  - Plan IV (related fields): at least 48 approved hours in composite field (general science or social studies), including at least 18 hours of upper-level work
- Complete 18 hours in professional education courses as follows:
  - EDUC 311 or 511 *Historical and Philosophical Foundations*
  - EDUC 312 or 512 *Psychology of Human Learning*
  - EDUC 409 or 509 *Fundamentals of Secondary Education*
  - 3 hours in the appropriate seminar in teaching
  - 6 hours in student teaching (see following)
- Acquire a broad base of liberal arts courses while fulfilling university distribution requirements (see pages 19–20)
- Satisfy a state requirement for computer literacy
- Ensure they have met all 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
- Pass appropriate ExCET exams

Apprenticeship Plan (Plan A)

Junior Year
EDUC 311 *Historical and Philosophical Foundations*
EDUC 312 *Psychology of Human Learning*
Relevant seminar in teaching
Student teaching in Rice Summer School

Senior Year
EDUC 409 *Fundamentals of Secondary Education*
400-level seminar in teaching
Student teaching in Rice Summer School (after graduation)

Internship Plan (Plan B)

Before Graduation
EDUC 311 *Historical and Philosophical Foundations*
EDUC 312 *Psychology of Human Learning*
EDUC 409 *Fundamentals of Secondary Education*
Appropriate seminar in teaching (3 hours)

After Graduation
Student teaching in Rice Summer School
Student teaching internship during the fall in secondary school
Seminar accompanying the internship

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. Department faculty review each application. See Admission to Graduate Study (page 77). Admitted students must exempt or pass the state's Texas Academic Skills Program (TASP) exam *prior* to enrolling in any education courses.

Degree Requirements. For general university requirements, see Graduate Degrees (pages 72–73). 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 usually fulfill all requirements for a Texas Provisional Teaching Certificate. A limited number of tuition waivers are available. 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 Middle and High School Students, including design and implementation of courses, teaching, and evaluation
- 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 for teacher certification is available to those who hold a B.A. but do not choose to pursue a graduate degree. Interested students should direct their queries to the Office of Graduate Studies, which approves the applicant for admission to Rice. The Department of Education then reviews the application and rules on admission to the teacher education program.

See EDUC (pages 309–312) in the Courses of Instruction section.

Electrical and Computer Engineering

The George R. Brown School of Engineering

Chair
J. Robert Jump

Professors
Behnaam Aazhang
Athanasios C. Antoulas
C. Sidney Burrus
John W. Clark, Jr.
Naomi J. Halas
Don H. Johnson
James Boyd Pearson, Jr.
Thomas Avelyn Rabson
Frank K. Tittel
William L. Wilson, Jr.
James F. Young

Associate Professors
Sarita V. Adve
Richard G. Baraniuk
John K. Bennett
Joseph R. Cavallaro
Peter J. Varman

Assistant Professor
Edward W. Knightly

Faculty Fellows
Elza Erkip
Daniel Mittleman
Aria Nostratinia

Adjunct Professors
Akbil Bidani
Zsort Bor
John H. Byrne
Wayne R. Giles
Thomas Harman
Dirar Khoury
T. Randall Lee
Gerd Marowsky
Arthur Sherwood
Markus Sigrist
Michael C. Smayling
Chiyeko Tsuchitani

Lecturers
Hardy M. Bourland
Joel H. Cyprus
Richard P. Massey
James B. Sinclair
James D. Wise

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

Graduate and undergraduate programs in electrical and computer engineering offer concentrations in areas that include system and 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.

Basic Mathematics and Science Courses

MATH 101 *Single Variable Calculus I*
MATH 102 *Single Variable Calculus II*
MATH 211 *Ordinary Differential Equations and Linear Algebra*
MATH 212 *Multivariable Calculus*
PHYS 101 *Mechanics*
PHYS 102 *Electricity and Magnetism*
CHEM 121 *General Chemistry*
ELEC 331 *Applied Probability*

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*
ELEC 320 I*ntroduction to Computer Organization*
ELEC 326 *Digital Logic Design*
ELEC 391 *Professional Issues in Electrical Engineering*
PHYS 201 *Waves and Optics*

Restricted Electives

Computation

CAAM 210 I*ntroduction 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.

Bioengineering
ELEC 481 *Computational Neuroscience*
ELEC 482 *Physiological Control Systems*
ELEC 483 *Introduction to Biomedical Instrumentation and Measurement Techniques*

Computer Engineering
COMP 212 *Intermediate Programming*
ELEC 322 *Applied Algorithms and Data Structures*
ELEC 421 *Operating Systems and Concurrent Programs*
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*

Systems: Control, Communications, and Signal Processing
ELEC 301 *Introduction to Signals*
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
ELEC 306 *Electromagnetic Fields and Devices*
PHYS 202 *Quantum Mechanics*
ELEC 361 *Electronic Materials and Quantum Devices*
ELEC 462 *Semiconductor Devices*
ELEC 463 *Lasers and Photonics*
ELEC 465 *Physical Electronics Practicum*
ELEC 563 *Introduction to Solid-State Physics*

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 satsify 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 17–19). Students completing the B.S.E.E. program must have a total of at least 134 semster 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 one 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 department 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 17–19). 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 353 *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 72–73). 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 (pages 312–320) in the Courses of Instruction section.

English

The School of Humanities

Chair
Wesley Abram Morris

Professors
Max I. Apple
Jane Chance
Terrence Arthur Doody
Edward Orth Doughtie
Linda P. Driskill
Alan Grob
J. Dennis Huston
Walter Whitfield Isle
Helena Michie
David Minter
Robert L. Patten
William Bowman Piper
Meredith Skura
Edward A. Snow
Susan Wood

Associate Professors
Scott S. Derrick
Lucille P. Fultz
Colleen R. Lamos
Susan Lurie

Assistant Professors
José F. Aranda, Jr.
Betty Joseph

Lecturers
Krista Comer
Jill "Thad" Logan
Marsha Recknagel
Mary L. Tobin

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

The undergraduate program offers opportunities for students to improve their writing skills and explore literature while learning to appreciate it critically. 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 17–19). 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 72–73). As a part of their training, graduate students participate in the research and teaching activities of the department. The eight distribution fields in both programs are medieval literature, Renaissance literature to 1600 (including Shakespeare), 17th- or 18th-century British literature, 19th-century British literature, 20th-century British literature, American literature to 1900, 20th-century American literature, and literary theory.

M.A. Program. The English Department does not have a formal M.A. program but offers the M.A. degree to those Ph.D. students who have gained official admission to candidacy and are in the process of completing their doctorate and to those Ph.D. students who decide to leave the program before completing their doctorate. Students admitted to the Ph.D. program who want to earn the M.A. degree must:

- Satisfactorily complete at least 3 semester hours at the junior or senior level in the literature of a foreign language, not in translation, either at Rice or at another accredited institution (if they have not done so already)
- Satisfactorily complete at least 24 hours of graduate work in English, exclusive of the thesis
- Satisfy distribution requirements by taking at least 1 course in 5 of the 8 distribution fields
- Complete a thesis of approximately 50 pages and defend it in an oral examination (for students already admitted to candidacy for the Ph.D. degree, the requirement of a thesis is waived)

Ph.D. Program. To gain official admission to candidacy, Ph.D. students must satisfy the first 4 of the following requirements, and they must receive approval for their dissertation prospectus from the department's Graduate Studies Committee. To earn a Ph.D. degree in English, candidates must complete the last 2 requirements as well.

- Satisfactorily complete at least 6 semester hours at the junior or senior level in the literature of a foreign language, not in translation, either at Rice or another accredited institution (if they have not done so already)
- Satisfactorily complete at least 48 hours of course work in English, exclusive of the thesis, including a 3-hour pedagogy course
- Satisfy distribution requirements by taking at least 1 course in each of the 8 fields
- Pass a 6-hour written preliminary examination focusing on one of the following (in special cases the exam may be interdisciplinary in focus):
  (1) One of seven traditional literary periods (medieval, Renaissance, British literature 1660–1880, 19th-century British literature, 20th-century British literature, American literature to 1900, or 20th-century American literature)
  (2) A theoretical tradition or topic
  (3) A combination of a traditional literary period (or portion of a period) and a theoretical topic or topics (or a genre)
- Complete a dissertation that demonstrates a capacity for independent work of high quality in traditional scholarship, critical interpretation, or critical theory
- Pass an oral examination on the thesis and related fields of study

Financial Support. Within the limits of available funds, qualified students may receive graduate scholarships or fellowships for up to 4 years. To qualify for this continuing financial aid, students must be approved for candidacy for the Ph.D. by the beginning of their 7th semester at Rice (5th semester for those entering with an M.A.).

See ENGL (pages 321–338) in the Courses of Instruction section.

Environmental Programs

Environmental Programs Steering Committee
Walter Whitfield Isle, *Chair* (English)

Katherine Bennett Ensor *(Statistics)*
Matthew P. Fraser *(Environmental Science and Engineering)*
Paul A. Harcombe *(Ecology and Evolutionary Biology)*
Priscilla Jane Huston *(Provost's Office)*
Gerald P. McKenny *(Religious Studies)*
Donald Ostdiek *(Policy Studies)*
Dale S. Sawyer *(Geology and Geophysics)*
Robin Sickles *(Economics)*
Gordon G. Wittenberg *(Architecture)*

The Environmental Programs Steering Committee coordinates courses and curricula on environmental topics offered in the Schools of Engineering, Natural Sciences, Social Sciences, and Humanities, and serves in a broad advisory capacity to the administration on interdisciplinary research and integrated program development in the environmental area. Students may take one of several environmental tracks as part of a second major. Two tracks are offered in the Department of Environmental Science and Engineering: one in environmental engineering sciences 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 Environmental Science and Engineering (pages 160–164) and for policy studies (pages 211–213). Rice is a partner with Columbia University at Biosphere 2, where Columbia offers a semester's study in environmental science and policy. Interested students should apply through the Steering Committee. Sophomore year would be the optimal time for attending.

Faculty

The following faculty participate in interrelated environmental undergraduate and graduate degree programs, courses, and research programs:

John B. Anderson *(Geology and Geophysics)*
Andrew R. Barron *(Chemistry and Materials Science)*
Philip B. Bedient *(Environmental Science and Engineering)*
James B. Blackburn *(Environmental Science and Engineering)*
Jean-Yves Bottero *(Environmental Science and Engineering/ Geosciences Environment Laboratory, France)*
Janet Braam *(Biochemistry and Cell Biology)*
Vicki L. Colvin *(Chemistry)*
Krista Comer *(English)*
André W. Droxler *(Geology and Geophysics)*
Katherine Bennett Ensor *(Statistics)*
Arthur A. Few *(Space Physics and Astronomy, and Environmental Science)*
Frank M. Fisher *(Ecology and Evolutionary Biology)*
Matthew Fraser *(Environmental Science and Engineering)*
Malcom Gillis *(Economics)*
Paul A. Harcombe *(Ecology and Evolutionary Biology)*
Peter Hartley *(Economics)*
George J. Hirasaki *(Chemical Engineering)*
Joseph B. Hughes *(Environmental Science and Engineering)*
Walter Whitfield Isle *(English)*
Stephen L. Klineberg *(Sociology)*

William P. Leeman *(Geology and Geophysics)*
Roderick J. McIntosh *(Anthropology)*
Gerald P. McKenny *(Religious Studies)*
Peter Mieszkowski *(Economics)*
Kathryn Milun *(Anthropology)*
Donald Ostdiek *(Policy Studies)*
Ronald J. Parry *(Chemistry)*
David C. Queller *(Ecology and Evolutionary Biology)*
Ronald L. Sass *(Ecology and Evolutionary Biology, Chemistry, and Education)*
Dale S. Sawyer *(Geology and Geophysics)*
Joan E. Strassmann *(Ecology and Evolutionary Biology)*
Alan Thornhill *(Ecology and Evolutionary Biology)*
Mason B. Tomson *(Environmental Science and Engineering)*
Calvin H. Ward *(Environmental Science and Engineering)*
Andrew B. Whitford *(Political Science)*
Mark R. Wiesner *(Environmental Science and Engineering)*
Gordon G. Wittenberg *(Architecture)*

Environmental Science and Engineering

The George R. Brown School of Engineering

Chair
Philip B. Bedient

Professors
Arthur A. Few, Jr.
Mason B. Tomson
Calvin H. Ward
Mark R. Wiesner
Assistant Professor
Matthew P. Fraser
Associate Professor
Joseph B. Hughes

Adjunct Professors
James B. Blackburn
Jean-Yves Bottero
Carroll Oubre
John T. Wilson
Adjunct Associate Professor
Stanley Pier
Adjunct Assistant Professors
Charles J. Newell
Hanadi S. Rifai
Lecturer
Maged M. Hamed

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

This interdisciplinary undergraduate major, offered in joint programs with such majors as civil or chemical engineering, gives students academic training in solving technical environmental problems. The department provides an introduction to environmental engineering in topics that include hydrology, water and wastewater treatment, water quality modeling, environmental microbiology, and water chemistry. Graduate programs include both professional degrees and research degrees. 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 Environmental Science and Engineering (as a double major)

The Department of Environmental Science and Engineering offers a dependent double major (B.A.) in environmental science and engineering. The double major has two tracks, one in environmental engineering sciences (EES), and one in environmental sciences (ES). Faculty from the Weiss School of Natural Science work with ES&E 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. Also, students wishing to obtain an ABET-accredited degree in engineering should pursue the EES track in conjunction with one of the environmental options offered through the Departments of Civil or Chemical Engineering. Students choosing the ES track are encouraged to select one of the following participating faculty members from the Weiss School of Natural Science as their adviser:

John Anderson *(Geology and Geophysics)*
Andre Droxler *(Geology and Geophysics)*
Arthur Few *(Space Physics and Environmental Science)*
F. M. Fisher *(Ecology and Evolutionary Biology)*
P. A. Harcombe *(Ecology and Evolutionary Biology)*
William Leeman *(Geology and Geophysics)*
D. Queller *(Ecology and Evolutionary Biology)*
R. L. Sass *(Ecology and Evolutionary Biology)*
Dale Sawyer *(Geology and Geophysics)*
J. E. Strassmann *(Ecology and Evolutionary Biology)*
Virginia B. Sisson *(Geology and Geophysics)*
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 five 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
CHEM 121 or 151 *General Chemistry with Laboratory*
CHEM 122 or 152 *General Chemistry with Laboratory*
MATH 101 *Single Variable Calculus I*
MATH 102 *Single Variable Calculus II*
PHYS 101 or 125 or 111 *Mechanics*
PHYS 102 or 126 or 112 *Electricity and Magnetism*
BIOS 201 *Introductory Biology*
BIOS 202 *Introductory Biology*
(Environmental sciences track only)

One of the following two courses:
NSCI 230 *Computation in Natural Science*
(Environmental sciences track only)
MATH 211 *Ordinary Differential Equations and Linear Algebra*
(Environmental engineering sciences track only)

Core Courses: Environmental Sciences Track

BIOS 325 *Ecology*
GEOL 326 *Environmental Geology*
SPAC 443 *Atmospheric Science*
(or ENVI 411 *Air Resource Management)*

Two of the following three 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

ENVI 401 *Introduction to Environmental Chemistry*
ENVI 403 *Principles of Environmental Engineering*
ENVI 411 *Air Resource Management*
ENVI 412 *Hydrology and Watershed Analysis*
ENVI 434 *Chemical Transport and Fate in the Environment*

Sample Curriculum in the Environmental Engineering Sciences Track

Freshman Year

Fall
MATH 101 *Single Variable Calculus I*
PHYS 101 *Mechanics*
CHEM 121 *General Chemistry with Laboratory*
Electives
HPER 101

Spring
MATH 102 *Single Variable Calculus II*
PHYS 102 *Electricity and Magnetism*
CHEM 122 *General Chemistry with Laboratory*
Electives
HPER 102

Sophomore Year

Fall
MATH 211 *Ordinary Differential Equations*
BIOS 201 *Introductory Biology*
Environmental Elective*
Environmental Elective

Spring
Environmental Elective
Environmental Elective
* ENVI 201 *Introduction to Environmental Systems* recommended as environmental elective.

Junior Year

Fall
ENVI 401 *Introduction to Environmental Chemistry*
Environmental Elective
Environmental Elective

Spring
ENVI 411 *Air Resource Management*

Senior Year

Fall
ENVI 403 *Principles of Environmental Engineering*
ENVI 434 *Chemical Transport and Fate in the Environment*
Environmental Elective

Spring
ENVI 412 *Hydrology and Watershed Analysis*
Environmental Elective

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.

Sample Curriculum in the Environmental Sciences Track

Freshman Year

Fall
MATH 101 *Single Variable Calculus I*
PHYS 101 *Mechanics*
CHEM 121 *General Chemistry with Laboratory*
Electives
HPER 101

Spring
MATH 102 *Single Variable Calculus II*
PHYS 102 *Electricity and Magnetism*
CHEM 122 *General Chemistry with Laboratory*
Electives
HPER 102

Sophomore Year

Fall
NSCI 230 *Computation in the Natural Sciences*
BIOS 201 *Introductory Biology*
Environmental Elective
Environmental Elective

Spring
BIOS 202 *Introductory Biology*
Environmental Elective
Environmental Elective

Junior Year

Fall
BIOS 325 *Ecology*
GEOL 326 *Environmental Geology*
Environmental Elective

Spring
SPAC 443 *Atmospheric Science*
or ENVI 411 *Air Resource Management*
Environmental Elective

Senior Year

Fall
GEOL 451 *Analysis of Environmental Data* or ENVI 401 *Introduction to Environmental Chemistry*
Environmental Elective
Environmental Elective

Spring
ENVI 412 *Hydrology and Watershed Analysis*

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.E.E., M.E.S., M.S., and Ph.D. in Environmental Science and Engineering

Applicants for graduate study in environmental science and engineering should 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 72–73) and Admission to Graduate Study (page 77).

M.E.E. Program. The Master of Environmental Engineering (M.E.E.) is a professional nonthesis degree requiring one year 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 and wastewater treatment design and operation, and numerical modeling. 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 one year 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 environmental biology, environmental chemistry and toxicology, surface and groundwater hydrology, water and wastewater treatment, environmental geology, and environmental planning. 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. Most graduate students in environmental science and engineering pursue a thesis program culminating in the M.S. degree. Candidates must:

- Complete at least 8 approved courses, including 1 course each in environmental chemistry, water and wastewater treatment, hydrology, and environmental modeling (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.

Ph.D. Program. 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 research
- Pass a formal public oral examination on the thesis and related topics

Ph.D. candidates typically take the preliminary exam, administered by department faculty, after one to 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 ENVI (pages 338–340) in the Courses of Instruction section.

French Studies

The School of Humanities

Chair
Bernard Aresu

Professors
Madeleine Alcover
Jean-Joseph Goux
Lynne Huffer
Deborah Hubbard Nelson
Daniel J. Sherman

Associate Professors
Deborah A. Harter
Philip R. Wood

Assistant Professor
Michel Achard

Lecturers
Anna B. Caflisch
Evelyne Datta

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 offers, as staffing permits, a six-week summer travel/study program in Dijon, France. 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 17–19). 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.

Students who matriculated at Rice University before August 1997 are required to take FREN 304, either 311 or 312, and either 371 or 372 unless exempted by their major adviser. These students also have the option of choosing to fulfill the new requirements below. Students who matriculate August 1997 or later must fulfill the following requirements:

Required Courses

FREN 301 *Advanced French for Written and Oral Communications*
FREN 311 *Introduction to French Literature I*
(or FREN 312 *Introduction to French Literature II)*
FREN 371 *Old Regime and Revolutionary France*
(or FREN 372 *The Making of Modern France, 1815–1995)*

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)

In choosing their additional courses, majors must take at least one course each from the period before 1800 and the one after 1800, selected from the following:

Period before 1800
FREN 311 *Introduction to French Literature I*
FREN 351 *The Provinces of France*
FREN 371 *Old Regime and Revolutionary France*
FREN 410 *The Literary and Historical Image of the Medieval Woman*
FREN 415 *Courtly Love in Medieval France*
FREN 430 *French Classicism*
FREN 440 *French Enlightenment*
FREN 445 *Enlightenment and Counter-Enlightenment*

Period after 1800
FREN 312 *Introduction to French Literature II*
FREN 321 *Paris*
FREN 360 *Society and the Sexes in Modern France*
FREN 372 *The Making of Modern France, 1815–1995*
FREN 387 *Images of Contemporary France*
Plus other courses at the 400 level

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, 371 or 372) 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 Baker 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 two or more advanced French courses 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 $2,250 each year to a qualified sophomore or junior for six weeks' study in France. The Clyde Ferguson Bull Traveling Fellowship, awarded each year to at least 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 72–73).

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 with satisfactory standing 24 semester hours (in addition to B.A. course work) of upper-level courses, plus 6 hours of thesis work
- 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
- Complete a thesis on a subject approved by their graduate committee
- Successfully defend the thesis in a final oral examination

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 54 semester hours of course work plus 36 thesis hours (for those already holding an M.A. degree, the requirement is 27 hours of course work plus 36 thesis hours)
- In addition, complete FREN 610 *Topics in Language Methodology*, a course required for all graduate language teaching assistants
- 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
- Perform satisfactorily on preliminary written and oral examinations (the oral exam taken only after successful completion of the written exam) on 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 $3,500 for tuition and books is awarded to eligible undergraduates toward tuition and books.

See FREN (pages 341–351) and ITAL (page 405–406) in the Courses of Instruction section.

Geology and Geophysics

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
Peter R. Vail

Associate Professors
André W. Droxler
Andreas Luttge
James E. Wright

Assistant Professors
Adrian Lenardic
Julia Morgan
Colin A. Zelt

Adjunct Professors
K. K. Bissada
Carlos A. Cramez
R. A. Donelick
Jeffrey J. Dravis
Robert B. Dunbar
M. Turhan Taner
John C. Van Wagoner
James L. Wilson

Adjunct Associate Professors
Gianni Matteucci
James Pindell
W. C. Rusty Riese

Adjunct Assistant Professors
Andrew L. Kurkjian
Paul D. Spudis
Gabor Tari

Degrees Offered: B.A., 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 computer techniques and work in the department's seismic processing center. A second major can lay the foundation for a career in environmental geology, and students may also acquire certification in earth science as a teaching field.

Advanced graduate work is available in marine geology and oceanography, stratigraphy, carbonate and siliciclastic sedimentology, igneous and metamorphic petrology, geochemistry, structural geology, regional tectonics, reflection and crustal seismology, and geodynamics. Ideally, programs of study and research incorporate more than one of these specialties.

Degree Requirements for B.A. in Geology

For general university requirements, see Graduation Requirements (pages 17–19). Students completing the B.A. program should have a total of at least 129 hours at graduation. Students majoring in geology must complete the following:

Geology
GEOL 101 *The Earth*
(or GEOL 102 *Evolution of the Earth*
or GEOL 107 *Oceans and Global Change*
or GEOL 108 *Crises of the Earth)*
GEOL 105 *Introductory Lab for Geological Sciences*
GEOL 311 *Mineralogy and Optics*
GEOL 312 *Petrology*
GEOL 331 *Structural Geology*
GEOL 332 *Sedimentology*
GEOL 334 *Geological and Geophysical Techniques*
GEOL 390 *Field Geology*
GEOL 442 *Exploration Geophysics*
(or GEOL 446 *Solid Earth Geophysics)*

Math and Other Sciences
MATH 101 and 102 *Single Variable Calculus I* and *II*
MATH 211 *Ordinary Differential Equations and Linear Algebra*
CHEM 121 and 122 *General Chemistry with Laboratory*
(or CHEM 151 and 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:

GEOL 353 *Environmental Geochemistry*
GEOL 326/426 *Environmental Geology*
GEOL 451 *Analysis of Environmental Data*
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.A. in Geophysics

For general university requirements, see Graduation Requirements (pages 17–19). Students completing the B.A. program should have a total of at least 129 hours at graduation. Students majoring in geophysics must complete the following:

Geology
GEOL 101 *The Earth*
(or GEOL 102 *Evolution of the Earth*
or GEOL 107 *Oceans and Global Change*
or GEOL 108 *Crises of the Earth*)
GEOL 105 *Introductory Lab for Geological Sciences*
GEOL 311 *Mineralogy and Optics*
(or GEOL 332 *Sedimentology*)
GEOL 331 *Structural Geology*
GEOL 334 *Geological and Geophysical Techniques*
GEOL 390 *Field Geology*
GEOL 461 *Seismology I*
GEOL 442 *Exploration Geophysics*
GEOL 444 *Reflection Seismic Data Processing Lab*
GEOL 446 *Solid Earth Geophysics*
(or GEOL 441 *Geophysical Data Analysis*
or GEOL 462 *Tectonophysics*
or GEOL 464 *Global Tectonics)*

Math and Other Sciences

MATH 101 and 102 *Single Variable Calculus I* and *II*
MATH 211 *Ordinary Differential Equations and Linear Algebra*
MATH 212 *Multivariable Calculus*
CHEM 121 and 122 *General Chemistry with Laboratory*
(or CHEM 151 and 152 *Honors Chemistry with Laboratory)*
PHYS 101 or 111 *Mechanics*
PHYS 102 or 112 *Electricity and Magnetism*
PHYS 201 *Waves and Optics*
PHYS 231 *Elementary Physics Lab II*
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)*

Undergraduate Independent Research

The department encourages, but does not require, both geology and geophysics undergraduate majors to pursue independent supervised research in GEOL 481–482 *Senior Research in Geology or Geophysics* or GEOL 491–492 *Special Studies.* See also Honors Programs (page 34).

Degree Requirements for M.A. and Ph.D. in Geology and Geophysics

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 sciences. The department encourages applications from well-qualified students with degrees in the other sciences and mathematics.

For general university requirements, see Graduate Degrees (pages 71–72). The requirements for the M.A. and Ph.D. in geology and geophysics 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 approved by the department Graduate Committee, following the *Guidelines for Advanced Degrees in the Department of Geology and Geophysics* 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
- Maintain a grade point average of 3.00 (B) or better
- Prepare a thesis proposal during their second semester (no later than their third)
- Pass an oral qualifying exam based on the proposal before beginning research
- 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.

Financial Assistance. Teaching assistantships and research assistantships (which do not obligate a student to specific research projects) are available for the first year of study, during which students select an adviser and a research project. In the second and subsequent years, students normally receive, from external funds, a stipend and tuition for specific research.

See GEOL (pages 352–357) in the Courses of Instruction section.

German and Slavic Studies

The School of Humanities

Chair
Klaus H. M. Weissenberger

Professors
James E. Copeland
Margret Eifler
Maria-Regina Kecht
Ewa M. Thompson
Michael Winkler
Assistant Professor
Robert S. Bledsoe

Lecturers
Waclaw Mucha
Richard Spuler
Professor Emeritus
Joseph B. Wilson
Adjunct Professor
Earl D. Mitchell
Visiting Lecturers
Krzysztof Koehler

Degrees Offered: B.A.

The major in German studies offers maximum exposure to interdisciplinary studies in German. Courses situate German culture within the broad context of European history, covering not only the traditional fields of language and literature but also those of gender, film, and cultural theory. The degree work prepares students for careers in such fields as academia, communications, diplomacy, and international law and economics. Also offered are courses in German cultural studies (GMAN), which are taught in English.

In the B.A. degree program in Slavic studies, students acquire a proficiency in Russian and Eastern European language, culture, and literature. A three-year study plan is also available within this department in the Russian language. A variety of Russian literature courses are taught in English, including monograph courses on Tolstoy and Dostoevsky.

Degree Requirements for B.A. in German Studies

For general university requirements, see Graduation Requirements (pages 17–19). Students majoring in German studies must complete at least 30 semester hours in upper-level courses (at the 300 or 400 level); a double major must complete 24 hours in upper-level courses. Majors may take two courses related to the subject of German studies outside the department in other fields of study such as art, music, linguistics, history, philosophy, and political science.

The department encourages all majors to meet with faculty and graduates at a weekly German Table for lunch in one of the colleges. Majors are also urged to spend time living and studying in Germany by applying for the Dr. and Mrs. Earl Douglas Mitchell Fellowship, a fund established for study abroad. Information on other programs of study in Germany is available from members of the German studies faculty and from the Office of Academic Advising.

Honors. Outstanding students are presented annually with the Max Freund Prize and the Goethe Institut Book Prize. The department also offers an honors program for majors excelling in their studies (see Honors Programs on page 34). Honors work consists of readings and research leading to a substantial honors essay under the supervision of a department faculty member; students should consider the work as a special interest study to enhance preparation and application for graduate school.

Degree Requirements for B.A. in Slavic Studies

For general university requirements, see Graduation Requirements (pages 17–19). Single majors in Slavic studies must complete 24 semester hours (8 departmental courses) above the 300 level. Double majors must complete 18 hours (6 courses) above the 300 level. At least one of these courses must cover the entire Slavic area (e.g., SLAV/RUSS 320 *Slavic Cultures,* SLAV/RUSS 411 *Contemporary Russia,* or SLAV/RUSS 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 adviser.

Fellowships in varying amounts are available for Slavic studies from the Dr. and Mrs. Earl Douglas Mitchell Fellowship Fund.

See GERM (pages 357–363), GMAN (pages 363–365), PLSH (page 463), RUSS (pages 489–492), SLAV (pages 492–493), and SWED (page 511), in the Courses of Instruction section.

Hispanic and Classical Studies

The School of Humanities

Chair
Robert Lane Kauffmann

Professors
James A. Castañeda
Harvey E. Yunis
Associate Professors
Hilary S. Mackie
J. Bernardo Pérez
Joan Rea
Hector N. Urrutibéheity
Maarten van Delden
Kristine Gilmartin Wallace
Assistant Professor
Rafael M. Mérida-Jiménez
Lecturer
Pilar Llusa

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 the section on the classics major (page 130). Undergraduate majors in Hispanic studies select one of four options: literature, language and linguistics, translation, or Latin American studies. Qualified upper-class students may also undertake independent work. To provide students with the opportunity to live and study in a Spanish-speaking environment, the department offers the fall semester in Chile.

Degree Requirements for B.A. in Hispanic Studies

For general university requirements, see Graduation Requirements (pages 17–19). Requirements for the Hispanic studies major differ according to the option selected. For the B.A., students must complete the following:

Literature option—30 semester hours (10 courses) in Spanish at the 300 level or higher

Language and linguistics option—at least 27 hours (9 courses) in Spanish language and Spanish linguistics at the 300 level or higher; and 1 course in linguistics (e.g., LING 200 *Introduction to the Scientific Study of Language,* LING 300 *Linguistic Analysis,* or LING 305 *Historical Linguistics)*; prerequisite: semester of college Latin or equivalent

Translation option—Open to students who have passed the qualifying examination offered during the first week of each semester. At least 27 hours (9 courses) in Spanish at the 300 level or higher; 1 course in linguistics (LING 394, *Structure of the English Language*).

Latin American studies option—at least 30 hours (10 courses) in Spanish at the 300 level or higher; prerequisite: intermediate level of proficiency in Portuguese

Students should read the *Options for Spanish Majors* (available in departmental office) and consult with departmental adviser regarding specific course requirements and the 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.

Fall Semester in Chile. The department offers a fall semester in Chile in conjunction with the University of Chile in Santiago. Rice students in good standing are eligible for this program, which gives them access to a variety of courses at the University of Chile. Since its inception in 1989, the program has attracted students from universities all over the U.S. Brochures and application materials are available in the department office. Internships available.

Degree Requirements for M.A. in Hispanic Studies

For general university requirements, see Graduate Degrees (pages 72–73). 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, which 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 one semester of college Latin (or equivalent)
- Take SPAN 610 *Topics in Language Methodology*
- Complete an acceptable thesis
- Perform satisfactorily on a final oral examination on the thesis

See PORT (page 472) and SPAN (pages 501–507) in the Courses of Instruction section.

History

The School of Humanities

Chair
Gale Stokes

Professors
John B. Boles
Judith Brown
Ira D. Gruber
Thomas L. Haskell
Allen J. Matusow
Atieno Odhiambo
Patricia Seed
Daniel Sherman
Richard J. Smith
Albert Van Helden
Martin J. Wiener
Richard Wolin

Professors Emeritus
Katherine Fischer Drew
Harold Hyman
R. John Rath

Associate Professors
Peter C. Caldwell
Edward L. Cox
Michael Maas
David Nirenberg
Carol E. Quillen
Paula A. Sanders
Joel W. Wolfe
John H. Zammito

Assistant Professors
Jane Dailey
Eva Haverkamp
Ussama Makdisi
Sarah Thal

Lecturer
Thomas J. Hochstettler

Research Scholar
Alexander X. Byrd

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. 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 are also vital to historical studies. The graduate program, which trains a limited number of carefully selected students, offers studies in a number of areas, with faculty interests ranging from ancient and medieval history to modern British, French, German, and Balkan history, from areas in American history that include Colonial America, the Old and New South, the Civil War, legal/constitutional and intellectual history to world military history, and from the history of science to East Asian, Latin American, and Middle Eastern history.

Degree Requirements for B.A. in History

For general university requirements, see Graduation Requirements (pages 17–19). 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 two of the required upper-level courses from a departmental list of seminars devoted mainly to writing and discussion. Students are bound to the requirements in effect at the time they declare the major. Departmental distribution requirements are as follows (although 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 one 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 Education.

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

Students who have a B.A. degree (or its equivalent) from an acceptable institution are eligible to apply to the graduate program in history. The M.A. and Ph.D. degrees are offered in limited areas of American, European, and other history. Further information is available on request from the department. For general university requirements, see Graduate Degrees (pages 72–73).

The department awards graduate tuition waivers and fellowship stipends, within the limits of available funds, to qualified students with demonstrated ability. As a part of their training, graduate students are expected to provide limited services to the university as tutorial instructors, research assistants, or editorial assistants for the *Journal of Southern History* or *The Papers of Jefferson Davis*, both sponsored by the university.

M.A. Program. 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; 2) completion of two years of course work (48 credit hours), normally including at least 8 seminars (32 semester hours), and at least two 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.

Ph.D. students do not need to complete a specific number of semester hours, but they must remain full-time students from their entry into the program until they pass their qualifying examination. Passing the qualifying exam allows the student to apply for formal admission to candidacy for the Ph.D. degree.

For the Ph.D., candidates must:

- Complete enough course work, including directed and independent reading, to prepare them thoroughly in one of their three fields, working with an adviser who has expertise in that field
- Take eight graduate seminars, including methods courses
- 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 qualifying examinations. For students entering with a B. A., those examinations should 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 department approval.
- Complete a dissertation presenting the results of original research within three years after passing the qualifying examination (unless an extension is granted by the Graduate Committee)
- Defend the thesis in a public oral examination

See HIST (pages 374–398) in the Courses of Instruction section.

Human Performance and Health Sciences

The School of Humanities

Chair
James G. Disch

Associate Chair
Eva J. Lee
Professor Emeritus
Hally B. W. Poindexter
Professors
Frank W. Bearden
Nicholas K. Iammarino
Dale W. Spence
Associate Professor
Bruce R. Etnyre
Adjunct Professors

William J. Bryan
Herbert L. Fred
William L. Risser
Ray H. Skaggs
Armin D. Weinberg

Lecturers
Felicia Cavallini
Harmon Gallant
Brian Gibson
Daniel McMasters
Part-Time Lecturers
Roberta Anding
Cassius B. Bordelon, Jr.
Raymond Davidson
Allen W. Eggert
Mauro Hamza
Christine A. Lidvall
Linda G. Phenix
Kim Pyung-Soo
Nguyen Thanh
Rebecca Valls
Kristy Vandenberg
Joyce Yost

Degree Offered: B.A.

A minimum of 120 semester hours is required for a Bachelor of Arts degree in human performance and health sciences. All degrees within the department require a designated track concentration. The department was one of the first academic programs of its kind in the nation to institute a "track" structure, which allows students to concentrate their efforts on a more specific sub-discipline. Detailed requirements of each track can be obtained on the departmental webpage <http://www.ruf.rice.edu/~hphs/>. Tracks include exercise science, sports management, sports medicine, and health sciences.

Senior Honors Program. The Department of Human Performance and Health Sciences has recently instituted a Senior Honors Program. One of the purposes of the program is to foster the development of professional writing skills and verbal presentation skills. Participation and successful completion will result in enhanced computer skills as well as research and discursive presentation skills. Students who qualify will be strongly encouraged to enroll.

Degree Requirements for the B.A. Degree in Human Performance and Health Sciences

Exercise Science
Dr. Brian Gibson, Coordinator

Students wishing to major in the exercise science track of the department are typically those who intend to continue their education at the **graduate level** or plan on attending **medical school** or other professional schools such as **physical therapy**, **occupational therapy**, and **nursing**. Graduates may also be employed as exercise

physiologists in medical and corporate settings, including both preventative and rehabilitative programs. These graduates generally obtain certification for exercise testing, physical fitness evaluation, or exercise prescription through the American College of Sports Medicine <http://www.a1.com/sportsmed/>.

Students receive a solid foundation in chemistry, biochemistry, biology, anatomy, and physiology via required courses in the department as well as 15 elective hours in a wide variety of natural science–based offerings. Upper-level courses focus on physiological adaptations that occur with exercise and preventative medicine. During advising sessions, students are encouraged to select from these electives according to their respective career goals. They are also encouraged to participate in experimental research with faculty members to further enhance their graduate school preparation. Students in the Exercise Science 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 Exercise Science Track who do not enroll in the **Senior Honors Program** will be encouraged to participate in an Independent Study. This Independent Study is under the supervision of the director of the Exercise Science Track. The application (proposal) process for Independent Studies is outlined in the web page listed below. Finally, few extremely qualified students are encouraged to apply for any one of a variety of highly competitive internships.

For more information, go to the exercise science web site at <http://www.ruf.rice.edu/~hphs/bgibson_index.html>.

Sport Management

Dr. Harmon Gallant, Coordinator

Sport management is an interdisciplinary field of fairly recent development. It first appeared in the early to mid-1980s under a variety of designations in the curricula of American universities. Rice University became a pioneer institution in the integration of this field into the traditional academic area known as "physical education" by making sport management one of the original tracks when the department was reorganized into its present configuration.

As a distinct body of knowledge and field of study, sport management draws from a variety of the academic disciplines: economics, sociology, political science, psychology, law, and managerial studies. Ethical principles affecting the administration of sport organizations are considered. Each discipline can be applied to the business enterprise of amateur or professional sport; by studying the various disciplines, students are educated in the management techniques necessary to assume responsible roles in professional and amateur sport. Career preparation for both public and private sector organizations is a goal of sport management education at Rice.

The North American Society for Sport Management (NASSM) is the leading academic association in this field. In an effort to set and maintain scholarship and teaching standards, it has issued the following definition of sport management: "the theoretical and applied aspects of management theory and practice specifically related to sport, exercise, dance, and play as these enterprises are pursued by all sectors of the population."

Students in the sport management track acquire a solid grounding in the organizational, psychological, and legal aspects of the sports industry. They examine in some detail specific topics such as marketing, finance, and labor relations. Graduates of this track are prepared to accept employment in sport management positions or enter graduate-level studies in business, law, or sport management.

Sports Medicine

Dr. Dale Spence, Coordinator

The department's sports medicine track is an outgrowth of a burgeoning interest in sports medicine. The outcome of concentration in the sports medicine track is evident in

the professional careers that graduates have pursued. Most students choose one of three professional directions after graduation: medicine, physical therapy, or athletic training. Some graduates continue with postgraduate study in areas related to human performance and health sciences, including graduate study in sports medicine.

The sports medicine track is a specialized course of study for students majoring in human performance and health sciences. Although it has several common courses with other tracks within the major curriculum, the sports medicine track includes two specialized courses, one laboratory in sports medicine and athletic training, and either an internship or independent study specifically related to sports medicine. The internship or independent study provides students an opportunity to experience the application of sports medicine concepts and practice in a health-care setting or to participate in clinical research. The specific didactic and seminar courses related to sports medicine are limited mostly to athletic injury, including mechanism, assessment, management, and rehabilitation of injury. The laboratory in training room procedures practices the techniques of managing athletic injuries within a rehabilitation setting. The material in these courses and laboratory includes applications of anatomy, biomechanics, physiology, and athletic medicine.

Health Sciences

Dr. Nicholas K. Iammarino, Coordinator

The purpose and goal of the health sciences 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 medicine, dentistry, etc.

The successful completion of the health sciences 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 (1 of which is an HPHS core course that is consistent across all four tracks) and 1 academic lab (*First Aid/CPR*) for a total of 19 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 two courses that provide both an introduction to statistics and measurement (*Measurement and Evaluation*), and the competencies in the operation of networked and personal computers (*Introduction to Computing*).

All students in the health sciences track must also complete 4 activity courses in the Basic Instruction Program. HPER 103 and 104 carry 1 semester hour of credit each while HPER 101 and 102 are zero-credit courses and required of all Rice undergraduate students.

The remaining 21 semester hours are drawn from elective courses that are both within the HPHS department (8 HEAL and 2 HPER courses) and, at present, 13 courses from other academic departments. In keeping with the university's interdisciplinary approach to undergraduate education, students choose health-related courses within the natural sciences, social sciences, and humanities divisions.

See HEAL (pages 371–373) and HPER (pages 399–401) in Courses of Instruction.

Linguistics

The School of Humanities

Chair
James E. Copeland

Professors
Philip W. Davis
Stephen A. Tyler
Professor Emeritus
Sydney M. Lamb
Adjunct Professor
Charles F. Hockett
Associate Professors
Spike Gildea
Maria-Regina Kecht
Suzanne E. Kemmer
Hector Urrutibéheity
Assistant Professors
Michel Achard
Michael Barlow
Nancy Niedzielski
Nanxiu Qian
Lecturer
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 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, 301, one of LING 402 or 416, and one of LING 305 or 315. No more than one independent study course may be counted toward the major requirement. In addition, competency in one language other than English is required. This requirement may be satisfied by two 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 are also urged to apply for admission to the honors program in 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 two 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 the following: LING 306, 315, 317, 411, 412; 2 courses from cognitively related disciplines (psychology, computer science, anthropology, philosophy) as approved by the major adviser; and two 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 205, 313, or 406. Finally, 2 courses in socio-cultural studies outside the department are required, and must be approved by the major adviser. Examples of appropriate courses are ANTH 353, PSYC 202, SOCI 353, RELI 393, 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 205, 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 205, 309, 313, 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 Degree Requirements and Majors.

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 non-native speakers in the U.S. or abroad. The Certificate in 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 linguistics, education, English, or other major. 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 one of the following: LING 309, 313, or 205. The practical component consists of a total of 20 contact hours of language teaching/tutoring experience. This requirement may be filled 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. Three areas of

particular research strength in the department are: field studies of particular languages (e.g., languages of North and South America, including the Comparative Cariban Project; Austronesia; Africa; Europe; and East Asia); language and mind (cognitive linguistics, neurolinguistics, schema-based theories, lexical semantics); and language change (diachronic typology, grammaticalization theory, semantic change, language classification, Indo-European linguistics). Additional research areas represented are second language acquisition, applied linguistics, discourse analysis, and corpus 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 <http://www.ruf.rice.edu/~ling> 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 one 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 two papers will represent different areas of the field, and at least one will 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 two research languages other than English. It is also expected that students 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 (pages 408–415), and SANS (page 492), in the Courses of Instruction section.

Management and Accounting

The Jesse H. Jones Graduate School of Management

Dean
Gilbert R. Whitaker, Jr.

Professors
John B. Bryant
Bala G. Dharan
Robert Dipboye
Linda P. Driskill
George Kanatas
H. Albert Napier
Ronald N. Taylor
Wilfred C. Uecker
Robert A. Westbrook
Edward E. Williams
Duane Windsor
Stephen A. Zeff

Associate Professors
Richard R. Batsell
Steven C. Currall
Jeff Fleming
David L. Ikenberry
Douglas A. Schuler

Assistant Professors
Michele J. Daley
Gustavo Grullon
Michael B. Heeley
Neelam Jain
Quintus R. Jett
Lisa R. Klein
Trichy V. Krishnan
Piyush Kumar
E. Geoffrey Love
Sharon F. Matusik
Barbara Ostdiek
Sundaresh Ramnath
Karen Elizabeth Schnietz
Sanjay Sood
Fu-Kuo Albert Wang

Instructor
Deborah J. Barrett

Visiting Professors
Amir Barnea
Marc J. Epstein
Steven J. Wallach
Harry E. Wilkinson

Adjunct Professors
Paul S. Allen
Khleber Attwell
Stephen J. Banks
Jerry E. Finger
Arthur Garson, Jr.
Jack M. Gill
Terry Hemeyer
Edward D. McDonald
Robert B. Parke, Jr.
David Ross III
Joan E. Shook

Adjunct Associate Professors
Robert N. Flatt
John K. Hannan
Barry E. Silverman
Donald L. Williams

Lecturers
W. Clifford Atherton
David M. Austgen
John A. Baker
Lovett Baker
Donald D. Clayton
Lawrence Hampton
Brad Jackson
Patricia R. Lawrence
Pilar Llusa
Nicholas G. Malavis
James P. Mandel
Jerlyn Leigh Mardis
Robert McAshan
Dennis E. Murphree
Elizabeth C. O'Sullivan
Leslie Rohrer
Steven Russo
James R. Sowers
V. Richard Viebig, Jr.
Stuart Wagner
Alan D. Westheimer

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, health-care 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 four 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 health-care firms, and pharmaceutical and medical supply and equipment companies.

Although no undergraduate major is offered, undergraduate accounting courses are available.

Admissions Requirements for Jones Graduate School

For general information, see Admission to Graduate Study (page 77). 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 is 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 ten 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 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 the 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 two 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, Exemptions, and Transfers of Credit. At its sole discretion, the school may waive or credit required courses in exceptional cases where students already have the equivalent preparation. 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. Those seeking exemptions must submit a written petition to the school's M.B.A. program director, who advises the associate dean for faculty affairs.

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 two electives. During the last five weeks of 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 one 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, health-care 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 55 credits, including Action Learning Labs. The program is a lock-step progression in which all students take required courses in an identical sequence, except for the four 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 health-care 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 health-care services research programs or externships. Students receive their M.B.A. degree from Rice after they have completed 45 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 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 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 up the hours.

Students may retake a failed course only once and then only if their cumulative grade point average is 3.00 or higher, or 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 until 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.)

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.

Resolution of Disagreements

By university policy, a final grade for a course submitted to the Registrar's Office may be changed only if the instructor made a clerical error in calculating that grade.

In the event of a significant disagreement not involving grades between a student and an instructor, the following grievance process is used. First, the student should try to resolve the disagreement with the instructor. After that, either party may bring the matter to the M.B.A. program director, who will attempt mediation. Either party may then appeal to the dean through the Academic Standards Committee.

The grievance process is conducted according to a formal written policy approved by the school faculty and should be reserved for serious complaints of individual mistreatment; frivolous complaints will be dismissed.

See ACCO (pages 235) and MGMT (pages 425–438) in the Courses of Instruction.

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. Managerial studies is an 11-course major requiring a second major. 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 17–19). 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*
(or PSYC 339 *Statistical Methods—Psychology)*

1 course from the following:
ECON 436 *Regulation*
ECON 438 *Economics of the Law I*
POLI 335 *Political Environment of Business*
POLI 362 *European Integration*

1 course from the following:
ACCO 406 *Management Accounting*
ACCO 411 *Accounting Issues*
(or ACCO 409 *Financial Reporting and Analysis)*
ECON 370 *Microeconomic Theory*
(or ECON 372 *Mathematical Microeconomics)*

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, Dr. Ronald Soligo, in 268 Baker Hall.

See MANA (page 415) in the Courses of Instruction section.

Mathematics

The Wiess School of Natural Sciences

Chair
Frank Jones

Professors
Michael Boshernitzan
Tim D. Cochran
Robin Forman
Robert M. Hardt
F. Reese Harvey
John Hempel
John C. Polking
Stephen W. Semmes
Richard A. Stong
William A. Veech
Raymond O. Wells, Jr.
Michael Wolf

Associate Professor
Zhiyong Gao

Instructors
Stanley Chang
Diane Hoffoss
Joseph Masters
David S. Metzler
Scott D. Pauls
Jennifer Slimowitz

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, elementary number theory, and projective geometry to a broad variety of sophisticated mathematics. These include real and complex analysis, differential geometry, abstract algebra, algebraic and geometric topology, 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, geometric topology, and algebraic topology.

Degree Requirements for B.A. in Mathematics

For general university requirements, see Graduation Requirements (pages 17–19). 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 72–73).

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 one 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 both qualifying examinations (see below)
- Perform satisfactorily on examinations in two approved foreign languages (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 three exams, one 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 three 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 (pages 416–419) in the Courses of Instruction section.

Mechanical Engineering and Materials Science

The George R. Brown School of Engineering

Chair
T. E. Tezduyar

Professors
John E. Akin
Andrew R. Barron
Yildiz Bayazitoglu
Michael M. Carroll
Rex B. McLellan
Ronald P. Nordgren
Pol D. Spanos
Tayfun E. Tezduyar
Chao-Cheng Wang
Professors Emeritus
Franz R. Brotzen
Alan J. Chapman
Angelo Miele
Adjunct Professors
Aladin Boriek
Thomas A. Krouskop
Paul R. Paslay
Joseph R. Rodarte
Associate Professors
Yves C. Angel
Enrique V. Barrera
Fathi Ghorbel
Andrew J. Meade, Jr.
Adjunct Associate Professor
Jeffrey D. Reuben
Visiting Associate Professor
Timothy P. Harrigan
Assistant Professor
S. Scott Collis
Lecturers
Catherine G. Ambrose
Robert A. Cunningham
Joseph L. Kelly
David M. McStravick

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

Studies in mechanical engineering may lead to specialization in one of several areas, including thermal sciences and energy conversion, computational mechanics, engineering mechanics, robotics, gas dynamics, and biomechanics. Studies in materials science focus on the fabrication, structure, and properties of materials used by engineers such as metals and their alloys, semiconductors, ceramics, glasses, polymers, and various composites.

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 thermal sciences and energy conversion, gas dynamics and hydrodynamics, stress analysis and mechanical behavior of materials, robotics and control, and aerospace engineering. Graduate students may also pursue research degrees. Faculty research interests fall in the areas of theoretical and rock mechanics, heat transfer, biomedical engineering, fluid dynamics, optimization theory, materials science, and aeronautics and astronautics. 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., B.S.M.E., and B.S.M.S. in Mechanical Engineering or Materials Science and Engineering

The B.A. program in either mechanical engineering, accredited by the Accreditation Board for Engineering and Technology (ABET), 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 require more technical courses than the B.A. and prepare students for the professional practice of engineering. During their senior year, mechanical engineering students in the B.S. program take courses in computer-aided design and design applications 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 ABET.

For general university requirements, see Graduation Requirements (pages 17–19). 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 the B.S. programs in both mechanical engineering and materials science and engineering. All undergraduates must take the following courses:

Basic Courses

CAAM 335 *Foundations of Applied Mathematics I*
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*
MSCI 301 *Materials Science*
PHYS 101 *Mechanics*
PHYS 102 *Electricity and Magnetism*

B.A. Program. Students seeking the B.A. degree with a major in mechanical engineering must complete at least 63 semester hours in courses specified by the department. These include the basic courses (above) plus the following:

CAAM 211 *Introduction to Engineering Computation*
CAAM 336 *Foundations of Applied Mathematics II*
MECH 200 *Classical Thermodynamics*
MECH 311 *Mechanics of Deformable Solids*
MECH 371 *Fluid Mechanics I*
MECH 411 *Analytical Dynamics*
MECH 481 *Heat Transfer*

1 of the following paired courses:

MECH 372 *Fluid Mechanics II* and MECH 471 *Applications of Thermodynamics*
MECH 412 *Vibrations* and MECH 420 *Feedback Control of Dynamic Systems*
CIVI 400 *Mechanics of Solids II* and MECH 401 *Mechanical Design Applications*

Of the remaining hours required to reach a total of 123 hours at graduation, 21 hours must be in courses at the 300 level or higher.

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.

B.S. Programs. Degrees offered include the Bachelor of Science in Mechanical Engineering (B.S.M.E.) and the Bachelor of Science in Materials Science and Engineering (B.S.M.S.).

Students seeking the ABET-accredited **B.S.M.E.** must complete 92 semester hours in courses specified by the department. These include the basic courses (see above) plus the following:

CAAM 211 *Introduction to Engineering Computation*
CAAM 336 *Foundations of Applied Mathematics II*
CIVI 400 *Mechanics of Solids II*
ELEC 242 *Introduction to Circuits and Electronics*
MECH 200 *Classical Thermodynamics*
MECH 311 *Mechanics of Deformable Solids*
MECH 331 and 332 *Junior Lab I* and *II*
MECH 340 *Industrial Process Lab*
MECH 371 and 372 *Fluid Mechanics I* and *II*
MECH 401 *Mechanical Design Applications*
MECH 403 *Computer-Aided Design*
MECH 404 *Senior Design Project*
(or MECH 408 *Mechanical Design Project II)*
MECH 411 *Analytical Dynamics*
MECH 412 *Vibrations*
MECH 431 *Senior Lab I*
MECH 471 *Applications of Thermodynamics*
MECH 481 *Heat Transfer*
MSCI 304 *Applied Materials Engineering*
1 approved major design elective (3 hours)

Students seeking the **B.S.M.S.** must complete at least 91 semester hours in courses specified by the department. These include the basic courses (page 194) plus the following:

CAAM 211 *Introduction to Engineering Computation*
CAAM 335 *Matrix Analysis*
CIVI 300 *Mechanics of Solids*
ELEC 241 *Fundamentals of Electrical Engineering I* or ELEC 243 *Introduction to Electronics*
MSCI 301 *Materials Science*
MSCI 303 *Materials Science Junior Lab*
MSCI 311 *Introduction to Design*
MSCI 401 *Thermodynamics and Transport Phenomena in Materials Science*
MSCI 402 *Mechanical Properties of Materials*
MSCI 404 *Materials Engineering and Design*
MSCI 406 *Physical Properties of Solids* or MSCI 415 *Ceramics and Glasses*
MSCI 411 *Metallography and Phase Relations* or MSCI 415 *Ceramics and Glasses*
MSCI 500 and 501 *Materials Science Seminar*
MSCI 535 *Crystallography and Diffraction*
MSCI 537 *Materials Science Senior Lab*
MSCI 594 *Properties of Polymers*

1 course from the following:
PHYS 201 *Waves and Optics*
CHEM 211 *Organic Chemistry*
CHEM 311 *Physical Chemistry*

Electives
1 approved science elective (at the 200 level or higher)
1 approved engineering science elective (not MSCI)
1 approved technical elective

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 72–73). 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 72–73). 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 (pages 419–425) and MSCI (pages 439–442) in the Courses of Instruction section.

Medieval Studies

The School of Humanities

Director
Honey Meconi

Professors
Jane Chance
Gilbert Morris Cuthbertson
Michael P. Hammond
Deborah Hubbard Nelson
John M. Stroup
Albert Van Helden
Adjunct Professor
E. Douglas Mitchell
Associate Professors
Michael Maas
Donald Ray Morrison
Linda E. Neagley
David Nirenberg
Carol E. Quillen
Paula Sanders
Hector N. Urrutibéheity
Kristine Gilmartin Wallace
Assistant Professors
Eva Haverkamp
Diana Lobel
Rafael M. Mérida–Jiménez
Heghnar Watenpaugh

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, German, Spanish, or Latin), music, philosophy, or religion.

Degree Requirements for B.A. in Medieval Studies

For general university requirements, see Graduation Requirements (pages 17–19). Students majoring in medieval studies must complete at least 36 semester hours (12 courses); the minimum for double majors is 30 hours. All majors must take 6 of these medieval studies courses at the 300 or 400 level. Required courses include the following:

- 1 of the following 3 courses:
  HIST 202 *Introduction to Medieval Civilization: Early Middle Ages*
  HIST 203 *Introduction to Medieval Civilizations: High Middle Ages*
  HUMA 103 *Introduction to Medieval Civilization: High Middle Ages*
- 1 medieval literature course
- 1 course in medieval art or music, such as:
  HART 317 *Early Medieval Art from 5th Century to Romanesque*
  HART 319 *Gothic Art and Architecture in Northern Europe, 1140–1300*
  MUSI 222 *Medieval and Renaissance Music*
  MUSI 429 *Music of the Middle Ages*
- 1 course in medieval philosophy or religion, such as:
  HIST 273/373 *Postbiblical Jewish History I*
  HIST 281 *The Middle East from the Prophet Muhammad to Muhammad Ali*
  PHIL 201 *History of Philosophy I*

- Two semesters of foreign language study, determined in consultation with the medieval studies adviser
- 3 courses, at least 2 at the 300 or 400 level, in their chosen field of emphasis (1 of these may be a directed reading course)
- 3 additional courses in the medieval period, 1 of which may be a senior thesis on a topic in their field of emphasis (for single majors); 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 one foreign language in some depth (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:

I. Language, Literature, and Culture

Classics
LATI 101 and 102 *Elementary Latin I* and *II*
LATI 201 *Intermediate Latin I: Prose*
LATI 202 *Intermediate Latin II: Poetry*

English
ENGL 312 *Gender and Power in Old English*
ENGL 314/514 *Middle English Literature*
ENGL 316/516 *Chaucer*
ENGL 317 *Arthurian Literature*
ENGL 318 *J. R. R. Tolkien*
ENGL 415/515 *Christine de Pizan in 15th-Century England*
ENGL 493 *Directed Reading*
ENGL 512 *Old English and Contemporary Theory*
ENGL 517 *Medieval Women Writers*
ENGL 621/622 *Directed Reading*

French
FREN 403 *History and Stylistics of French Language*
FREN 410/510 *The Literary and Historical Image of the Medieval Woman*
FREN 414 *Literature and Culture of the Middle Ages: King Arthur*
FREN 415/515 *Courtly Love in Medieval France*

German
GERM 405 *Introduction to Gothic and Old High German*
GERM 411 *Introduction to Middle High German*
GERM 412 *Middle High German Lyric and Epic Poetry*
GERM 421 *German Literature: Medieval Germanic Literature and Mythology*
GERM 521 *Gothic*
GERM 522 *Old High German*

Humanities
HUMA 103 *Introduction to Medieval Civilization*

Linguistics
LING 395 *History of the English Language*

Spanish
SPAN 315 *Studies in Hispanic Linguistics: Old Spanish*
SPAN 418/518 *Medieval Spanish Literature*
SPAN 426 *Women and Gender in Medieval Iberia*

II. Art History, Music, Philosophy, Religion

History of Art
HART 205 *Introduction to History of Art*
HART 309 *Late Antique/Early Christian Art and Architecture*
HART 315 *Art and Architecture in the Middle East in the Medieval Period*
HART 317 *Early Medieval Art from 5th Century to Romanesque*
HART 319 *Gothic Art and Architecture in Northern Europe, 1140–1300*

HART 370 *Late Gothic Art and Architecture in Northern Europe, 1300–1500*
HART 378 *Jan van Eyck*
HART 494 *The Gothic Portal*

Music
MUSI 222 *Medieval and Renaissance Music*
MUSI 429 *Music of the Middle Ages*
MUSI 724 *Hildegard of Bingen*

Philosophy
PHIL 201 *History of Philosophy I*
PHIL 301 *Ancient and Medieval Philosophy*

Religious Studies
RELI 270 *The Rabbinic Imagination*
RELI 370/560 *Dynamics of Classical Judaism*
RELI 373/563 *Duties of the Heart: Themes in Medieval Jewish Thought*
RELI 374/564 *Philosophy and Mysticism: Islamic/Judaic*
RELI 375/565 *The Quest for God and the Good*
RELI 377/567 *Quest for the Absolute: East and West*

III. History

History
HIST 202/325 *Introduction to Medieval Civilizations: Early Middle Ages*
HIST 203/326 *Introduction to Medieval Civilizations: High Middle Ages*
HIST 273/373 *Postbiblical Jewish History I*
HIST 281 *The Middle East from the Prophet Muhammad to Muhammad Ali*
HIST 303/304 *Undergraduate Independent Reading*
HIST 308 *The World of Late Antiquity*
HIST 320 *Science in Antiquity and the Middle Ages*
HIST 345 *Renaissance Europe*
HIST 382 *Classical Islamic Culture*
HIST 384 *The Crusades: Holy War in Medieval Christendom and Islam*
HIST 438 *Women and Gender in Islamic Societies*
HIST 439 *Christianity and the West*
HIST 460 *Advanced Seminar in Ancient History: The Age of Justinian*
HIST 488 *Minorities in the Middle Ages*
HIST 489 *Sex and Group Identity*
HIST 521/522 *Directed Readings in Medieval History*
HIST 581 *Graduate Seminar in Medieval History*

Political Science
POLI 340 *Ancient and Medieval Political Theory*

Military Science

Lieutenant Colonel Charles R. Reed, *Chair*

Students participate in the military science program, or Army Reserve Officers' Training Corps (ROTC), through cross-enrollment with the University of Houston. Classes emphasize leadership and management, using instruction common to all branches of the U.S. Army. Students may complete their ROTC courses by enrolling in either a four-year, three-year, or two-year program. Graduates are commissioned for active duty, in the Army Reserve or in the Army National Guard.

Degree Requirements for Military Science Program

For general university requirements, see Graduation Requirements (pages 17–19). Further details on ROTC programs at Rice are available on page 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.

Four-Year Program. The four-year program consists of a two-part basic course, which students take during their first and second years, and a two-part advanced course, which students take during their third and fourth years. Students enrolled in the first two years of ROTC participate with no military obligation. Veterans receive credit for the basic course and may enter the advanced course once they have completed at least 60 semester hours.

Two-Year Program. Students with two years of undergraduate study remaining are eligible to enter the advanced course following successful completion of a five-week basic camp. *There is no military obligation for attending basic camp.* Students attend basic camp during the summer at Fort Knox, Kentucky, and are paid approximately $700 for the five-week period. Veterans are exempt from this requirement and may enter directly into the advanced course.

Advanced Camp. All students, whether in the two-year or in the four-year program, attend a five-week advanced camp at Fort Lewis, Washington, between their junior and senior years. Each student is paid approximately $700 for this camp.

Financial Assistance. All contracted students, whether they have scholarships or not, receive a $150 monthly stipend. Two-, three-, and four-year scholarships are available for students participating in the ROTC program at Rice. Students with a grade point average above 2.70 and students in technical majors are prime candidates for selection. The application deadline for four-year scholarships is in November; the deadline for three-year scholarships is in April. Scholarship students receive annual tuition assistance of up to $16,000. The U.S. Army also covers the costs of books and educational fees (e.g., health, athletic, and lab fees) for scholarship students up to a maximum amount set annually by the U.S. Army Cadet Command.

See MILI (pages 438–439) in the Courses of Instruction section (these are University of Houston listings).

Music

The Shepherd School of Music

Dean
Michael P. Hammond

Professors
Edward Applebaum
Leone Buyse
Marcia J. Citron
Paul V. H. Ellison
Joyce Farwell
Norman Fischer
Raphael Fliegel
Armando Ghitalla
Kenneth Goldsmith
Clyde Holloway
Martha Strongin Katz
Paul C. Katz
Kathleen Kaun
Sergiu Luca
Ellsworth Milburn
Anne Schnoebelen
Kathleen Winkler

Associate Professors
Robert Atherholt
Walter B. Bailey
Wayne Brooks
Richard Brown
Arthur W. Gottschalk
Desmond Hoebig
Thomas I. Jaber
Benjamin C. Kamins
David E. Kirk
Richard A. Lavenda
Honey Meconi
William B. Murray
Paula Page
David Peck
Timothy Pitts
Larry Rachleff
Karen Ritscher
Robert Roux
William Ver Meulen
David L. Waters
Michael Webster

Assistant Professors
Anthony K. Brandt
David Ferris
Pierre D. Jalbert
David Soley

Artist Teachers
Brian Connelly
Jan de Chambrier
Debra Dickinson
Jeanne Kierman Fischer
John Perry
Janet Rarick
C. Dean Shank, Jr.

Lecturer
Nancy Gisbrecht Bailey

Adjunct Lecturers
David Malone
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 creative 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 1 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. After the required four semesters of instrumental or vocal study, however, students in the B.A. program who wish to continue taking private lessons 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 two 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 successful 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 17–19). Notice that music majors may use MUSI 221 and 222 *Historical Studies I* and *II* as partial fulfillment of their Group I (humanities) distribution requirement. For either bachelor's degree, students majoring in music must have a total of at least 120 semester hours at graduation. While the number of required hours varies according to major area, all students must take the following core courses (those in the B.A. program do not need to take MUSI 331, 332, and 431):

- MUSI 211, 212, 311, 312, and 411 *Theoretical Studies I, II, III, IV,* and *V*
- MUSI 221, 222, 321, 322, and 421 *Historical Studies I, II, III, IV,* and *V*
- MUSI 231, 232, 331, 332, and 431 *Aural Skills and Performance Techniques I, II, III, IV,* and *V*

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.

Students focus on either creative composition, performance, or research. The curriculum also includes seminars and professional apprenticeships. The apprenticeships range from participation in professional orchestras to solo performance and from composition for television to library research. Students are responsible for arranging

apprenticeships appropriate to their individual interests. The music faculty help in these arrangements whenever possible. Apprenticeships and any other specialized studies undertaken by students require the approval of the faculty.

The first five semesters of course work in this program parallel the core curriculum of the bachelor's degrees (page 202). The sixth semester is a transitional semester during which students qualify for admission to the combined program. For students who fail to qualify by the end of their sixth semester, registration for graduate courses requires special permission. Students must complete at least 5 and preferably 6 distribution courses by the end of their sixth semester before the school can consider them for this honors program.

A qualifying examination determines whether students are admitted to the combined program. For performance majors, this examination consists of the qualifying recital and an oral examination in music history and music theory, based on the compositions to be performed in the qualifying recital.

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.

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), including the advanced music tests, is also required of graduate applicants in musicology, theory, and composition.

Requirements. For general university requirements, see Graduate Degrees (pages 72–73). For the M.Mus. degree, candidates must complete at least 2 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 4 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. Students on music probation may not graduate unless they show prompt and marked improvement. 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 readmission into the Shepherd School and may be asked to reapply/reaudition. (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 and 118 *Fundamentals of Music I* and *II*
- MUSI 307 and 308 *Composition for Nonmajors I* and *II*
- MUSI 317 and 318 *Theory for Nonmajors I* and *II*
- MUSI 327 and 328 *Music Literature for Nonmajors I* and *II*
- MUSI 334 and 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, and Da Camera, 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 (pages 442–455) in the Courses of Instruction section.

Naval Science

Chair
James C. Boyer

Assistant Professors
Stephen W. Austin
Arnold Galit
Richard Garrison

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 17–19). Further details on ROTC programs at Rice are available on page 25. 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 $150 per month for a maximum of four academic years, with all tuition, fees, books, and equipment paid for by the government. 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 are civilian college students who 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 $150 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 (pages 455–456) in the Courses of Instruction section.

Philosophy

The School of Humanities

Chair
George Sher

Professors
Baruch Brody
Steven G. Crowell
Hugo Tristram Engelhardt, Jr.
Richard E. Grandy
Mark Kulstad
Larry S. Temkin

Associate Professor
Donald Ray Morrison
Assistant Professor
Nomy Arpaly
Eric Margolis
Sherrilyn Roush

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 17–19). 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 specific courses:

PHIL 201 and 202 *History of Philosophy I* and *II*
PHIL 306 *Ethics*
(or PHIL 307 *Social and Political Philosophy)*
PHIL 106 *Logic*
(or PHIL 305 *Mathematical Logic)*

2 courses in the history of philosophy from the following:
PHIL 301 *Ancient and Medieval Philosophy*
PHIL 302 *Modern Philosophy*
PHIL 308 *Continental Philosophy*

Students may substitute PHIL 304 *Metaphysics*, PHIL 303 *Theory of Knowledge*, or PHIL 353 *Philosophy of Language* for one of the history courses.

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

For general university requirements, see Graduate Degrees (pages 72–73). 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 (pages 456–460) in the Courses of Instruction section.

Physics

The Wiess School of Natural Sciences

Chair
F. Barry Dunning

Professors
Stephen D. Baker
Billy E. Bonner
Marjorie D. Corcoran
Ian M. Duck
Thomas L. Estle, *Emeritus*
James P. Hannon
Huey W. Huang
Randall G. Hulet
F. Curtis Michel
Hannu E. Miettinen
Gordon S. Mutchler
Peter Nordlander
Carl Rau
Jabus B. Roberts, Jr.
Richard E. Smalley
Paul M. Stevenson
George T. Trammell, *Emeritus*
G. King Walters
Associate Professor
Stanley A. Dodds
Assistant Professors
Alexander J. Rimberg
Qimiao Si
Distinguished Faculty Fellows
Edward B. Platner
Ken A. Smith
Senior Faculty Fellow
David L. Adams
Faculty Fellows
William J. Llope
B. Paul Padley
Pablo P. Yepes

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

In addition to the regular undergraduate physics major, the Physics Department offers options in space physics and astronomy, applied physics (which facilitates a double major in electrical engineering), and biophysics, as well as an interdepartmental major in chemical physics. Within the graduate program, research facilities and thesis supervision are available in atomic and molecular physics, biophysics, nuclear and particle physics, condensed matter and surface physics, and theoretical physics.

Degree Requirements for B.A. in Physics

For general university requirements, see Graduation Requirements (pages 17–19). Students majoring in physics may select the regular physics major or one of several options within the department, as well as an interdepartmental major in chemical physics. Students may obtain credit for some courses by advanced placement, and the department's Undergraduate Committee can modify requirements to meet the needs of students with special backgrounds. The physics requirements for double majors are the same as those for single majors, except that substitutions may be possible when students have taken comparable courses in other departments.

All physics majors must complete the following courses:

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*
PHYS 311 *Introduction to Quantum Physics I*
MATH 101 and 102 *Single Variable Calculus I* and *II*
MATH 211 *Ordinary Differential Equations and Linear Algebra*
MATH 212 *Multivariable Calculus*
(MATH 221 and 222 *Honors Calculus III* and *IV* may substitute for MATH 211 and 212)
CHEM 121*General Chemistry* or CHEM 151 *Honors Chemistry*

Additional courses are required.

For the regular physics major:

PHYS 312 *Introduction to Quantum Physics II*
PHYS 331 and 332 *Junior Physics Lab I* and *II*
PHYS 411 *Introduction to Nuclear and Particle Physics* (or approved substitute)
PHYS 412 *Solid-State Physics* (or approved substitute)
PHYS 425 *Statistical and Thermal Physics*
PHYS 431 and 432 *Senior Physics Research I* and *II*
MATH 381 *Introduction to Partial Differential Equations* and MATH 382 *Complex Analysis* or CAAM 335 and 336 *Foundations of Applied Mathematics I* and *II*
CHEM 122 *General Chemistry* or CHEM 152 *Honors Chemistry*

For the physics major with option in space physics and astronomy:

PHYS 425 *Statistical and Thermal Physics*
SPAC 100 *Seminar: Exploring the Cosmos*
SPAC 230 *Astronomy Laboratory*
SPAC 350 *Introduction to Astrophysics*
SPAC 360 *Galaxies and Cosmology*
SPAC 400 *Undergraduate Research Seminar*
Two semesters of SPAC 490 *Undergraduate Research*
One topical group chosen from: SPAC 443 *Atmospheric Science*, SPAC 470 *Solar System Physics*, and SPAC 480 *Introduction to Plasma Physics*; or SPAC 430 *Teaching Astronomy*, SPAC 450 *Experimental Space Science*, and ELEC 361 *Electronic Materials and Quantum Devices*; or SPAC 451 *Astrophysics I: Sun and Stars*, SPAC 480 *Introduction to Plasma Physics*, and PHYS 312 *Introduction to Quantum Physics II*.
CAAM 211 *Introduction to Engineering Computation* or NSCI 230 *Computation in the Natural Sciences*
CAAM 336 *Foundations of Applied Mathematics II*

For the physics major with option in applied physics:

ELEC 306 *Electromagnetic Fields and Devices* may substitute for PHYS 302
PHYS 312 *Introduction to Quantum Physics II* or ELEC 361 *Electronic Materials and Quantum Devices*
Two of PHYS 331 or 332 *Junior Physics Lab I* or *II* or ELEC 327 *Digital Logic Design Laboratory* or ELEC 342 *Electronic Circuits* or ELEC 465 *Physical Electronics Practicum*
PHYS 412 *Solid-State Physics*, or approved substitute in applied physics
PHYS 425 *Statistical and Thermal Physics*
PHYS 431 and 432 *Senior Physics Research I* and *II*
ELEC 243 *Introduction to Electronics* or ELEC 242 *Fundamentals of Electrical Engineering II*
ELEC 305 *Introduction to Physical Electronics*
MATH 381 *Introduction to Partial Differential Equations* or CAAM 335 *Foundations of Applied Mathematics I*
CHEM 122 *General Chemistry* or CHEM 152 *Honors Chemistry*

For the physics major with option in biophysics:

PHYS 312 *Introduction to Quantum Physics II*
PHYS 425 *Statistical and Thermal Physics*
BIOS 201 and 202 *Introductory Biology I* and *II*
BIOS 301 *Biochemistry*
CHEM 122 *General Chemistry* or CHEM 152 *Honors Chemistry*
CHEM 211 and 212 *Organic Chemistry I* and *II*
CHEM 213 and 214 *Organic Chemistry Lab I* and *II*

Chemical Physics Major

All chemical physics majors must complete the following courses:

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*
Two of PHYS 311 or 312 *Introduction to Quantum Physics I* or *II* or CHEM 415 *Chemical Kinetics and Dynamics* or CHEM 430 *Quantum Chemistry*
MATH 101 and 102 *Single Variable Calculus I* and *II*
MATH 211 *Ordinary Differential Equations and Linear Algebra*
MATH 212 *Multivariable Calculus*
(MATH 221 and 222 *Honors Calculus III* and *IV* may substitute for MATH 211 and 212)
Six hours from NSCI 230 *Computation in the Natural Sciences* or CAAM 210 or 211 *Introduction to Engineering Computation* or advanced (300 level or above) CAAM or MATH courses.
CHEM 121 and 122 *General Chemistry* or CHEM 151 and 152 *Honors Chemistry*
CHEM 211 *Organic Chemistry I*
CHEM 212 *Organic Chemistry I* or CHEM 360 *Inorganic Chemistry*
CHEM 311 and 312 *Physical Chemistry I* and *II*
Six hours from CHEM 213 or 214 *Organic Chemistry Laboratory* or CHEM 351 or 352 *Introductory Module in Experimental Chemistry* or CHEM 371–377 *Advanced Modules* or PHYS 331 or 332 *Junior Physics Lab I* or *II*

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

For general university requirements, see Graduate Degrees (pages 72-73). Detailed information on research programs in physics and specific departmental degree requirements are available from the Department of Physics.

M.A. Program. The M.A. degree requires at least one year of graduate study. Students must complete 30 semester hours of approved graduate-level studies, including a research thesis performed under the direction of a physics faculty member.

Ph.D. Program. 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.A. in physics. Students must also complete 60 semester hours of approved graduate-level study at Rice and produce a research thesis under the direction of a physics faculty member. At least two years of graduate study are required for the Ph.D.

See PHYS (pages 461-463) 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 on these programs.

Degree Requirements for B.A. in Policy Studies

For general university requirements, see Graduation Requirements (pages 17–19). 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 six courses from one of the following areas of specialization:

- environmental policy
- government policy and management
- health-care management
- international affairs
- law and justice
- managerial and business policy
- political management and communications

Policy studies students must also engage in a **research project** in their area of interest, either through a research seminar or independent study. 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*
SOSC 300 *Social Science and Public Policy* or POLI 337 *Public Policy and Bureaucracy*
1 advanced analysis or methods course approved by the policy studies director

6 Area Curriculum Courses
6 courses from 1 of the following 7 groups

1. Environmental Policy:
Core Courses (Choose at least 3)
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)
ANTH 468 *Palaeoclimate and Human Response*
BIOS 322 *Global Ecosystem Dynamics*
BIOS 324 *Wetland Ecosystems*
BIOS 325 *Ecology*
ENGL 478 *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:
Core Courses (Choose at least 3)
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 337 *Public Policy and Bureaucracy*
POLI 436 *Politics of Regulation*

Electives (Choose up to 3)
ECON 438 *Economics of the Law*
ECON 480 *Environmental and Energy Economics I*
POLI 331 *Environmental Politics and Policy*
POLI 335 *Political Environment of Business*
POLI 458 *Property Rights and Privatization*
ENVI 406 *Introduction to Environmental Law*
SOSC 330 *Health Care Reform in the 50 States*
SOSC 430 *The Shaping of Health Policy in the United States*
SOCI 308 *Houston: The Sociology of a City*
SOCI 331 *Politics and Society in Texas*
SOCI 370 *Sociology of Education*
SOCI 350 *Sociological Approaches to Poverty*
SOCI 441 *Minorities in the Schooling Process*

3. Health-Care 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 & II*
SOSC 330 *Health-Care Reform in the 50 States*
SOSC 420 *Health Care: Competition and Managed Care*
SOSC 430 *The Shaping of Health Policy in the United States*
SOCI 334 *Sociology of the Family*
SOCI 345 *Sociology of Medicine*
SOCI 433 *Sociology of the Life Cycle: Death and Dying*
SPAN 307/308 *The Language of Health Care*

4. International Affairs:
Core Courses (Choose at least 2)
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*
ECON 421 *International Finance*
ECON 430 *Comparative Economic Systems*
ECON 451 *Political Economy of Latin America*
HIST 232 *The Making of Modern Africa*
HIST 394 *War in the Modern World*
HIST 464 *Foreign Policy of Nixon and Kissinger*
HIST 469 *US–Latin America Relation*
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*
HPER 364 *Sport and the Law*
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 335 *Political Environment of Business*
POLI 336 *Politics of Regulation*
PSYC 231 *Industrial and Organizational Psychology*

Electives (Choose up to 3)
ACCO 305 *Introduction to Accounting*
CAAM 376 *Introduction to Management Science*
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. Political Management and Communications:
(Choose 6)
ANTH 342 *Political Cinema*
ANTH 395 *Culture and Communication*
POLI 334 *Interest Groups and Political Parties*
POLI 366 *Elections in Western Democracies*
POLI 380 *Political Behavior*
POLI 382 *Public Opinion*
POLI 431 *Electoral Campaigns*
POLI 437 *Representation*
POLI 496 *Survey Research Methods*
SOCI 336 *Mass Communications*
SOCI 360 *Television in American Culture*

1 Seminar or Independent Research
Must be approved by the policy studies director

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
(on leave fall 1999)
Associate Professor
John R. Alford

Assistant Professors
Sherry Bennett
(on leave 1999–2000)
David S. Brown
Carolyn L. Funk
Ellen Lust-Okar
Randolph T. Stevenson
Andrew B. Whitford
(on leave 1999–2000)
Lecturer
C. M. Hudspeth
Professor Emeritus
Fred R. von der Mehden

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 political institutions and behavior, comparative politics, international relations, political philosophy and legal theory, empirical theory and method, and American public policy (see also majors in managerial studies and public policy). Graduate study is grounded in the areas of American government (public policy, Congress, and intergovernment 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 17–19). 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 enter 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 4 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 entering 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. Although the department encourages prospective majors to take one or more of these courses, preferably in their first or second year, none of the introductory courses is required. Students should note, however, that POLI 210 is the course that meets the Texas state licensing requirements in political science for teachers. Students who entered Rice before fall 1999 and choose to stay with the old plan 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 should 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 two 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 34).

Degree Requirements for M.A. and Ph.D. in Political Science

For general university requirements, see Graduate Degrees (pages 72–73). Students in the Ph.D. program must complete 48 semester hours in advanced courses or seminars prior to candidacy and conclude the degree program with the oral presentation of a dissertation displaying original research. Normally, students take the specified core courses in the three general fields of American government, comparative government, and international relations, completing additional course work and comprehensive examinations in two of those three fields. Before taking the comprehensive examinations, students must:

- Complete a course in statistical analysis
- Demonstrate some familiarity with traditional political theory
- Satisfy the language or skill requirement in their major field
- Complete all course requirements, including a two-semester sequence in scope and methods

Students select specific courses for graduate study in consultation with the faculty adviser.

See POLI (pages 464–472) in the Courses of Instruction section.

Psychology

The School of Social Sciences

Chair
Robert L. Dipboye

Professors
John W. Brelsford
Kenneth R. Laughery
Randi C. Martin
H. Albert Napier
Daniel Osherson
James Pomerantz
David J. Schneider
Ronald N. Taylor
Michael J. Watkins

Associate Professors
Richard R. Batsell
Sarah A. Burnett
Steven C. Currall
David M. Lane
Miguel A. Quiñones

Assistant Professors
Michael Byrne
Mikki Hebl
Geoff Potts
Tony Ro

Adjunct Professors
John H. Byrne
J. Maxwell Elden
William C. Howell
Susan Jerger
Katherine A. Loveland
John E. Overall
James R. Pomerantz
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
Vicki V. Vandaveer

Adjunct Instructors
Roberta M. Diddel
Heidi Schweingruber
Mihriban Whitmore

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 17–19). 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*
PSYC 340 *Research Methods*
(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 362 *Biopsychology*

Block 2
PSYC 329 *Psychological Testing*
PSYC 330 *Personality Theory*
PSYC 332 *Abnormal Behavior*

Honors Program. To participate in the honors program, students must complete the major requirements listed above, write an honors thesis, and meet other requirements as determined by the student's honors committee (see Honors Programs on page 34). Candidates for the honors program must submit an application for faculty approval.

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

For general university requirements, see Graduate Degrees (pages 72–73). 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 (pages 472–479) in the Courses of Instruction section.

Religious Studies

The School of Humanities

Chair
Gerald P. McKenny

Professors
Werner H. Kelber
Anne C. Klein
John M. Stroup
Edith Wyschogrod
Associate Professor
William B. Parsons
Assistant Professors
Elias K. Bongmba
Matthias Henze
Diana Lobel
Adjunct Professor
Stanley J. Reiser
Adjunct Associate Professor
Elizabeth Heitman
Adjunct Assistant Professor
Hugh W. Sanborn
Lecturer
Samuel E. Karff

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, 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.

The Department of Religious Studies, in cooperation with the University of Texas Health Science Center, also offers a **Ph.D. in biomedical ethics** for students seeking to combine a rigorous training in religious studies (particularly theoretical approaches to ethics) with an interest in clinical and policy issues related to health care. The focus on health care distinguishes the program from those that concentrate more exclusively on moral philosophy or clinical ethics. Both the academic track and the professional track enable students to develop skills in interpreting religious/cultural texts and practices while engaging with theoretical and concrete issues in ethics, and the second track also prepares students to exercise clinical judgment, interpret cases, and engage in clinical research.

Degree Requirements for B.A. in Religious Studies

For general university requirements, see Graduation Requirements (pages 17–19). Students majoring or double-majoring in religious studies must complete:

- 24 semester hours (8 departmental courses)
- 18 hours (6 courses) at the 200, 300 or 400 level
- No more than 6 hours (2 courses) outside of religious studies

In order to ensure breadth and depth to the major, students are encouraged to work out a program of study with the undergraduate adviser. The 8 courses are to be selected according to the following requirements:

- RELI 101 *Introduction to Religion* to be taken in the first or second year
- A majors seminar to be taken in the junior or senior year

- 3 courses to be selected from one of the following fields: Judaism, Christianity, African Religions, Buddhism, Comparative Studies, Cross-Cultural Studies, Methodological Studies, and Ethics
- 3 courses to be selected from at least two other fields

Students who wish to pursue a course of study more directly oriented toward their intellectual and personal interests are referred to the existence of the area major. See Other Options for Undergraduate Majors in the catalog. As a rule, area majors in religious studies will be required to write a thesis.

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 and Majors, etc., (pages 19–21).

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 72–73). Within the limits of available funds, fellowships and scholarships are awarded to qualified students. As part of their training, students usually assist the department in such areas as teaching or library work.

The M.A. in religious studies is a two-year program.

- Students take 8 courses in four fields (see Ph.D. field description below), with the distribution of these courses to be worked out with the graduate adviser and the student's own faculty mentor, chosen early in the first semester
- In addition to course work, students are required to pass a reading exam by the end of their third semester in an appropriate biblical, Asian, or European foreign language
- M.A. thesis, preferably spanning two separate fields.
- Written exams are given in the remaining two fields, usually during the fourth semester

The Ph.D. in religious studies consists of 54 credit hours (18 courses); 6 courses are taken in the major field and 3 in each of two minor fields. The 6 remaining courses are selected at the discretion of the student in consultation with the graduate adviser and the student's own mentor. These 6 courses may augment one of the minors, be used for language study, or probe new areas of inquiry in religious studies. This flexibility presumes close and continuous consultation between faculty and student; each student selects a faculty mentor in his or her main field of study on entering the program. Should the focus of study or other circumstances change, a new mentor may be requested.

Students are strongly encouraged to take one minor outside the cultural/geographical area of their major; they are also encouraged to see major and minor alike as part of a cohesive body of study by exploring thematic contrasts and likenesses in these fields.

Majors can be in any of the following fields; however, at least one minor must be in an area other than the major. Thus, if the major is in Area I, at least one minor will be in Area II.

AREA I: TRADITIONS

Historical and textual studies in the following religious traditions:

1. Christianity and/or Judaism in Antiquity
2. Christianity and/or Judaism in the Modern World
3. Buddhism: Focus on India and Tibet
4. African Religions

AREA II: THEORIES AND METHODS
1. Ethics/Biomedical Ethics*
2. Psychology of Religion
3. Philosophy of Religion
4. Religion and Contemporary Culture
5. Comparative Studies
6. Mysticism

Languages. Because dissertation work in virtually all areas will involve foreign language materials, Ph.D. students in Religious Studies are required to gain sufficient linguistic training for their research. Language comprehensives may be taken in biblical, European, and Asian languages; generally, two languages other than English will be required. Advanced language courses with substantial thematic content may count toward the appropriate major or minor.

Reading Lists. Students 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 (see below) is, in part, an introduction to areas of the reading list and to the techniques for engaging in deep, independent reading.

Teaching. Opportunities may be available for students to participate in teaching courses. The precise degree and kind of participation vary. Opportunities to teach courses in local colleges and universities may also arise.

Qualifying for Dissertation Status. After completing course work, students will take three exams in their major area and one exam in each of their minors. The exams in the major will typically include one qualifying paper, which is intended to be a step toward the dissertation. The other two major exams can be either written responses to questions or a comprehensive paper; in either case, these will require an ability to survey the relevant literature in the reading lists. Minor exams can be either a response to questions, a comprehensive paper, or, less typically, a qualifying paper.

Some of the questions on these exams will be comparative, allowing the student to reflect on the relationship between their major and minor fields. Exact form and content of a particular student's exams are worked out with the graduate and the graduate adviser and faculty mentor by the end of the fourth semester, or one year before the student expects to take the exams. Upon completion of these exams, one may petition for candidacy. The dissertation-writing phase of the student's career begins with an oral discussion in which the student is encouraged to think out loud, in the company of faculty and fellow students, about the central questions of his or her study and the focus of the dissertation.

Rice University awards, on a competitive basis, four years of support for graduate study. We strongly encourage students to consult with faculty and the Financial Aid Office to identify funding possibilities for a fifth year to give sufficient time for reflection and writing of the dissertation.

***Degree Requirements for Ph.D. in Biomedical Ethics**

The Ph.D. program in biomedical ethics, operated in conjunction with the University of Texas, offers two tracks: one for those preparing to teach ethics and another for those seeking a career in a clinical or policy setting. The two tracks differ primarily in the course selection, made in consultation with the adviser and individual faculty members, and in the content of the Ph.D. comprehensive examination. For the Ph.D. in health care ethics, students must:

- Complete 54 semester hours of course work in the selected fields (see above)
- Pass reading examinations in two foreign languages
- Perform satisfactorily on examinations (see above), including written examinations in the two major fields of ethics and biomedical ethics
- Complete an approved thesis and present an oral defense

Internships. Students in the later stages of the program who seek careers in clinical areas, research institutes, or policy settings often have opportunities to conduct clinical research through internships with selected faculty members of the University of Texas Health Science Center.

See RELI (pages 479–489) in the Courses of Instruction section.

Sociology

The School of Social Sciences

Chair
Chandler Davidson

Professors
Stephen L. Klineberg
William Martin

Associate Professors
Elizabeth Long
Michael Emerson

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 is often used as such in 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 B.A. in Sociology

For general university requirements, see Graduation Requirements (pages 17–19). Students majoring in sociology must complete at least 30 semester hours (10 courses) in sociology courses. Requirements for the major normally include:

SOCI 203 *Introduction to Sociology*
SOCI 421 *Craft of Sociology*
and either SOCI 390 *Research Methods*
or SOCI 496 *Advanced Research Seminar: The Houston Area Survey*

At least 1 theory course, such as:
SOCI 315 *Symbolic Interactionism*
SOCI 317 *Contemporary Sociological Theory*
SOCI 395 *Feminist Social Thought*

At least 6 additional sociology courses:
See course listings below, and check for availability. A statistical analysis course, such as, PSYC 339 *Statistical Methods in Psychology*, POLI 495 *Introduction to Statistics*, or STAT 280 *Elementary Applied Statistics*, may be used as one of these. The department recommends, however, that majors take SOCI 340 *Social Statistics*.

Sociology majors do not need to take a foreign language, but those planning graduate study ideally 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 34). Students who have maintained a B average in at least four sociology courses beyond the introductory level may apply to enter the honors program. Students should submit their research plans during the first semester of their junior year, no later than two weeks before registering for the spring semester. Proposals go to the Undergraduate Honors Committee (Professor Long, chair), which meets with students to evaluate and strengthen their proposals, then assigns a faculty adviser.

Students in the honors program register for two successive semesters in directed honors research (SOCI 492, 493). The first of the two courses, normally taken in the spring semester of the junior year, 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 summer and fall semesters of the senior year and is analyzed, written up, and defended as a completed honors thesis during the same fall semester.

All honor students should complete SOCI 390 *Research Methods* and/or SOCI 421 *Craft of Sociology* before beginning their second semester of honors research.

See SOCI (pages 493–496) in the Courses of Instruction section.

Sociology

The School of Social Sciences

Chair
Chandler Davidson

Professors
Stephen L. Klineberg
William Martin

Associate Professors
Elizabeth Long
Michael Emerson

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 is often used as such in 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 B.A. in Sociology

For general university requirements, see Graduation Requirements (pages 17–19). Students majoring in sociology must complete at least 30 semester hours (10 courses) in sociology courses. Requirements for the major normally include:

SOCI 203 *Introduction to Sociology*
SOCI 421 *Craft of Sociology*
and either SOCI 390 *Research Methods*
or SOCI 496 *Advanced Research Seminar: The Houston Area Survey*

At least 1 theory course, such as:
SOCI 315 *Symbolic Interactionism*
SOCI 317 *Contemporary Sociological Theory*
SOCI 395 *Feminist Social Thought*

At least 6 additional sociology courses:
See course listings below, and check for availability. A statistical analysis course, such as, PSYC 339 *Statistical Methods in Psychology*, POLI 495 *Introduction to Statistics*, or STAT 280 *Elementary Applied Statistics*, may be used as one of these. The department recommends, however, that majors take SOCI 340 *Social Statistics*.

Sociology majors do not need to take a foreign language, but those planning graduate study ideally 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 34). Students who have maintained a B average in at least four sociology courses beyond the introductory level may apply to enter the honors program. Students should submit their research plans during the first semester of their junior year, no later than two weeks before registering for the spring semester. Proposals go to the Undergraduate Honors Committee (Professor Long, chair), which meets with students to evaluate and strengthen their proposals, then assigns a faculty adviser.

Students in the honors program register for two successive semesters in directed honors research (SOCI 492, 493). The first of the two courses, normally taken in the spring semester of the junior year, 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 summer and fall semesters of the senior year and is analyzed, written up, and defended as a completed honors thesis during the same fall semester.

All honor students should complete SOCI 390 *Research Methods* and/or SOCI 421 *Craft of Sociology* before beginning their second semester of honors research.

See SOCI (pages 493–496) in the Courses of Instruction section.

Space Physics and Astronomy

The Wiess School of Natural Sciences

Chair
Patricia H. Reiff
Edison P. Liang, *Assistant Chair*

Professors
Paul A. Cloutier
Reginald J. Dufour
F. Barry Dunning
Arthur A. Few, Jr.
John W. Freeman
F. Curtis Michel
C. Robert O'Dell
G. King Walters
Richard A. Wolf
Associate Professor
Anthony A. Chan
Assistant Professor
Patrick M. Hartigan
Distinguished Faculty Fellows
Thomas W. Hill
Ken A. Smith
Faculty Fellow
Frank R. Toffoletto
Adjunct Professors
David C. Black
Franklin R. Chang-Diaz
Wendell Horton, Jr.
Carolyn Sumners
Jon C. Weisheit
J. David Winningham
David T. Young
Adjunct Associate Professors
James H. Newman
Tomasz F. Stepinski

Degrees Offered:
B.A. (in physics with space physics and astronomy option), M.S., Ph.D.

Although the department does not offer an undergraduate degree, students interested in studies of cosmic phenomena may complete the B.A. in physics with the space physics and astronomy option (see major in physics). The Department of Space Physics and Astronomy offers graduate study in research areas that include ground- and space-based observational astronomy, theoretical astrophysics and space plasma physics, earth systems science, and solar system physics. To earn an advanced degree, students must be knowledgeable in several of these areas and expert in at least one. Details on research programs and degree requirements are available from the department.

Degree Requirements for B.A. in Physics with Space Physics and Astronomy Option

For general university requirements, see Graduation Requirements (pages 17–19). Students majoring in physics who have elected the space physics and astronomy option must satisfy the following course requirements:

First year
MATH 101 *Single Variable Calculus I*
MATH 102 *Single Variable Calculus II*
PHYS 101/111 *Mechanics*
PHYS 102/112 *Electricity and Magnetism*
CHEM 121 *General Chemistry*
SPAC 100 *Exploring the Cosmos*

Second year

MATH 211 *Ordinary Differential Equations and Linear Algebra*
MATH 212 *Multivariable Calculus*
PHYS 201 *Waves and Optics*
PHYS 202 *Modern Physics*

PHYS 231 *Elementary Physics Lab II*
SPAC 230 *Astronomy Laboratory*
NSCI 230 *Computation in Natural Science*
(or CAAM 211 *Introduction to Engineering Computation)*

Third year

SPAC 350 *Introduction to Astrophysics—Stars*
SPAC 360 *Introduction to Astrophysics—Galaxies and Cosmology*

PHYS 301 *Intermediate Mechanics*
PHYS 302 *Intermediate Electrodynamics*
PHYS 425 *Statistical and Thermal Physics*
CAAM 336 *Differential Equations in Science and Engineering*

Fourth year

SPAC 400 *Research Seminar*
SPAC 400 *Research Seminar*

SPAC 490 *Independent Research*
SPAC 490 *Independent Research*
PHYS 311 *Introduction to Quantum Physics I*

Undergraduates also are urged to develop some proficiency in computer programming before their junior year.

Degree Requirements for M.S. and Ph.D. in Space Physics and Astronomy

For general university requirements, see Graduate Degrees (pages 72–73). A bachelor's degree in physics or a closely related discipline is necessary for admission to the department. Program requirements are detailed in a booklet available from the department or from the World Wide Web at <http://spacsun.rice.edu>.

M.S. Program. Candidates for the M.S. degree must successfully:

- Demonstrate an understanding of physics and astronomy in an oral examination
- Complete at least 30 semester hours of approved advanced course work/research, and
- Prepare a written thesis on an original research topic and defend the thesis orally; or
- Prepare and submit a research paper as first author to a refereed journal, and defend the report orally.

Ph.D. Program. Doctoral candidates must show the capacity for independent, original research, and the doctoral thesis must be of a quality acceptable for publication in a reputable scientific journal.

Students normally are admitted to candidacy for the Ph.D. degree by satisfying the requirements for the M.S. degree in space physics and astronomy (see above). Students who already hold a recognized M.S. degree or who do not want to pursue a master's degree should follow the procedures described in the department booklet. Candidates who hold a M.S. degree could complete requirements for the Ph.D. in two years; otherwise it takes at least four years of graduate study (the average completion time has been 5.1 years). Candidates for the Ph.D. degree must successfully:

- Complete at least 60 semester hours of approved advanced course work/research
- Prepare a thesis on an original research topic
- Defend the thesis orally

See SPAC (pages 497–501) in the Courses of Instruction section.

Statistics

The George R. Brown School of Engineering

Chair
Katherine B. Ensor

Professors
John W. Brelsford, Jr.
Bryan W. Brown
Dennis Cox
Mahmoud El-Gamal
Don Herrick Johnson
Marek Kimmel
David W. Scott
Robin Sickles
James R. Thompson
Edward E. Williams
Rick K. Wilson

Professor Emeritus
Paul Pfeiffer

Adjunct Professors
Barry W. Brown
Ranajit Chakraborty
Thomas D. Downs
Ralph F. Frankowski
Richard Heydorn
Bartholomew P. Hsi
Dennis A. Johnston
Howard D. Thames, Jr.
Robert A. White
Stuart O. Zimmerman

Associate Professors
Joe Dan Austin
David M. Lane

Adjunct Associate Professors
E. Neely Atkinson
Carl S. Hacker

Assistant Professor
Keith A. Baggerly

Lecturers
Peter Olofsson
Michael Pearlman

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, political science, and psychology). Graduate study has concentrations in applied probability, biomathematics, data analysis, density estimation, epidemiology, image processing, model building, quality control, statistical computing, 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 17–19). Students majoring in statistics normally complete the following:

- MATH 101 and 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 72–73). 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 two (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 an original thesis, which they defend in a public oral examination.

Ph.D. Program. Candidates for the Ph.D. degree in statistics must:

- Complete 90 semester hours of approved course work
- Perform satisfactorily on preliminary and qualifying examinations
- Complete an original thesis with a public oral defense

See STAT (pages 508–511) 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 (page 512–513) in the Courses of Instruction section.

The Program for the Study of Women and Gender

Director
Paula Sanders

Professors
Jane Chance
Marcia J. Citron
Margret Eifler
Lynne Huffer
Anne C. Klein
Helena Michie
Daniel Sherman

Associate Professors
Peter C. Caldwell
Scott S. Derrick
Deborah A. Harter
Lucille P. Fultz
Colleen R. Lamos
Elizabeth Long
Susan Lurie
Carol E. Quillen
Julie M. Taylor

Assistant Professors
Jane Dailey
Betty Joseph
Kathryn Milun

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 17–19). 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*
- 1 capstone course
- At least 1 approved comparative course
- At least 1 approved theory course

Of the 8 remaining required courses, no more than 4 course may be from a single department. All students must work out their individual courses of study with their faculty advisers, and each student's course of study must be approved by the director of the major.

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.

I. Courses That Satisfy the Core Requirements

WGST 101 *Introduction to the Study of Women and Gender*
WGST 201 *Introduction to Lesbian and Gay Studies*
WGST 499 *Capstone Seminar: Independent Research in the Study of Women and Gender*

II. Courses That Satisfy the Comparative or Cross-Cultural Requirement

WGST 249 *Women Writers from 1400–1900*
WGST 342 *Women in Greece and Rome*
WGST 350 *Gender and Symbolism*
WGST 352 *Feminism and Nationalism*
WGST 354 *Survey: Chicano/a Poetry*
WGST 357 *Buddhism and the Female*
WGST 359 *Contemporary Women Filmmakers*
WGST 453 *Topics in African American Literature*
WGST 454 *German Women Authors*
WGST 455 *Women and Gender in Islamic Societies*
WGST 458 *Buddhist Meditation Theory: Women and Men*

III. Courses That Satisfy the Theory Requirement

WGST 407 *Introduction to Feminist Literary Theory and Criticism*
WGST 430 *Studies in Literary Criticism: Queer Theory*
WGST 460 *Feminist Social Thought*
WGST 480 *Feminist Literary Theory*

IV. Other Courses

WGST 214 *Introduction to Women's History*
WGST 215 *Women and Gender in Modern England*
WGST 233 *The Female Body in Contemporary Culture*
WGST 234 *A History of Women in America*
WGST 300 *Medieval Literature: Gender and Power in Old English Literature*
WGST 301 *Arthurian Literature*
WGST 305 *Chaucer*
WGST 311 *Society and the Sexes in Modern France*
WGST 314 *Introduction to Women's History*
WGST 324 *Sociology of Gender*
WGST 325 *Sociology of the Family*
WGST 326 *Sexuality and the Social Order*
WGST 327 *20th-Century Women Writers: Sex, Gender, and Modernism*
WGST 331 *Psychology of Gender*
WGST 332 *Self, Sex, and Society in Ancient Greece*
WGST 335 *The Lifecycle: A Biocultural View*
WGST 336 *History as a Cultural Myth*
WGST 337 *Feminist Issues: Witches, Saints, Soldiers, and Shrews: Women's Voices in the Renaissance*
WGST 338 *Gender and Society in Early Modern Europe*
WGST 402 *Feminist Issues: Gender and Immigration*
WGST 405 *Victorian Studies: Austen Only*
WGST 406 *Seminar: Christine De Pizan in 15th-Century England*
WGST 407 *Introduction to Feminist Literary Theory and Criticism*
WGST 411 *Masculinity and Literature on American Culture*
WGST 412 *Women and Women's Voices in French Literature*
WGST 415 *Conceptions of Family and Gender in Jewish History*

WGST 416 *History of Men in Britain, 1750–Present*
WGST 417 *Women in the American South*
WGST 419 *Sex and Group Identity, from Biblical Times to the Modern United States*
WGST 420 *Women and Gender in 19th-Century Europe*
WGST 421 *Seminar: Shakespeare and Difference*
WGST 430 *Studies in Literary Criticism: Queer Theory*
WGST 433 *Theories in Modernity/Post-Modernity*
WGST 439 *Women and Gender in Renaissance Italy*
WGST 440 *Women in Music*
WGST 441 *Hildegard of Bingen*
WGST 461 *Gender, War, and Representation in Modern France and England*
WGST 483 *Feminist Issues*
WGST 496 *Applied Women's and Gender Studies*
WGST 497 *Directed Reading in the Study of Women and Gender*
WGST 498 *Independent Study*

See WGST (pages 514–520) in the Courses of Instruction section.

Administration

President ..... Malcolm Gillis
Interim Provost ..... David Minter
Vice Provost for Research and Graduate Studies ..... Jordan Konisky
Vice Provost and University Librarian ..... Charles Henry
Associate Provost ..... Thomas J. Hochstettler
Associate Provost ..... Roland B. Smith, Jr.
Vice President for Student Affairs ..... Zenaido Camacho
Vice President for Finance and Administration ..... Dean W. Currie
Vice President for Information Technology ..... G. Anthony Gorry
Vice President for Investments and Treasurer ..... Scott W. Wise
Vice President for Enrollment ..... Ann Wright
Vice President for Public Affairs ..... Terry Shepard
Vice President for Resource Advancement ..... Eric C. Johnson
General Counsel ..... Shirley R. Redwine
Dean of the School of Humanities ..... Judith Brown
Dean of the George R. Brown School of Engineering ..... C. Sidney Burrus
Dean of the Shepherd School of Music ..... Michael Hammond
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.
Dean of Admissions and Records ..... Richard N. Stabell

Administrative Offices

Academic Advising ..... Mark Scheid
Administrative Computing ..... Randy Castiglioni
Admission ..... Julie Browning
Affirmative Action ..... Catherine Keneally
Alumni Association ..... Ann Greene
Athletics ..... John R. May
Career Services ..... Cheryl Matherly
Cashier ..... Patricia C. Ciampi
Controller ..... Evelyn Stewart
Counseling ..... Lindley Doran
Financial Aid ..... TBN
Food and Housing ..... Mark Ditman
Graduate Student Diversity ..... Richard A. Tapia
Health Education ..... Kimberly Lopez
Human Resources ..... Kyle Cavanaugh
Multicultural Affairs ..... Catherine E. Clack
Networking and Planning ..... Farrell E. Gerbode
Public Affairs ..... Janet McNeill
Registrar ..... TBN

Sponsored Research ..... Jean E. Vorhaben
Student Activities ..... Ramona Hicks
Student Health Services ..... Mark Jenkins, M.D.
University Police Department ..... Mary M. Voswinkel
User Services ..... Andrea Martin

College Masters

Baker College ..... James and Christiane Copeland
Brown College ..... Albert Pope and Kathrin Brunner
Hanszen College ..... Klaus and Eugenia Weissenberger
Jones College ..... Enrique and Maribel Barrera
Lovett College ..... Spike Gildea and Bonny Tibbitts
Richardson College ..... John and Penelope Bennett
Wiess College ..... John and Paula Hutchinson
Will Rice College ..... Dale and Elise Sawyer

Instructional and Research Staff

Emeritus Faculty

Akers, William Walter, 1947-93. Professor Emeritus in Chemical Engineering
B.S. (1943) Texas Technological College, M.S. (1944) University of Texas at Austin, Ph.D. (1950) University of Michigan

Andrews, John F., 1982-91. Professor Emeritus of Environmental Science and Engineering
B.S.C.E. (1951), M.S. (1954) University of Arkansas; Ph.D. (1964) University of California at Berkeley

Austin, Walter J., 1960-87. Professor Emeritus of Civil Engineering
B.S.C.E. (1941) Rice Institute; M.S. (1946), Ph.D. (1949) University of Illinois

Awapara, Jorge, 1957-84. Professor Emeritus of Biochemistry
B.S. (1941), M.S. (1942) Michigan State University; Ph.D. (1947) University of Southern California

Bailar, Benjamin F., 1987-97. H. Joe Nelson, III, Professor Emeritus of Administration
B.A. (1955) University of Colorado, M.B.A. (1959) Harvard Graduate School of Business Administration

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

Baker, Donald Roy, 1966. Professor Emeritus of Geology and Honorary Associate of Brown College
B.S. (1950) California Institute of Technology, Ph.D. (1955) Princeton University

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

Beckmann, Herbert W. K., 1957-85. Professor Emeritus of Mechanical Engineering
Cand. Ing. (1939), Dipl. Ing. (1944), Dr. Ing. (1957) Hanover University, Germany

Bixby, Robert E., 1984-98. Noah Harding Professor Emeritus of Computational and Applied Mathematics
B.S. (1968) University of California at Berkeley; M.S. (1971), Ph.D. (1972) Cornell University

Bland, Robert L., 1954-92. Professor Emeritus of Human Performance and Health Sciences
B.A. (1953) Central Washington State College, M.A. (1954) Columbia University

Boterf, Chester Arthur, 1973-93. Professor Emeritus of Art
B.A. (1959) Kansas University, M.F.A. (1965) Columbia University

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 Tsanoff, 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.A. (1955) University of California at Berkeley, M.A. (1958) Mills College, M.F.A. (1962) Princeton University

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

Clark, Howard Charles, 1966-88. Professor Emeritus of Geology and Geophysics
B.S. (1959) University of Oklahoma; M.A. (1965), Ph.D. (1967) Stanford University

Class, Calvin M., 1952-85. Professor Emeritus of Physics
A.B. (1943), Ph.D. (1951) Johns Hopkins University

Daichman, Graciela, 1973-1999. Lecturer Emerita of Spanish
Profesorado (1958) Instituto Nacional del Profesorado en Lenguas Vivas; M.A. (1975), Ph.D. (1983) Rice University

De Bremaecker, Jean-Claude, 1959-94. Professor Emeritus of Geology and Geophysics
Ingenieur Civil des Mines (1948) University of Louvain, Belgium; M.S. (1950) Louisiana State University; Ph.D. (1952) University of California at Berkeley

Dessler, Alexander J., 1963-93. Professor Emeritus of Space Physics and Astronomy
B.S. (1952) California Institute of Technology, Ph.D. (1956) Duke University

Dowden, Wilfred Sellers, 1948-87. Professor Emeritus of English and Honorary Associate of Baker College
B.A. (1939), M.A. (1940) Vanderbilt University; Ph.D. (1949) University of North Carolina

Drew, Katherine Fischer, 1950-96. Lynette S. Autrey Professor Emerita of History
B.A. (1944), M.A. (1945) Rice Institute; Ph.D. (1950) Cornell University

Estle, Thomas L., 1967-96. Professor Emeritus of Physics
B.A. (1953) Rice Institute; M.S. (1954), Ph.D. (1957) University of Illinois

Evans, Elinor Lucile, 1964-85. Albert K. and Harry W. Smith Professor Emerita of Architecture
B.A. (1938) Oklahoma State University, M.F.A. (1954) Yale University

Fliegel, Raphael, 1975-89. Professor Emeritus of Violin

Gardner, Gerald H. F., 1990-93. Professor Emeritus of Geophysics
B.S. (1948) Trinity College, Dublin; M.Sc. (1949) Carnegie Mellon University; Ph.D. (1953) Princeton University

Gordon, Chad, 1970-99. Professor Emeritus of Sociology
B.S. (1957), M.A. (1962), Ph.D. (1963) University of California at Los Angeles

Gordon, William E., 1965-85. Distinguished Professor Emeritus of Space Physics and Astronomy and of Electrical and Computer Engineering
B.A. (1939), M.A. (1942) Montclair State College; M.S. (1946), Ph.D. (1953) Cornell University

Hackerman, 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

Haymes, Robert C., 1968-98. Professor Emeritus of Space Physics and Astronomy
B.A. (1952), M.S. (1953), Ph.D. (1959) New York University

Hellums, Jesse David, 1960-98. 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

Heymann, Dieter, 1966-98. Professor Emeritus of Geology and Geophysics
M.S. (1954); Ph.D. (1958) University of Amsterdam, The Netherlands

Hodges, Lee, 1930-71. Professor Emeritus of French
B.S. (1930) Harvard University, M.A. (1934) Rice Institute

Holt, Edward C., 1956-93. Professor Emeritus of Civil Engineering
S.B. (1945), S.M. (1947) Massachusetts Institute of Technology; Ph.D. (1956) Pennsylvania State University

Huddle, Donald L., 1964-92. Professor Emeritus of Economics
B.S. (1959), M.A. (1960) University of California at Los Angeles; Ph.D. (1964) Vanderbilt University

Hyman, Harold M., 1968-97. William P. Hobby Professor Emeritus of History
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

Jones, Samuel, 1973-97. Professor Emeritus of Music
B.A. (1957) Millsaps College; M.A. (1958), Ph.D. (1960) Eastman School of Music, University of Rochester

Kiperman, Anita, 1976-98. Lecturer Emerita on Spanish
B.A. (1957) Universidad Nacional de Buenos Aires, M.A. (1971) University of Houston

Kobayashi, 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

Lamb, Sydney M., 1981-98. Agnes Cullen Arnold Professor Emeritus of Linguistics and Cognitive Sciences
B.A. (1951) Yale University, Ph.D. (1958) University of California at Berkeley

Leal, Maria Teresa, 1965-96. Professor Emerita of Spanish and Portuguese
B.A. (1946) Pontificia Universidade Catolica, Brazil; Ph.D. (1963) Universidade Federal

Lecuyer, Maurice Antoine, 1962-79. Professor Emeritus of French
Baccalaureat es lettres (1937), Licence es lettres (1943), Diplome d'etudes superieures (1944) Universite de Paris, France; Ph.D. (1954) Yale University

Leeds, Jr., J. Venn, 1964-89. Professor Emeritus of Electrical and Computer Engineering
B.A. (1955), B.S.E.E. (1956) Rice Institute; M.S.E.E. (1960), Ph.D. (1963) University of Pittsburgh; J.D. (1972) University of Houston

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
B.A. (1951) City College of New York; M.A. (1953), Ph.D. (1957) Brown University

Merwin, John E., 1955-98. Professor Emeritus of Civil Engineering
B.A. (1952), B.S.M.E. (1953), M.S.M.E.(1955) Rice Institute; Ph.D. (1962) University of Cambridge

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

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

Oliver, Covey, 1979-81. Radoslav A. Tsanoff Professor Emeritus of Public Affairs
B.A. (1933), J.D. (1936) University of Texas at Austin; LL.M. (1953), S.J.D. (1954) Columbia University; LL.D. (1976) Southern Methodist University

Oliver-Smith, Philip, 1969-82. Professor Emeritus of Art History
B.A. (1937), M.A. (1950) University of California at Berkeley; Ph.D. (1969) New York University

O'Neil, John F., 1965-80. Professor Emeritus of Art
B.F.A. (1936), M.F.A. (1939) University of Oklahoma

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

Pearson, Jr., James Boyd, 1965-99. J. S. Abercrombie Professor Emeritus in Electrical and Computer Engineering
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

Piper, William Bowman, 1969-1999. Professor Emeritus of English
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 Human Performance and Health Sciences
B.A. (1947) Rice Institute, B.S. (1949) University of Houston, M.A. (1950) University of Northern Colorado, Ed.D. (1957) Columbia University

Raaphorst, Madeleine Rousseau, 1963-89. Professor Emerita of French
Baccalaureat es lettres (1939) Universite de Poitiers, France; Licence en droit (1943) Universite de Paris, France; Ph.D. (1959) Rice Institute

Rachford, Jr., Henry H., 1964-82. Professor Emeritus of Mathematical Sciences
B.S. (1945), M.A. (1947) Rice Institute; Sc.D. (1950) Massachusetts Institute of Technology

Ransom, Jr., Harry Steelsmith, 1954-81. Professor Emeritus of Architecture
B.Arch. (1947) Carnegie Institute of Technology, M.Arch. (1967) Texas A&M University

Rath, R. John, 1963-80. Mary Gibbs Jones Professor Emeritus of History
A.B. (1932) Kansas, M.A. (1934) University of California at Berkeley, Ph.D. (1941) Columbia University

Risser, J. R., 1946-81. Professor Emeritus of Physics
A.B. (1931) Franklin and Marshall College; M.A. (1935), Ph.D. (1938) Princeton University

Sims, James R., 1942-87. Herman and George R. Brown Professor Emeritus of Civil Engineering
B.S. (1941) Rice Institute; M.S. (1950), Ph.D. (1956) University of Illinois

Stebbings, Ronald F., 1968-95. Professor Emeritus of Space Physics and Astronomy and of Physics
B.Sc. (1952), Ph.D. (1956) University College, London

Stormer, Jr., John C., 1983-95. Croneis Professor Emeritus of Geology
A.B. (1963) Dartmouth College, Ph.D. (1971) University of California at Berkeley

Thrall, Robert, 1969-84. Noah Harding Professor Emeritus of Mathematical Sciences and Professor Emeritus of Administrative Science
B.A., M.A. (1935) Illinois College; Ph.D. (1937) University of Illinois

Todd, Anderson, 1949-92. G. S. Wortham Professor Emeritus of Architecture
B.A. (1943), M.F.A. (1949) Princeton University

Topazio, Virgil William, 1965-83. Laurence H. Favrot Professor Emeritus of French
B.A. (1943) Wesleyan College; M.A. (1947), Ph.D. (1951) Columbia University

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

von der Mehden, Fred R., 1968-97. Albert Thomas Professor Emeritus of Political Science
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

Walker, James B., 1964-92. Professor Emeritus of Biochemistry and Cell Biology
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

Wilhoit, Jr., James Cammack, 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

Williams, George Guion, 1924-68. Professor Emeritus of English
B.A. (1923), M.A. (1925) Rice Institute

Wilson, Joseph B., 1954-98. Professor Emeritus of German
B.A. (1950), M.A. (1953) Rice Institute; Ph.D. (1960) Stanford University

Young, Richard D., 1965-92. Professor Emeritus of Economics and Mathematical Sciences
B.A. (1951), M.A. (1954) University of Minnesota; Ph.D. (1965) Carnegie Institute of Technology

Faculty

Aazhang, Behnaam, 1985. Professor in Electrical and Computer Engineering
B.S. (1981), M.S. (1983), Ph.D. (1986) University of Illinois

Achard, Michel, 1997. Assistant Professor of French Studies
B.A. (1983) University of Aix-en-Provence; M.A. (1987), Ph.D. (1993) University of California at San Diego

Adams, David L., 1988. Senior Faculty Fellow in Physics
B.S. (1980) California Institute of Technology; M.S. (1981), Ph.D. (1986) University of California at Los Angeles

Adve, Sarita V., 1993. Associate Professor in Electrical and Computer Engineering and Associate of Lovett College
B.S. (1987) Indian Institute of Technology; M.S. (1989), Ph.D. (1993) University of Wisconsin at Madison

Akin, John Edward, 1983. Professor of Mechanical Engineering and Computational and Applied Mathematics
B.S. (l964) Tennessee Polytechnic Institute, M.S. (1966) Tennessee Technological University, Ph.D. (1968) Virginia Polytechnic Institute

Albin, Veronica S., 1998. Lecturer in Hispanic and Classical Studies
B.A. (1989) University of Pennsylvania

Alcover, Madeleine, 1975. Professor of French
Licence de lettres modernes (1962), Diplôme d'études supérieures (1963), Doctorat de 3e cycle (1965) France

Alford, John R., 1985. Associate Professor of Political Science and Associate of Hanszen College
B.S. (1975), M.A. (1977) University of Houston; M.A. (1980), Ph.D. (1981) University of Iowa

Allen, Paul S., 1998. Adjunct Professor of Management
B.S. (1969) U.S. Merchant Marine Academy, M.S. (1978) State University of New York, M.B.A. (1996) Rice University

Ambler, John S., 1964. Professor of Political Science and Associate of Brown College
B.A. (1953) Willamette University; M.A. (1954) Stanford University; Certificat d'etudes politiques (1955) University of Bordeaux, France; Ph.D. (1966) University of California at Berkeley

Ambrose, Susan, 1996. Lecturer on Mechanical Engineering and Materials Science
B.S. (1987), M.S. (1989) Washington University; Ph.D. (1992) University of Texas at Austin

Anderson, John B., 1975. Professor of Geology and Geophysics
B.S. (1968) University of South Alabama, M.S. (1970) University of New Mexico, Ph.D. (1972) Florida State University

Anding, Roberta H., 1997. Lecturer in Human Performance and Health Sciences
B.S. (1977), M.S. (1980) Louisiana State University

Angel, Yves C., 1984. Associate Professor in Mechanica l Engineering and Associate of Brown College
B.S. (1976) Ecole Centrale De Lyon, France; M.S. (1977), Ph.D. (1980) University of California at Berkeley

Antoulas, Athanasios C., 1985. Professor in Electrical and Computer Engineering
Dip. in Electrical Engineering (1975), Dip. in Mathematics (1975), Ph.D. (1980) Eidgenösische Technische Hochschule, Switzerland

Anvari, Bahman, 1998. Assistant Professor in Bioengineering
B.A. (1985) University of California at Berkeley; M.S. (1988) California State University, Sacramento; Ph.D. (1993) Texas A&M University

Apple, Max I., 1972. Gladys Louise Fox Professor of English
B.A. (1963) University of Michigan, M.A. (1965) Stanford University, Ph.D. (1970) University of Michigan

Applegate, David, 1996. Associate Professor of Computational and Applied Mathematics
B.S. (1984) University of Dayton, Ph.D. (1991) Carnegie Mellon University

Aranda, Jr., Jose F., 1994. Assistant Professor of English and Associate of Wiess College
B.A. (1984) Yale University; M.A. (1988), Ph.D. (1994) Brown University

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 and Associate of Will Rice College
B.S. (1961) Northeastern University, M.S. (1967) Case Institute of Technology, Ph.D. (1969) Case Western Reserve University

Arpaly, Nomy, 1999. Assistant Professor of Philosophy
B.A. (1992) Tel-Aviv University, Ph.D. (1998) Stanford University

Atherholt, Robert, 1984. Associate Professor of Oboe
B.Mus. (1976), M.Mus. (1977) Juilliard School of Music

Atherton, Jr., W. Clifford, 1988. Lecturer on Management
B.A. (1971) Rice University; M.B.A. (1977), Ph.D. (1983) University of Texas at Austin

Atkinson, E. Neely, 1985. Adjunct Associate Professor of Statistics
B.A. (1975), M.A., Ph.D. (1981) Rice University

Attwell, Khleber, 1989. Adjunct Professor of Management
B.A. (1952) Rice University, M.P.H. (1982) University of Texas Health Science Center at Houston

Austgen, David M., 1997. Lecturer on Management
B.S. (1981) University of Notre Dame; M.S. (1983), Ph.D. (1989), M.B.A. (1996) University of Texas at Austin

Austin, Joe Dan, 1978. Associate Professor of Education and Statistics and Associate of Jones College
B.S. (in Applied Mathematics) (1966) Georgia Institute of Technology, M.S. (in Mathematical Statistics) (1968), Ph.D. (in Mathematics Education) (1972) Purdue University

Avé Lallemant, Hans G., 1970. Professor of Geology and Geophysics and Associate of Sid Richardson College
B.Sc. (1960), M.Sc. (1964), Ph.D. (1967) Leiden University, The Netherlands

Bachevalier, Jocelyne, 1994. Adjunct Associate Professor of Psychology
B.S. (1971) University of Montreal; M.S. (1972) University of Provence in Marseille, France; Doctorate (1975) University of Paris; Ph.D. (1981) University of Montreal

Badgwell, Thomas A., 1993. Assistant Professor of Chemical Engineering and Associate of Lovett College
B.S. (1982) Rice University; M.S. (1990), Ph.D. (1992) University of Texas at Austin

Baggerly, Keith A., 1996. Assistant Professor of Statistics and Associate of Brown College
B.A. (1990), M.A. (1993), Ph.D. (1994) Rice University

Bagozzi, Richard P., 1999. J. Hughes Liedtke Professor of Management
B.A. (1970) General Motors Institute, M.S. (1969) University of Colorado, M.B.A. (1972) Wayne State University, Ph.D. (1976) Northwestern University

Bailey, Nancy Gisbrecht, 1997. Lecturer on Vocal Literature
B.A. (1975) University of the Redlands; M.A. (1981), Ph.D. (1985) University of Southern California

Bailey, Walter B., 1982. Associate Professor of Musicology
B.Mus. (1976) Lewis and Clark College; M.A. (1979), Ph.D. (1982) University of Southern California

Baker, John A., 1999. Lecturer on Management
B.A. (1990), J.D. (1993) University of Houston; M.B.A. (1997) Rice University

Baker, Lovett, 1986. Lecturer on Management
A.B. (1952) Princeton University

Baker, Stephen D., 1963. Professor of Physics and Honorary Associate of Hanszen College
B.S. (1957) Duke University; M.S. (1959), Ph.D. (1963) Yale University

Banavalkar, Prabadh V., 1993. Lecturer on Civil Engineering
B.E. (1962) Indian Institute of Technology, Bombay, India; M.S. (1966) University of Illinois; Ph.D. (1970) Cornell University

Banks, Stephen J., 1991. Adjunct Professor of Management
B.S. (1962) Massachusetts Institute of Technology, M.B.A. (1967) Harvard University

Baraniuk, Richard G., 1992. Associate Professor in Electrical and Computer Engineering and Associate of Hanszen College
B.S. (1987) University of Manitoba, M.S. (1988) University of Wisconsin, Ph.D. (1992) University of Illinois

Barland, Ian, 1996. Lecturer on Computer Science
B.S. (1989) University of Utah; M.S. (1992), Ph.D.(1996) University of California Santa Cruz

Barlow, Michael, 1993. Assistant Professor of Linguistics, Associate Director of the Center for the Study of Languages, and Associate of Sid Richardson College
B.Sc. (1972) Liverpool University, M.Sc. (1973) Salford University, Ph.D. (1988) Stanford University

Barrera, Enrique V., 1990. Associate Professor of Mechanical Engineering and Materials Science and Jones College Master
B.S. (1979), M.S. (1985), Ph.D. (1987) University of Texas at Austin

Barrett, Deborah, 1998. Instructor of Communications
B.A. (1972), M.A. (1977) University of Houston; Ph.D. (1983) Rice University

Barron, Andrew R., 1995. Professor of Chemistry and Materials Science and Associate of Baker College
B.S. (1983), Ph.D. (1986) Imperial College of Science and Technology, University of London

Bartel, Bonnie, 1995. Assistant Professor of Biochemistry and Cell Biology and Associate of Wiess College
B.S. (1983) Bethel College, Ph.D. (1990) Massachusetts Institute of Technology

Bartnett, Robert Elliott, 1988. Adjunct Lecturer on Statistics
B.S. (1952) University of Florida

Barut, Yasar N., 1998. Assistant Professor of Economics.
B.S. (1990) Bogazici University, Turkey; M.S. (1997), Ph.D. (1998) Purdue University

Batsell, Richard R., 1980. Jesse H. Jones Distinguished Associate Professor of Management, Associate Professor of Psychology, and Associate of Hanszen College
B.A., B.B.A. (1971), Ph.D. (1976) University of Texas at Austin

Bayazitoglu, Yildiz, 1977. Harry S. Cameron Professor in Mechanical Engineering and Associate of Will Rice College
B.S. (1967) Middle East Technological University; M.S. (1969), Ph.D. (1974) University of Michigan

Baylor, Jim, 1999. Lecturer in Human Performance and Health Sciences
B.S. (1970) Sam Houston State University

Bearden, Frank W., 1954. Professor of Human Performance and Health Sciences
B.S. (1947) Texas Technological College; M.A. (1949), Ed.D. (1954) Columbia University

Beckingham, Kathleen, 1980. Professor of Biochemistry and Cell Biology
B.A. (1967), Ph.D. (1972) Cambridge University

Bedient, Philip B., 1975. Professor of Environmental Science and Engineering
B.S. (1969), M.S. (1972), Ph.D. (1975) University of Florida

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

Behar, Victor, 1998. Assistant Professor of Chemistry
B.S. (1990) University of California, Berkeley; M.S. (1993) Yale University; Ph.D. (1995) Columbia University

Behr, Marek, 1999. Assistant Professor in Mechanical Engineering and Materials Science
B.S. (1988), Ph.D. (1992) University of Minnesota

Bell, Michael, 1993. Associate Professor of Architecture
B.S. (1983) Catholic University of America, M. Arch. (1987) University of California at Berkeley

Bennett, George N., 1978. Professor of Biochemistry and Cell Biology and Associate of Lovett College
B.S. (1968) University of Nebraska, Ph.D. (1974) Purdue University

Bennett, John K., 1988. Associate Professor of Electrical and Computer Engineering and Associate of Wiess College and Sid Richardson College Master
B.S.E.E. (1973), M.E.E. (1974) Rice University; M.S. (1983), Ph.D. (1987) University of Washington

Bennett, Sherry, 1995. Assistant Professor of Political Science and Associate of Sid Richardson College
B.A. (1990), M.A. (1993), Ph.D. (1995) Michigan State University

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
B.S. (1961), M.S. (1965) Marshall University; Ph.D. (1970) Pennsylvania State University

Biln, Karma Singh (John), 1999. Associate Professor of Architecture
B.Arch. (1987) University of Idaho; M.A. (1989), Ph.D. (1991) Harvard University

Bixby, Robert E., 1984. Research Professor in Computational and Applied Mathematics and Associate of Baker College
B.S. (1968) University of California at Berkeley; M.S. (1971), Ph.D. (1972) Cornell University

Black, David C., 1970. Adjunct Professor of Space Physics and Astronomy
B.S. (1965), M.S. (1967), Ph.D. (1970) University of Minnesota

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 Architecture and Environmental Science
B.A. (1969), J.D. (1972) University of Texas at Austin; M.S. (1974) Rice University

Bledsoe, Robert S., 1994. Assistant Professor of German and Slavic Studies and Associate of Jones College
B.A. (1983), M.A. (1986), Ph.D. (1993) University of California at Berkeley

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. Assistant Professor of Religious Studies and Associate of Wiess College
B.A. (1987) Sioux Falls College; M.Div. (1989) North American Baptist Seminary; M.A. (1991) University of Iowa; Ph.D. (1995) University of Denver, Iliff School of Theology

Bonner, Billy E., 1985. Professor of Physics and Director of T. W. Bonner Nuclear Lab
B.S. (1961) Louisiana Polytechnic Institute; M.A. (1963), Ph.D. (1965) Rice University

Bor, Zsolt, 1990. Adjunct Professor in Electrical and Computer Engineering
B.A., M.A. (1973) Kiev, USSR; M.A. (1974), Ph.D. (1975) Jate University, Hungary

Borcea, Liliana, 1996. Assistant Professor of Computational and Applied Mathematics
B.S. (1987) University of Bucharest; M.S. (1994), Ph.D. (1996) Stanford University

Bordeaux, Janice, 1994. Adjunct Assistant Professor of Psychology and Brown College Associate
B.F.A. (1971) University of Illinois; M.A. (1978), Ph.D. (1983) Duke University

Bordelon, Jr., Cassius B., 1972. Lecturer on Human Performance and Health Sciences
B.S. (1964) Louisiana State University, Ph.D. (1972) Baylor College of Medicine

Boriek, Aladin M., 1997. Adjunct Assistant Professor in Computational and Applied Mathematics and Mechanical Engineering and Materials Science
B.Sc. (1980) Helwan Institute of Technology, Cairo, Egypt; M.Sc. (1984) University of Michigan; M.Sc. (1988), Ph.D. (1990) Rice University

Boshernitzan, Michael, 1982. Professor of Mathematics
B.A. (1971) Moscow University, U.S.S.R.; M.A. (1974) Hebrew University, Israel; Ph.D. (1981) Weizmann Institute of Science, Israel

Bottero, Jean-Yves, 1996. Adjunct Professor of Environmental Science and Engineering
Docteur d'Etat es Sciences Physiques (1979) Université de Nancy, France

Bourland, Hardy M., 1961. Lecturer on Electrical and Computer Engineering, Associate Dean of Engineering, and Director of Rice Engineering Design and Development Institute
B.S. (1955) Texas Technological College, S.M.E.E. (1957) Massachusetts Institute of Technology

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
B.S. (1976) University of Oregon; M.A. (1979), Ph.D. (1982) Michigan State University

Brandt, Anthony K., 1998. Assistant Professor of Composition
B.A. (1983) Harvard College, M.A. (1987) California Institute of the Arts, Ph.D. (1993) Harvard University

Brelsford, Jr., John W., 1970. Professor of Psychology and Statistics and Honorary Master of Brown College
B.A. (1960), M.A. (1961) Texas Christian University; Ph.D. (1965) University of Texas at Austin

Brito, Dagobert L., 1984. George A. Peterkin Professor of Political Economy and Associate of Wiess College
B.A. (1967), M.A. (1970), Ph.D. (1970) Rice University

Brody, Baruch, 1975. Professor of Philosophy
B.A. (1962) Brooklyn College; M.A. (1965), Ph.D. (1967) Princeton University

Broker, Karin L., 1980. Professor of Art and Associate of Lovett College
B.F.A. (1972) University of Iowa, M.F.A. (1980) University of Wisconsin at Madison

Brooks, Philip R., 1964. Professor of Chemistry and Associate of Lovett College
B.S. (1960) California Institute of Technology, Ph.D. (1964) University of California at Berkeley

Brooks, Wayne, 1985. Associate Professor of Viola
Diploma (1977) Curtis Institute of Music

Brown, Barry W., 1970. Adjunct Professor of Statistics
B.S. (1959) University of Chicago; M.S. (1961), Ph.D. (1963) University of California at Berkeley

Brown, Bryan W., 1983. Reginald Henry Hargrove Professor of Economics and Statistics and Associate of Will Rice College
B.A. (1969), M.A. (1972) Texas Tech University; Ph.D. (1977) University of Pennsylvania

Brown, David, 1996. Assistant Professor of Architecture
B.A. (1987) Brown University, M.A. (1990) University of California at Berkeley

Brown, David S., 1997. Assistant Professor of Political Science
B.A. (1984) Doane College; M.A. (1991), Ph.D. (1995) University of California at Los Angeles

Brown, James N., 1992. Professor of Economics and Associate of Jones College
B.A. (1973) University of Redlands; M.A. (1975), Ph.D. (1980) University of Chicago

Brown, Judith, 1995. Dean of Humanities and Allyn and Gladys Cline Professor of History and Associate of Baker College
B.A. (1968), M.A. (1971) University of California at Berkeley; Ph.D. (1977) Johns Hopkins University

Brown, Richard, 1984. Associate Professor of Percussion
B.M.E. (1969) Temple University, M.Mus. (1971) Catholic University of America

Browning, Logan D., 1990. Lecturer in Humanities
B.A. (1977) University of the South, M.A. (1980) Oxford University, Ph.D. (1991) University of North Carolina

Bryan, William J., 1982. Adjunct Professor of Human Performance and Health Sciences
B.A. (1971) Johns Hopkins University, M.D. (1975) Baylor College of Medicine

Bryant, John B., 1981. Henry S. Fox, Sr., Professor of Economics; Professor of Management; and Associate of Wiess College
B.A. (1969) Oberlin College; M.S. (1973), Ph.D. (1975) Carnegie Mellon University

Burnett, Sarah A., 1972. Associate Professor of Psychology and Associate of Jones College
B.S. (1966) Memphis State University; M.S. (1970), Ph.D. (1972) Tulane University

Burrus, C. Sidney, 1965. Dean of the George R. Brown School of Engineering, Maxfield and Oshman Professor of Engineering, Honorary Associate of Will Rice College, and Associate of Lovett College
B.A., B.S.E.E. (1958) Rice Institute; M.S. (1960) Rice University; Ph.D. (1965) Stanford University

Buyse, Leone, 1997. Professor of Flute
B.M. (1968) Eastman School of Music, Certificat d'Etudes (1970) Paris Conservatory, M.M. (1980) Emporia State University

Byrne, John H., 1994. Adjunct Professor of Psychology and Electrical and Computer Engineering
B.S. (1968), M.A. (1970), Ph.D. (1973) Polytechnic Institute, Brooklyn

Byrne, Michael, 1999. Assistant Professor of Psychology
B.A. (1991), B.S. (1991) University of Michigan; M.S. (1993), M.S. (1995), Ph.D. (1996) Georgia Institute of Technology

Caflisch, Anna B., 1983. Lecturer on Italian and Associate of Brown College
Liceo Classico J. Stellini, Udine, Italy; Dottore in Lettere (1958) Università del Sacro Cuore, Milan, Italy

Caldwell, Peter C., 1994. Associate Professor of History and Associate of Will Rice College
B.A. (1987) New York University; M.A. (1990), Ph.D. (1993) Cornell University

Camacho, Zenaido, 1994. Vice President for Student Affairs and Professor of Biochemistry and Cell Biology
B.A. (1968) Baylor University, Ph.D. (1970) University of Texas at Austin

Cameron, Guy N., 1992. Adjunct Professor of Ecology and Evolutionary Biology
B.A. (1963) University of California at Berkeley, M.A. (1965) California State University, Ph.D. (1969) University of California at Davis

Camfield, William A., 1969. Joseph and Joanna Nazro Mullen Professor of Art History and Associate of Jones College
A.B. (1957) Princeton University; M.A. (1961), Ph.D. (1964) Yale University

Campbell, James Wayne, 1959. Professor of Biochemistry and Cell Biology
B.S. (1953) Southwest Missouri State University, M.S. (1955) University of Illinois, Ph.D. (1958) University of Oklahoma

Cannady, William Tillman, 1964. Professor of Architecture
B.Arch. (1961) University of California at Berkeley, M.Arch. (1962) Harvard University

Caprette, David R., 1992. Lecturer on Ecology and Evolutionary Biology
B.S. (1974) Case Western Reserve University; M.S. (1979), Ph.D. (1982) Cleveland State University

Cardus, David, 1970. Adjunct Professor of Statistics
B.A., B.Sc. (1942) University of Montpellier, France; M.D. (1949) Barcelona Medical School, Spain

Carle, Alan, 1998. Faculty Fellow in Computational and Applied Mathematics
B.A. (1984), M.S. (1989), Ph.D. (1991) Rice University

Carnahan, Norman F., 1986. Adjunct Associate Professor in Chemical Engineering
B.S.Ch.E. (1965) University of Houston, Ph.D. (1971) University of Oklahoma

Carroll, Michael M., 1988. Burton J. and Ann M. McMurtry Professor of Engineering in Computational and Applied Mathematics
B.A. (1958), M.A. (1959) University College Galway; Ph.D. (1964) Brown University

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 and Associate of Hanszen College
B.A. (1971) Harvard College; M.A. (1973), Ph.D. (1973) Stanford University

Casbarian, John Joseph, 1973. Associate Dean of the School of Architecture and Professor of Architecture
B.A. (1969) Rice University, M.F.A. (1971) California Institute of the Arts, B.Arch. (1972) Rice University

Castañeda, James A., 1961. Professor of Spanish, and Honorary Master of Will Rice College
B.A. (1954) Drew University; M.A. (1955), Ph.D. (1958) Yale University

Cavallaro, Joseph R., 1988. Associate Professor in Electrical and Computer Engineering and Associate of Lovett College
B.S.E.E. (1981) University of Pennsylvania, M.S.E.E. (1982) Princeton University, Ph.D. (1988) Cornell University

Cavallini, Maria Felicia, 1995. Lecturer in Human Performance and Health Sciences
B.A. (1984) Rice University, M.A. (1986) University of Texas at San Antonio, Ph.D. (1997) University of Houston

Chae, Suchan, 1985. Associate Professor of Economics
B.S. (1978) Seoul National University, M.S. (1980) Jeonbuk National University, Ph.D. (1985) University of Pennsylvania

Chakraborty, Ravajit, 1996. Adjunct Professor of Statistics
B. Statistics (1967), M. Statistics (1968), Ph.D. (1971) Indian Statistical Institute

Chan, Anthony A., 1993. Associate Professor of Space Physics and Astronomy and Associate of Sid Richardson College
B.Sc. (1982), M.Sc. (1984) University of Auckland; M.A. (1986), Ph.D. (1991) Princeton University

Chance, Jane, 1973. Professor of English
B.A. (1967) Purdue University; M.A. (1968), Ph.D. (1971) University of Illinois

Chang, Yoosoon, 1995. Assistant Professor of Economics and Associate of Wiess College
B.A. (1989), B.S. (1990) University of Maryland; M.Phil. (1992), Ph.D. (1995) Yale University

Chapman, Walter G., 1990. Associate Professor in Chemical Engineering and Associate of Jones College
B.S. (1983) Clemson University, Ph.D. (1988) Cornell University

Chen, Lilly C. H., 1981. Lecturer on Chinese in the Center for the Study of Languages
B.A. (1961) National Taiwan University; M.A. (1969), Ph.D. (1974) University of Illinois

Chern, Shiing-shen, 1989. Adjunct Professor of Mathematics
B.S. (1930) Nankai University, M.S. (1934) Tsinghua University, Ph.D. (1936) University of Hamburg, Germany

Citron, Marcia J., 1976. Professor of Musicology and Associate of Brown College
B.A. (1966) Brooklyn College; M.A. (1968), Ph.D. (1971) University of North Carolina

Clark, Jr., John W., 1968. Professor in Electrical and Computer Engineering and Bioengineering
B.S. (1962) Christian Brothers College; M.S. (1965), Ph.D. (1967) Case Western Reserve University

Clayton, Donald D., 1994. Lecturer on Management
B.A. (1983), M.B.A. (1990) Rice University

Cloutier, Paul A., 1967. Professor of Space Physics and Astronomy
B.S. (1964) University of Southwestern Louisiana, Ph.D. (1967) Rice University

Cochran, Tim D., 1990. Professor of Mathematics and Associate of Wiess College
B.S. (1977) Massachusetts Institute of Technology; M.A. (1979), Ph.D. (1982) University of California at Berkeley

Colaco, Joseph P., 1975. Lecturer on Architecture
B.S. (1960) University of Bombay, India; M.S. (1962), Ph.D. (1965) University of Illinois

Colbert, Daniel, 1997. Faculty Fellow in Chemistry
B.A. (1984) Cornell University, Ph.D. (1990) University of Wisconsin

Collis, S. Scott, 1997. Assistant Professor in Mechanical Engineering and Materials Science and Associate of Jones College
B.S. (1990) University of Kansas; M.S. (1991), Ph.D. (1996) Stanford University

Colvin, Vicki L., 1996. Assistant Professor of Chemistry and Associate of Sid Richardson College
B.S. (1988) Stanford University, Ph.D. (1994) University of California at Berkeley

Comer, Krista, 1998. Lecturer on English
B.A. (1988) Wellesley College, Ph.D. (1996) Brown University

Connelly, Brian, 1984. Artist Teacher of Piano
B.Mus. (1980), M.Mus. (1983) University of Michigan

Cook, William J., 1995. Noah Harding Professor of Computational and Applied Mathematics
B.A. (1979) Rutgers University, M.S. (1980) Stanford University, Ph.D. (1983) University of Waterloo

Cooper, Bruce F., 1986. Lecturer on Biochemistry and Cell Biology
B.A. (1978) Kent State University, Ph.D. (1985) Rice University

Cooper, Keith D., 1990. Associate Professor of Computer Science and Associate of Brown College
B.S. (1978), M.A. (1982), Ph.D. (1983) Rice University

Copeland, James E., 1966. Professor of Linguistics and German and Baker College Master
B.A. (1961) University of Colorado, Ph.D. (1965) Cornell University

Corcoran, Marjorie D., 1980. Professor of Physics and Associate of Baker College
B.S. (1972) University of Dayton, Ph.D. (1977) Indiana University

Cox, Alan L., 1991. Associate Professor of Computer Science and Associate of Brown College
B.S. (1986) Carnegie Mellon University; M.S. (1988), Ph.D. (1991) University of Rochester

Cox, Dennis, 1992. Professor of Statistics
B.A. (1972) University of Colorado, M.S. (1976) University of Denver, Ph.D. (1980) University of Washington

Cox, Edward L., 1989. Associate Professor of History and Associate of Wiess College
B.A. (1970) University of the West Indies; M.A. (1973), Ph.D. (1977) Johns Hopkins University

Cox, Steve J., 1988. Professor of Computational and Applied Mathematics and Associate of Wiess College
B.S. (1982), M.S. (1983) Marquette University; Ph.D. (1988) Rensselaer Polytechnic Institute

Cramer, Evin Joyce, 1997. Adjunct Professor in Computational and Applied Mathematics
B.S. (1969) University of Wisconsin; M.A.T. (1970) John Hopkins University; Ph.D. (1977) University of Texas at Arlington

Cramez, Carlos A., 1988. Adjunct Professor of Geology and Geophysics
B.S. (1960) Universite de Porto, Ph.D. (1966) Universite de Neuchatel

Crowell, Steven G., 1983. Professor of Philosophy and Associate of Hanszen College
A.B. (1974) University of California at Santa Cruz, M.A. (1976) Northern Illinois University, Ph.D. (1981) Yale University

Crump, Caryn McQuilkin, 1986. Lecturer on Management
B.S. (1974) Indiana University, M.B.A. (1977) University of Chicago

Cunningham, Robert A., 1986. Lecturer on Mechanical Engineering and Materials Science
A.A. (1943) Schriner Institute; B.S.M.E. (1949), M.S.M.E. (1955) Rice Institute

Curl, Jr., Robert F., 1958. Professor of Chemistry and Associate of Lovett College
B.A. (1954) Rice Institute, Ph.D. (1957) University of California at Berkeley

Currall, Steven C., 1993. Associate Professor of Management and Psychology
B.A. (1982) Baylor University, M.Sc. (1985) London School of Economics, Ph.D. (1990) Cornell University

Cuthbertson, Gilbert Morris, 1963. Professor of Political Science and Resident Associate of Will Rice College
B.A. (1959) University of Kansas, Ph.D. (1963) Harvard University

Cyprus, Joel H., 1965. Lecturer on Electrical and Computer Engineering
B.A., B.S.E.E. (1959) Rice Institute; M.S. (1961), Ph.D. (1963) Rice University

Czerwinski, Mary P., 1989. Adjunct Assistant Professor of Psychology
B.A. (1981), M.A. (1983), Ball State University; Ph.D. (1988) Indiana University

Dailey, Jane, 1994. Assistant Professor of History and Associate of Hanszen College
A.B. (1987) Yale University; M.A. (1989), Ph.D. (1994) Princeton University

Dakoulas, Panajiotis (Panos) Christos, 1987. Associate Professor of Civil Engineering and Associate of Hanszen College
Diploma (1980) National Technical University of Athens, Greece; M.Sc. (1982), Ph.D. (1985) Rensselaer Polytechnic Institute

Daley, Michele J. 1994. Assistant Professor of Management
B.Com. (1985), LL.B. (1993) University of Queensland; M.S. (1992), Ph.D. (1995) University of Rochester

Datta, Evelyne D., 1987. Lecturer in French
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Davidson, Chandler, 1966. Professor of Sociology and Political Science
B.A. (1961) University of Texas at Austin; M.A. (1966), Ph.D. (1969) Princeton University

Davis, Philip W., 1969. Agnes Cullen Arnold Professor of Linguistics
B.A. (1961) University of Texas at Austin, Ph.D. (1965) Cornell University

Davis, Jr., Sam H., 1957. Professor in Chemical Engineering and Computational and Applied Mathematics and Associate of Jones College
B.A. (1952), B.S. (1953) Rice Institute; ScD. (1957) Massachusetts Institute of Technology

Dean, Nathaniel, 1998. Associate Professor of Computational and Applied Mathematics
B.S. (1978) Mississippi State University, M.S. (1983) Northeastern University, Ph.D. (1987) Vanderbilt University

deChambrier, Janet, 1997. Artist Teacher of Opera Studies
B.M. (1975), M.M. (1980) Northwestern University School of Music

Dennis, John E., 1979. Noah Harding Professor of Computational and Applied Mathematics
B.S. (1962), M.S. (1964) University of Miami; Ph.D. (1966) University of Utah

Derrick, Scott S., 1990. Associate Professor of English
B.A. (1975) Albright College, M.A. (1978) University of Chicago, Ph.D. (1987) University of Pennsylvania

Dharan, Bala G., 1982. J. Howard Creekmore Professor of Management and Associate of Baker College
B.Tech. (1973) Indian Institute of Technology, India; M.B.A. (1975) Indian Institute of Management, India; M.S. (1977), Ph.D. (1981) Carnegie Mellon University

Dickinson, Debra, 1993. Artist Teacher of Opera Studies
B.S. (1975) Northwestern University, M.A. (1991) Hunter College

Diddel, Roberta M., 1985. Adjunct Instructor of Psychology
B.A. (1976) Wesleyan University, Ph.D. (1989) Boston University

Dipboye, 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 Human Performance and Health Sciences
B.S. (1969), M.Ed. (1970) University of Houston; P.E.D. (1973) Indiana University

Djerejian, Edward P., 1994. Director of the James A. Baker III Institute for Public Policy and Robert and Janice McNair Professor of Public Policy
B.S. (1960), Doctor of Humanities (Hon.) (1992) Georgetown University

Dodds, Stanley A., 1977. Associate Professor of Physics and Associate of Wiess College
B.S. (1968) Harvey Mudd College, Ph.D. (1975) Cornell University

Dominey, Wallace J., 1998. Clinical Professor in Education
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Donelick, Raymond A., 1993. Adjunct Assistant Professor of Geology and Geophysics
B.S. (1983) University of Miami; M.S. (1986), Ph.D. (1988) Rensselaer Polytechnic Institute

Dongarra, Jack, 1988. Adjunct Professor in Computer Science
B.S. (1972) Chicago State University, M.S. (1973) Illinois Institute of Technology, Ph.D. (1980) University of New Mexico

Doody, Terrence Arthur, 1970. Professor of English and Associate of Lovett College
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Doran, Lindley E., 1991. Adjunct Associate Professor of Psychology
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Doughtie, Edward Orth, 1963. Professor of English
A.B. (1958) Duke University; A.M. (1960), Ph.D. (1964) Harvard University

Downs, Thomas D., 1971. Adjunct Professor of Statistics
B.S. (1960) Western Michigan University; M.P.H. (1962), Ph.D. (1965) University of Michigan

Dravis, Jeffrey J., 1987. Adjunct Associate Professor of Geology and Geophysics
B.S. (1971) St. Mary's University, M.S. (1977) University of Miami, Ph.D. (1980) Rice University

Driskill, Linda P., 1970. Professor of English and Management and Associate of Brown College
B.A. (1961), M.A. (1968), Ph.D. (1970) Rice University

Droxler, André W., 1987. Associate Professor of Geology and Geophysics and Resident Associate of Hanszen College
Diploma (1978) University of Neuchatel, Switzerland; Ph.D. (1984) University of Miami

Druschel, Peter, 1994. Assistant Professor of Computer Science and Associate of Baker College
Dipl.-Ing (1986) Fachhochschule, Germany; M.S. (1990), Ph.D. (1994) University of Arizona

Duck, Ian M., 1963. Professor of Physics
B.S. (1955) Queen's University, Canada; Ph.D. (1961) California Institute of Technology

Dudey, Marc Peter, 1990. Associate Professor of Economics and Associate of Sid Richardson College
B.A. (1980) University of Wisconsin at Madison, M.A. (1986) University of Southern California, Ph.D. (1984) Princeton University

Dufour, Reginald J., 1975. Professor of Space Physics and Astronomy and Associate of Brown College
B.S. (1970) Louisiana State University; M.S. (1971), Ph.D. (1974) University of Wisconsin at Madison

Dunbar, Robert B., 1981. Adjunct Professor of Geology and Geophysics
B.S. (1975) University of Texas at Austin, Ph.D. (1981) University of California at Berkeley

Dunning, F. Barry, 1972. Professor of Physics and of Space Physics and Astronomy and Associate of Jones College
B.Sc. (1966), Ph.D. (1969) University College, London

Durrani, Ahmad J., 1982. Professor of Civil Engineering and Associate of Jones College
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Dyson, Derek C., 1966. Professor of Chemical Engineering
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Eggert, Allen W. 1968. Lecturer on Human Performance and Health Sciences
B.S. (1963) Rice University, M.A. (1967) California Western University

Eifler, Margret, 1973. Professor of German and Slavic Studies and Associate of Hanszen College
B.A. (1962), M.A. (1964), Ph.D. (1969) University of California at Berkeley

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
B.S. (1984) Alexandria University, Egypt; M.A. (1990), Ph.D. (1991) Rice University

el-Dahdah, Fares, 1996. Assistant Professor of Architecture
B.F.A. (1986), B.Arch. (1987) Rhode Island School of Design; M.Arch. (1989), Doctor of Design Studies (1992) Harvard University

Elden, J. Maxwell, 1988. Adjunct Professor of Psychology
B.A. (1962) University of California at Berkeley; M.A. (1967) California State University at San Diego; M.A. (1971), Ph.D. (1976) University of California at Los Angeles

El-Gamal, Mahmoud A., 1998. Professor of Islamic Economics, Finance, and Management and Professor of Economics
B.A. (1983), M.A. (1985) American University, Cairo; M.S. (1985) Stanford University; Ph.D. (1988) Northwestern University

Ellison, Paul V. H., 1975. Professor of Double Bass
B.M.E. (1965) Eastern New Mexico University, M.M. (1966) Northwestern University

Emerson, Michael O., 1999. Associate Professor of Sociology
B.A. (1988) Loyola University of Chicago; M.A. (1990), Ph.D. (1991) University of North Carolina at Chapel Hill

Engel, Paul S., 1970. Professor of Chemistry and Associate of Jones College
B.S. (1964) University of California at Los Angeles, Ph.D. (1968) Harvard University

Engelhardt, Jr., Hugo Tristram, 1982. Professor of Philosophy
B.A. (1963), Ph.D. (1969) University of Texas at Austin; M.D. (1972) Tulane University School of Medicine

Ensor, Katherine Bennett, 1987. Professor of Statistics and Associate of Lovett College
B.S.E. (1981), M.S. (1982) Arkansas State University; Ph.D. (1986) Texas A&M University

Epner, Daniel 1996. Adjunct Assistant Professor in Bioengineering
B.A. (1982) Stanford University, M.D. (1986) Baylor College of Medicine

Epstein, Marc J., 1998. Visiting Professor of Management
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Erkip, Elza, 1999. Faculty Fellow in Electrical and Computer Engineering
B.S. (1990) Middle East Technical University, Turkey; M.S. (1993), Ph.D. (1996) Stanford University

Eskin, Suzanne G., 1982. Adjunct Professor in the Biomedical Engineering Laboratory
B.A. (1962), M.A. (1964) Rice University; Ph.D. (1969) University of Texas at Austin

Etnyre, Bruce R., 1984. Associate Professor of Human Performance and Health Sciences and Associate of Jones College
B.S. (1973) Valparaiso University, M.S. (1977) Purdue University, Ph.D. (1984) University of Texas at Austin

Evans, Gregory, 1998. Adjunct Associate Professor in Bioengineering
B.S. (1980) University of Southern California, M.D. (1985) University of Southern California School of Medicine

Fabian, Marian, 1998. Faculty Fellow in Biochemistry and Cell Biology
B.S. (1974) Charles University, Prague; Ph.D. (1981) Moscow State University

Farag, Hany, 1997. G. C. Evans Instructor of Mathematics
B.S. (1988) Ain Shams University; M.S. (1991) Washington University; M.S. (1997), Ph.D. (1997) Yale University

Farwell, Joyce, 1994. Professor of Voice
B.M.E. (1956), M.M.E. (1958) University of Oklahoma; D.M.A. (1976) College Conservatory of Music, University of Cincinnati

Faubion, James D., 1993. Associate Professor of Anthropology and Associate of Jones College
B.A. (1980) Reed College; M.A. (1984), Ph.D. (1990) University of California at Berkeley

Felleisen, Matthias, 1987. Professor of Computer Science
M.S. (1981) University of Arizona, Ph.D. (1987) Indiana University

Ferris, David, 1998. Assistant Professor of Musicology
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Few, Jr., Arthur A. 1970. Professor of Space Physics and Astronomy and Associate Professor of Environmental Science
B.S. (1962) Southwestern University, M.B.S. (1965) University of Colorado, Ph.D. (1969) Rice University

Finger, Jerry E., 1996. Adjunct Professor of Management
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Fischer, Jeanne K., 1992. Artist Teacher of Piano
B.Mus. (1971) Oberlin College, M.Mus (1977) New England Conservatory of Music

Fischer, Norman, 1992. Professor of Cello
B.Mus. (1971) Oberlin College

Fisher, Jr., Frank M., 1963. Professor of Biology and Associate of Jones College
B.A. (1953) Hanover College; M.S. (1958), Ph.D. (1961) Purdue University

Fisher, G. D., 1973. Adjunct Professor of Chemical Engineering
B.S. (1957) University of Texas at Austin, Ph.D. (1965) Johns Hopkins University

Flatt, Robert N., 1987. Adjunct Associate Professor of Management
B.A. (1969), M.E.E. (1970) Rice University; M.B.A. (1973) Harvard University

Fleming, Jeff, 1993. Associate Professor of Management
B.A. (1987) Cornell College; M.B.A. (1989), Ph.D. (1993) Duke University

Ford, Wally, 1982. Lecturer on Architecture
B.S. (1975), M.C.E. (1976) Rice University

Forman, Robin, 1987. Professor of Mathematics and Associate of Wiess College
B.A. (1981), M.A. (1981) University of Pennsylvania; Ph.D. (1985) Harvard University

Fox, Geoffrey, 1988. Adjunct Professor in Computer Science
B.A. (1964), M.A. (1968), Ph.D. (1967) Cambridge University

Frankowski, Ralph F., 1970. Adjunct Professor of Statistics
B.S. (1957), M.S. (1959) DePaul University; M.P.H. (1962), Ph.D. (1967) University of Michigan

Fraser, Matthew P., 1998. Assistant Professor in Environmental Science and Engineering
B.S. (1991) Carnegie Mellon University; M.S. (1993), Ph.D. (1997) California Institute of Technology

Fred, Herbert L., 1974. Adjunct Professor of Human Performance and Health Sciences
B.A. (1950) Rice Institute, M.D. (1954) Johns Hopkins University School of Medicine

Freeman, John W., 1964. Professor of Space Physics and Astronomy and Associate of Lovett College
B.S. (1957) Beloit College; M.S. (1961), Ph.D. (1963) University of Iowa

Friday, A. Randall, 1980. Lecturer on Accounting
B.B.A. (1973) University of Iowa, J.D. (1976) Stanford University

Fultz, Lucille P., 1990. Associate Professor of English and Associate of Jones College
A.B. (1959) Spelman College, M.A. (1968) University of Iowa, Ph.D. (1990) Emory University

Funk, Carolyn L., 1993. Assistant Professor of Political Science and Associate of Wiess College
A.B. (1984) Columbia University; M.A. (1988), Ph.D. (1991) University of California at Los Angeles

Gallant, Harmon, 1996. Lecturer on Human Performance and Health Sciences
B.A. (1971) Northwestern University, J.D. (1977) Illinois Institute of Technology/Chicago-Kent College of Law

Gao, Zhiyong, 1986. Associate Professor of Mathematics and Associate of Sid Richardson College
A.A. (1965) University of Florida, B.A. (1979) Fudan University, Ph.D. (1984) State University of New York at Stony Brook, M.D. (1969) Tulane University School of Medicine

Garson, Jr., Arthur, 1998. Adjunct Professor of Management
A.B. (1970) Princeton University, M.D. (1974) Duke University, M.P.H. (1992) University of Texas School of Public Health

Gayton, Raquel, 1996. Lecturer in Hispanic and Classical Studies
B.A. (1993), M.A. (1996) Rice University

Gehrig-Merz, Monika, 1994. Assistant Professor of Economics
M.A. (1988) Universitat Bonn, Ph.D. (1994) Northwestern University

George, Jennifer M., 1999. Professor of Management
B.A. (1977) Weslayan University; M.B.A. (1979), Ph.D. (1987) New York University

Georges, Eugenia, 1986. Associate Professor of Anthropology and Associate of Baker College
B.A. (1970) Florida Presbyterian College, M.A. (1971) Tulane University, Ph.D. (1985) Columbia University

Gessler, Mark D., 1991. Adjunct Associate Professor of Management
B.S. (1983) Slippery Rock University, M.B.A. (1988) University of Tennessee

Ghitalla, Armando, 1994. Professor of Trumpet
B.S. (1950) Juilliard School of Music, L.H.D. (Hon.) (1994) Illinois Wesleyan University

Ghorbel, Fathi, 1994. Associate Professor of Mechanical Engineering and Materials Science and Bioengineering
B.S. (1985) Pennsylvania State University, M.S. (1987) Carnegie Mellon University, Ph.D. (1991) University of Illinois

Gibson, Brian, 1996. Lecturer on Human Performance and Health Sciences and Resident Associate of Sid Richardson College
B.A. (1990), M.A. (1993), Ph.D. (1997) University of Texas at Austin

Gibson, Kathleen R., 1981. Adjunct Professor of Anthropology
B.A. (1963) University of Michigan; M.A. (1969), Ph.D. (1970) University of California at Berkeley

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 I., 1994. Assistant Professor of Biochemistry and Cell Biology
B.S. (1982) Stanford University, Ph.D. (1989) Cornell University

Gildea, Spike, 1993. Associate Professor of Linguistics and Lovett College Master
B.A. (1983), M.A. (1989), Ph.D. (1992) University of Oregon

Giles, Wayne Rodney, 1988. Adjunct Professor of Electrical and Computer Engineering
B.Sc. (1969), M.Sc. (1970) University of Alberta; M.Phil. (1971), Ph.D. (1974) Yale University

Gill, Jack M., 1998. Adjunct Professor of Management
B.S. (1958) Lamar University, Ph.D. (1962) Indiana University

Gillis, Malcolm, 1993. President and Ervin Kenneth Zingler Professor of Economics
B.A. (1962), M.A. (1963) University of Florida; Ph.D. (1968) University of Illinois

Glantz, Raymon M., 1969. Professor of Biochemistry and Cell Biology
B.A. (1963) Brooklyn College; M.S. (1964), Ph.D. (1966) Syracuse University

Glass, Graham P., 1967. Professor of Chemistry
B.S. (1960) Birmingham University, England; Ph.D. (1963) Cambridge University

Glowinski, Roland, 1986. Adjunct Professor of Computational and Applied Mathematics
Ph.D. (1970) University of Paris

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
B.M. (1966) George Peabody College for Teachers, M.A. (1968) Leland Stanford University

Gomer, Richard H., 1988. Associate Professor of Biochemistry and Cell Biology and Associate of Hanszen College
B.A. (1977) Pomona College, Ph.D. (1980) California Institute of Technology

Gordon, Richard, 1995. W. M. Keck Professor of Geology and Geophysics and Associate of Lovett College
B.A. (1975) University of California at Santa Cruz; M.S. (1977), Ph.D. (1979) Stanford University

Gorry, G. Anthony, 1976. Vice President for Information Technology and Professor of Computer Science
B.E. (1962) Yale University, M.S. (1963) University of California at Berkeley, Ph.D. (1967) Massachusetts Institute of Technology

Gottschalk, Arthur W., 1977. Associate Professor of Composition and Theory
B.Mus. (1974), M.A. (1975), D.M.A. (1978) University of Michigan

Goux, Jean-Joseph, 1990. Lawrence H. Favrot Professor of French
Licence de Philosophie (1965), D.E.S. Philosophie (1966), Doctorat du 3ème cycle de Philosophie (1973), Doctorat d'Etat es Lettres et Sciences Humaines (1988) Sorbonne, Paris

Goveas, Jacqueline, 1999. Assistant Professor in Chemical Engineering
B.S. (1991) University of Texas at Austin, Ph.D. (1996) Princeton University

Grandy, Richard E., 1980. Carolyn and Fred McManis Professor of Philosophy and Brown College Associate
B.A. (1963) University of Pittsburgh; M.A. (1965), Ph.D. (1968) Princeton University

Greanias, George, 1999. Lecturer on Management
B.A. (1970) Rice University, J.D. (1973) Harvard University

Greiner, John, 1997. Lecturer on Computer Science
B.A. (1989) Rice University; M.S. (1992), Ph.D. (1997) Carnegie Mellon University

Grob, Alan, 1961. Professor of English and Associate of Hanszen College
B.A. (1952) Utica College; M.A. (1957), Ph.D. (1961) University of Wisconsin at Madison

Groskreutz, Gema, 1998. Lecturer in Hispanic and Classical Studies
B.A. (1994) Universidad Complutense, M.A. (1998) Rice University

Gruber, Ira Dempsey, 1966. Harris Masterson, Jr., Professor of History and Associate of Hanszen College
A.B. (1955), M.A. (1959), Ph.D. (1961) Duke University

Grullon, Gustavo, 1998. Assistant Professor of Management
B.B.A. (1991) University of Puerto Rico, Ph.D. (1998) Cornell University

Gustin, Michael C., 1988. Associate Professor of Biochemistry and Cell Biology and Associate of Lovett College
A.B. (1974) Johns Hopkins University; Ph.D. (1981) Yale University

Hacker, Carl S., 1973. Adjunct Associate Professor of Statistics
B.S. (1963) College of William and Mary, Ph.D. (1968) Rice University

Halas, Naomi J., 1989. Professor in Electrical and Computer Engineering
B.A. (1980) La Salle College; M.A. (1984), Ph.D. (1986) Bryn Mawr College

Hamed, Maged M., 1998. Lecturer on Environmental Science and Engineering
B.S., M.S. Cairo University; Ph.D. (1995) Rice University

Hamm, Keith Edward, 1988. Professor of Political Science
A.B. (1969) Franklin and Marshall College, M.A. (1972) Florida Atlantic University, Ph.D. (1977) University of Wisconsin at Madison

Hammond, Michael P., 1986. Elma Schneider Professor of Music, Dean of the Shepherd School of Music, and Associate of Hanszen College
B.A. (1954) Lawrence University; Honors B.A. (1959), M.A. (1961) Oxford University; L.H.D. (Hon.) (1975) Lawrence University

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 Engineering
A.S. (1964), B.B.A.S. (1964), M.Ed. (1977) University of Houston

Hannan, John K., 1991. Adjunct Associate Professor of Management
B.A. (1975) Rice University, J.D. (1988) South Texas College of Law

Hannon, James P., 1967. Professor of Physics and Associate of Wiess College
B.A. (1962), M.A. (1965), Ph.D. (1967) Rice University

Hansz, Ingrid, 1987. Lecturer on Spanish
B.A. (1949) Universidad de la Republica, M.A. (1987) Rice University

Haque, Moyeen, 1988. Lecturer on Civil Engineering
B.S. (1978) Aligark Muslim University, M.S. (1982) University of Petroleum and Minerals, Ph.D. (1988) University of Texas

Harcombe, Elnora (Nonie), 1989. Clinical Professor of Education; Associate Director for Science, Mathematics, and Technology Education in the Center for Education; and Associate of Lovett College
B.S. (1967) University of Michigan; M.Phil. (1969), Ph.D. (1975) Yale University

Harcombe, Paul A., 1972. Professor of Ecology and Evolutionary Biology and Associate of Lovett College
B.S. (1967) Michigan State University, Ph.D. (1973) Yale University

Hardt, Robert M., 1988. W. L. Moody, Jr., Professor of Mathematics
B.S. (1967) Massachusetts Institute of Technology, Ph.D. (1971) Brown University

Harland, Peter W., 1989. Adjunct Professor of Chemistry
B.Sc. (1968) University of Wales, Aberystwyth; Ph.D. (1971) Edinburgh University

Harman, Thomas, 1988. Adjunct Associate Professor in Electrical and Computer Engineering
B.S.EE. (1965) University of Maryland, Ph.D. (1972) Rice University

Harrigan, Timothy P., 1994. Visiting Associate Professor in Mechanical Engineering and Materials Science
B.S. (1980), Sc.D. (1985) Massachusetts Institute of Technology

Harter, Deborah A., 1990. Associate Professor of French and Associate of Wiess College
B.A. (1973) University of California at Los Angeles; M.A. (1980), Ph.D. (1989) University of California at Berkeley

Hartigan, Patrick M., 1994. Assistant Professor of Space Physics and Astronomy and Associate of Will Rice College
B.S. (1981) University of Minnesota, Ph.D. (1987) University of Arizona

Hartley, Craig, 1998. Adjunct Professor in Bioengineering
B.S.E.E. (1966), Ph.D. (1970) University of Washington at Seattle

Hartley, Peter Reginald, 1986. Professor of Economics and Associate of Will Rice College
B.A. (1974), M.Ec. (1977) Australian National University; Ph.D. (1980) University of Chicago

Harvey, F. Reese, 1968. Edgar Odell Lovett Professor of Mathematics
B.S., M.A. (1963) Carnegie Institute of Technology; Ph.D. (1966) Stanford University

Haskell, Thomas L., 1970. Samuel G. McCann Professor of History
B.A. (1961) Princeton University, Ph.D.(1973) Stanford University

Hasker, Kevin, 1998. Assistant Professor of Economics
B.A. (1992) University of Wisconsin, Ph.D. (1998) Northwestern University

Hauge, Robert H., 1967. Distinguished Faculty Fellow in Chemistry
B.A. (1960) Loras College, Ph.D. (1965) University of California at Berkeley

Havens, Neil, 1964. Professor of Drama and Honorary Associate of Jones College
B.A. (1956) Rice Institute, M.A. (1959) Indiana University

Haverkamp, Eva, 1999. Assistant Professor of History
B.A. (1988), M.A. (1994) University of Cologne; Ph.D. (1999) University of Konstanz

Hebl, Michelle R., 1998. Assistant Professor of Psychology
B.A. (1991) Smith College, M.S. (1993) Texas A&M University, Ph.D. (1997) Dartmouth College

Heckelman, Elizabeth W., 1990. Lecturer in Education
B.A. (1973) Whitman College; M.A. (1980), Ph.D. (1985) Claremont Graduate School

Heeley, Michael B., 1999. Assistant Professor of Management
B.Eng. (1986) Camborne School of Mines, England; M.S. (1989) University of Nevada; M.S. (1994), Ph.D. (1996) University of Washington

Heilman, Mark A., 1998. Huxley Instructor in Ecology and Evolutionary Biology
B.S. (1992), Ph.D. (1998) University of Notre Dame

Heinkenschloss, Matthias, 1996. Associate Professor of Computational and Applied Mathematics
B.S. (1988), Ph.D. (1991) Universitat Trier, Germany

Heitman, Elizabeth, 1987. Adjunct Assistant Professor of Religious Studies
B.A. (1979), M.A. (1985), Ph.D. (1988) Rice University

Hellums, Jesse David, 1960. Research Professor in Chemical Engineering and Bioengineering and Associate of Wiess College
B.S. (1950), M.S. (1958) University of Texas at Austin; Ph.D. (1961) University of Michigan

Hemeyer, Terry, 1998. Adjunct Professor of Management
B.A. (1960) 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
M.Div. (1992) University of Heidelberg, Ph.D. (1997) Harvard University

Hescht, Billy W., 1998. Lecturer in Humanities
B.A. (1990) University of St. Thomas; M.A. (1992), Ph.D. (1993) University of Houston

Heydorn, Richard P., 1998. Adjunct Professor of Statistics
B.E.E. (1958), M.A. (1964) University of Akron; Ph.D. (1971) Ohio State University

Hightower, Joe W., 1967. Professor in Chemical Engineering and Associate of Baker College
B.S. (1959) Harding College; M.A. (1961), Ph.D. (1963) Johns Hopkins University

Hill, Thomas W., 1979. Distinguished Faculty Fellow in Space Physics and Astronomy
B.A. (1967), M.S. (1971), Ph.D. (1973) Rice University

Hirasaki, George J., 1989. A. J. Hartsook Professor in Chemical Engineering and Associate of Lovett College
B.S. (1963) Lamar University, Ph.D. (1967) Rice University

Hobby, William P., 1989. Radoslav A. Tsanoff Professor of Public Affairs
B.A. (1953) Rice Institute

Hochstettler, Thomas J., 1996. Adjunct Lecturer on History and Associate Provost
B.A. (1969) Earlham College; M.A. (1970), Ph.D. (1980) University of Michigan

Hockett, Charles F., 1991. Adjunct Professor of Linguistics and Adjunct Lecturer in Humanities
B.A. (1932), M.A. (1936) Ohio State University; Ph.D. (1939) Yale University

Hoebig, Desmond, 1994. Associate Professor of Cello
B.Mus. (1982), M.Mus. (1983) Juilliard School of Music

Hofri, Micha, 1995. Adjunct Professor in Computer Science
B.Sc. (1964), M.Sc. (1965) Technion-IIT, Haifa; D.Sc. (1972) Technion, Haifa

Holloway, Clyde, 1977. Professor of Organ
B.Mus. (1957), M.Mus. (1959) University of Oklahoma; S.M.D. (1974) Union Theological Seminary

Horton, Jr., Wendell, 1967. Adjunct Professor of Space Physics and Astronomy
B.S. (1963) University of Texas at Austin; M.S. (1965), Ph.D. (1967) University of California at San Diego

House, Waylon V., 1986. Adjunct Associate Professor of Chemical Engineering
B.S. (1966) Massachusetts Institute of Technology; M.S. (1969), Ph.D. (1974) University of Pittsburgh

Howell, William C., 1992. Adjunct Professor of Psychology
B.A. (1954), M.A. (1956), Ph.D. (1958) University of Virginia

Hsi, Bartholomew P., 1973. Adjunct Professor of Statistics
M.A. (1962), Ph.D. (1964) University of Minnesota

Huang, Huey W., 1973. Professor of Physics
B.S. (1962) National Taiwan University, Ph.D. (1967) Cornell University

Huberman, Brian Michael, 1975. Associate Professor of Art
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Hudspeth, C. M., 1947. Lecturer on Political Science and Associate of Wiess College
B.A. (1940) Rice Institute, J.D. (1946) University of Texas at Austin

Huffer, Lynne, 1998. Professor of French Studies
B.A. (1984) Ohio University; M.A. (1985), Ph.D. (1989) University of Michigan

Hughes, Joseph B., 1992. Associate Professor in Environmental Science and Engineering
B.S. (1986) Cornell College; M.S. (1989), Ph.D. (1992) University of Iowa

Hulet, Randall G., 1987. Professor of Physics and Associate of Jones College
B.S. (1978) Stanford University, Ph.D. (1984) Massachusetts Institute of Technology

Huston, J. Dennis, 1969. Professor of English
B.A. (1961) Wesleyan University; M.A. (1964), Ph.D. (1966) Yale University

Hutchinson, John S., 1983. Associate Professor of Chemistry and Wiess College Master
B.S. (1977), Ph.D. (1980) University of Texas at Austin

Iammarino, Nicholas K., 1978. Professor of Human Performance and Health Sciences, Associate of Sid Richardson College, and Premed Adviser
B.S. (1973) University of Dayton, M.Ed. (1975) University of Toledo, Ph.D. (1978) Ohio State University

Ikenberry, David L., 1990. Associate Professor of Management and Associate of Jones College
B.S. (1983) Pennsylvania State University, M.M. (1985) Northwestern University, Ph.D. (1990) University of Illinois

Isle, Walter Whitfield, 1962. Professor of English
A.B. (1955) Harvard University, M.A. (1957) University of Michigan, Ph.D. (1961) Stanford University

Jaber, Thomas I., 1988. Associate Professor of Music and Director of Choral Ensembles
B.M.E. (1974) Arkansas State University, M.Mus. (1976) Indiana University, Performer's Certificate (1977) Curtis Institute of Music

Jackson, Bradley, 1996. Lecturer on Management
B.S. (1983) University of Arkansas, M.S. (1987) University of Houston

Jain, Neelam, 1999. Assistant Professor of Management
B.A. (1984) St. Stephen's College, India; M.A. (1986), M.Phil. (1989) Delhi School of Economics; Ph.D. (1995) University of Minnesota

Jalbert, Pierre D., 1996. Assistant Professor of Composition and Theory
B.M. (1989) Oberlin Conservatory of Music, Ph.D. (1993) University of Pennsylvania

Jerger, Susan, 1989. Adjunct Professor of Psychology
B.A. (1961) University of Houston, M.S. (1963) Purdue University, Ph.D. (1986) Baylor College of Medicine

Jett, Quintus, 1998. Assistant Professor of Management
B.S. (1988) University of Pennsylvania; M.S. (1993), Ph.D. (1999) Stanford University

Jimenez, Carlos, 1997. Assistant Professor of Architecture
M.Arch. (1981) University of Houston

Johnson, Bruce R., 1994. Faculty Fellow in Chemistry
B.A. (1975) University of Minnesota, Ph.D. (1981) University of Wisconsin at Madison

Johnson, Don Herrick, 1977. Professor in Electrical and Computer Engineering and Statistics
S.B., S.M. (1970), E.E. (1971), Ph.D. (1974) Massachusetts Institute of Technology

Johnsson, S. Lennart, 1995. Adjunct Professor in Computer Science
Ingenjor (1963) Tekniska Gymnasiet, Vasteras, Sweden; M.S. (1967), Ph.D. (1970) Chalmers Insitute of Technology, Gothenburg, Sweden

Johnston, Dennis A., 1974. Adjunct Professor of Statistics
B.S. (1965) Arlington State College, M.A. (1966) University of Texas at Austin, Ph.D. (1971) Texas Tech University

Jones, Jr., B. Frank, 1962. Noah Harding Professor of Mathematics
B.A. (1958) Rice Institute, Ph.D. (1961) Rice University

Joseph, Betty, 1995. Assistant Professor of English and Associate of Will Rice College
B.A. (1985) University of Bombay, M.A. (1987) Jawaharlal Nehru University, M.A. (1989) Sysracuse University, Ph.D. (1995) University of Minnesota

Jump, J. Robert, 1968. Professor of Electrical and Computer Engineering and Honorary Master of Lovett College
B.S. (1960), M.S. (1962) University of Cincinnati; M.S. (1965), Ph.D. (1968) University of Michigan

Kamins, Benjamin C., 1987. Associate Professor of Bassoon

Kanatas, George, 1994. Jesse H. Jones Professor of Management
B.S. (1966) City College of New York, Ph.D. (1971) University of Kansas, Ph.D. (1978) Johns Hopkins University

Karff, Samuel E., 1979. Lecturer on Religious Studies
A.B. (1949) Gratz College of Jewish Studies; A.B. (1953) Harvard College; M.A.H.L. (1956), D.H.L. (1961) Hebrew Union College

Katz, Martha S., 1996. Professor of Viola
Curtis Institute of Music, Juilliard School of Music, Manhattan School of Music, University of Southern California

Katz, Paul C., 1996. Professor of Cello and Chamber Music
B.M. (1962) University of Southern California, M.M. (1964) Manhattan School of Music

Kauffmann, Robert Lane, 1976. Associate Professor of Spanish and Associate of Hanszen College
B.A. (1970) Princeton University, Ph.D. (1981) University of California at San Diego

Kaun, Kathleen, 1998. Professor of Voice
B.M. (1966) Indiana University, M.M. (1970) University of Texas

Kavraki, Lydia, 1996. Assistant Professor of Computer Science
B.S. (1989) University of Crete; M.S. (1992), Ph.D. (1995) Stanford University

Kecht, Maria-Regina, 1997. Associate Professor of German and Director of the Center for the Study of Languages
Teacher's Diploma (1978) Pushkin Institute, M.A. (1979) University of Illinois, Ph.D. (1982) Innsbruck University

Keeton, Darra, 1994. Associate Professor of Art and Art History and Associate of Lovett College
B.F.A. (1974) Miami University, Ohio; M.F.A. (1979) Queens College, New York

Kelber, Werner H., 1973. Isla Carroll Turner and Percy E. Turner Professor of Religious Studies
M.T. (1963) Princeton Theological Seminary; M.A. (1967), Ph.D. (1970) University of Chicago

Kemmer, Suzanne E., 1993. Associate Professor of Linguistics and Associate of Sid Richardson College
B.A. (1980) Rice University; M.A. (1985), Ph.D. (1988) Stanford University

Kendall, Richard P., 1981. Adjunct Professor of Computational and Applied Mathematics
B.A. (1963), M.A. (1969) University of Texas at Austin; M.A. (1970), Ph.D. (1972) Rice University

Kennedy, Jr., Kenneth W., 1971. Ann and John Doerr Professor in Computational Engineering
B.A. (1967) Rice University; M.S. (1969), Ph.D. (1971) New York University

Khoury, Dirar, 1998. Adjunct Assistant Professor in Electrical and Computer Engineering
B.S. (1987) Lousiana Tech University; M.S. (1989), Ph.D. (1993) Case Western Reserve University

Kimbrell, Deborah A., 1998. Senior Faculty Fellow in Biochemistry and Cell Biology
B.A. (1972) Mills College; Ph.D. (1985) University of California, Berkeley

Kimmel, Marek, 1990. Professor of Statistics
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Kinsey, James L., 1987. D. R. Bullard-Welch Foundation Professor of Science in the Department of Chemistry and Associate of Sid Richardson College
B.A. (1956), Ph.D. (1959) Rice Institute

Kirk, David E., 1982. Associate Professor of Tuba
B.M. (1982) Juilliard School of Music

Klein, Anne C., 1989. Professor of Religious Studies
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Klein, Lisa R., 1999. Assistant Professor of Management
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Klineberg, Stephen L., 1972. Professor of Sociology and Associate of Lovett College
B.A. (1961) Haverford College, M.A. (1963) University of Paris, Ph.D. (1966) Harvard University

Kloucek, Petr, 1996. Assistant Professor of Computational and Applied Mathematics
M.S. (1984), Ph.D. (1990) Charles University, Prague

Knightly, Edward W., 1996. Assistant Professor in Electrical and Computer Engineering
B.S. (1991) Auburn University; M.S. (1992), Ph.D. (1996) University of California at Berkeley

Knoll, Michael, 1989. Adjunct Associate Professor in the Biomedical Engineering Laboratory
B.S. (1977) State University of New York, M.D. (1981) Cornell University Medical College

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

Krishnan, Trichy V., 1997. Assistant Professor of Management
B.E. (1982) Madras University; M.A. (1992), Ph.D. (1994) University of Texas at Dallas

Krouskop, Thomas A., 1990. Adjunct Professor in Mechanical Engineering and Materials Science
B.A. (1967), M.A. (1969), Ph.D. (1971) Carnegie Mellon University

Krumwiede, Keith, 1999. Assistant Professor of Architecture
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Kulinowski, Kristen, 1998. Instructor of Chemistry
B.S. (1990) Canisius College; M.S. (1992), Ph.D. (1995) University of Rochester

Kulstad, Mark, 1975. Professor of Philosophy and Associate of Hanszen College
B.A. (1969) Macalester College, Ph.D. (1975) University of Michigan

Kumar, Piyush, 1996. Assistant Professor of Management
B.Tech. (1984) Indian Institute of Technology, M.B.A. (1986) Indian Institute of Management, Ph.D. (1996) Purdue University

Kurkjian, Andrew L., 1995. Adjunct Assistant Professor of Geology and Geophysics
B.S. (1975) Catholic University of America; M.S. (1978), Ph.D. (1982) Massachusetts Institute of Technology

Kwinter, Sanford, 1995. Associate Professor of Architecture
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Lairson, David Robert, 1977. Adjunct Associate Professor of Economics
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Lamos, Colleen R., 1989. Associate Professor of English
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Lane, David M., 1976. Associate Professor of Psychology and Statistics and Associate of Lovett College
B.A. (1971) Clark University, M.A. (1973) Tufts University, Ph.D. (1977) Tulane University

Lane, Neal, 1966. Professor of Physics
B.S. (1960), M.S. (1962), Ph.D. (1964) University of Oklahoma

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B.A. (1981) Carnegie Mellon University, M.A. (1986) Harvard University, Ph.D. (1998) Massachusetts Institute of Technology

Laughery, Kenneth R., 1982. Herbert S. Autrey Professor of Psychology
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Lavenda, Richard A., 1987. Associate Professor of Composition and Theory and Associate of Baker College
B.A. (1977) Dartmouth College, M.Mus. (1979) Rice University, D.M.A. (1983) University of Michigan

Lawrence, Patricia R., 1997. Lecturer on Management
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Lee, Benjamin, 1995. Professor of Anthropology
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Lee, Eva J., 1969. Professor of Human Performance and Health Sciences and Associate of Jones College
B.S. (1962) North Texas State University, M.Ed. (1967) Sam Houston State University, Ed.D. (1974) Louisiana State University

Leeman, William P., 1977. Professor of Geology and Geophysics
B.A. (1967), M.A. (1969) Rice University; Ph.D. (1974) University of Orgeon

Lenardic, Adrian, 1999. Assistant Professor of Geology and Geophysics
B.A. (1986) University of Wisconsin; M.S. (1990), Ph.D. (1995) University of California at Los Angeles

Lerup, Lars, 1993. Dean of the School of Architecture and Harry K. and Albert K. Smith Professor of Architecture
B. Arch. (1968) University of California at Berkeley, M. Arch. (1970) Harvard University

Levander, Alan R., 1984. Carey Croneis Professor of Geology and Geophysics and Resident Associate of Hanszen College
B.S. (1976) University of South Carolina; M.S. (1978), Ph.D. (1984) Stanford University

Liang, Edison P., 1991. Professor of Space Physics and Astronomy and Associate of Hanszen College
B.A. (1967), Ph.D. (1971) University of California at Berkeley

Lidvall, Christine A., 1988. Lecturer on Human Performance and Health Sciences
B.S. (1969) Northwestern University, M.A. (1983) University of Houston

Lindley, Juanita W., 1998. Lecturer in Human Performance and Health Sciences
B.A.T (1976) Sam Houston State University, M.S. (1978) James Madison University

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B.S. (1984), Ph.D. (1987) Queen's University of Belfast

Llope, William J., 1994. Faculty Fellow in Physics
B.A. (1986) University of Michigan, Ph.D. (1992) State University of New York at Stony Brook

Llusa, Pilar, 1997. Lecturer on Management and in Hispanic and Classical Studies
J.D. (1989) Universidad Autonoma, M.A. (1994) American University and Georgetown University

Lobel, Diana, 1997. Anna Smith Fine Assistant Professor of Judaic Studies
B.A. (1979) Oberlin College; M.S. (1982), Ph.D. (1995) Harvard University

Long, Elizabeth, 1978. Associate Professor of Sociology and Associate of Baker College
B.A. (1966) Stanford University; M.A. (1974), Ph.D. (1979) Brandeis University

Love, E. Geoffrey, 1996. Assistant Professor of Management
A.B. (1982), Ph.D. (1997) Harvard University

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, Associate Dean for Graduate Student Affairs, and Associate of Lovett College
B.A. (1969) State University of New York; M.A. (1972), Ph.D. (1989) University of California at Berkeley

Lust-Okar, Ellen, 1997. Assistant Professor of Political Science
B.A. (1988) Albion College; M.A. (1991), M.A. (1993), Ph.D. (1997) University of Michigan

Luttge, Adrian, 1999. Associate Professor of Geology and Geophysics
B.S. (1982), M.S. (1985) University of Carolo Wilhelmin, Germany; Ph.D. (1990) University of Tubingen

Maas, Michael, 1984. Associate Professor of History and Associate of Baker College
B.A. (1973) Cornell University; M.A. (1974), Ph.D. (1982) University of California at Berkeley

Mackie, Hilary S., 1993. Associate Professor of Classics and Associate of Baker College
B.A. (1987) Cambridge University, Ph.D. (1993) Princeton University

Makdisi, Ussama S., 1997. Assistant Professor of History
B.A. (1990) Wesleyan University; M.A. (1993), Ph.D. (1997) Princeton University

Malavis, Nicholas G., 1994. Lecturer on Communication
B.A. (1975), M.A. (1980) University of Houston; J.D. (1983) South Texas College of Law; Ph.D. (1994) Rice University

Malone, David R., 1983. Adjunct Lecturer in Double Bass
B.Mus. (1981), M.Mus. (1981) Rice University

Manca, Joseph, 1989. Associate Professor of Art and Art History and Associate of Will Rice College
B.A. (1978) University of Rochester; M.A. (1980), M.Phil. (1982), Ph.D. (1986) Columbia University

Mandel, James P., 1986. Lecturer on Management and Economics
B.S. (1967), M.B.A. (1969), Ph.D. (1973) University of Illinois

Marcus, George E., 1975. Professor of Anthropology
B.A. (1968) Yale University, Ph.D. (1976) Harvard University

Mardis, Jerlyn Leigh, 1988. Lecturer on Management
B.A. (1973), M.B.P.M. (1982) Rice University

Margolis, Eric, 1995. Assistant Professor of Philosophy
B.A. (1990) University of Maryland, Ph.D. (1995) Rutgers University

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. Professor of Psychology and Associate of Baker College
B.A. (1971) University of Oregon; M.S. (1977), Ph.D. (1979) Johns Hopkins University

Martin, William C., 1968. Harry and Hazel Chavanne Professor of Religion and Public Policy and Associate of Sid Richardson College
B.A. (1958), M.A. (1960) Abilene Christian University; B.D. (1963) Harvard Divinity School; Ph.D. (1969) Harvard University

Massey, Richard P., 1989. Lecturer on Electrical and Computer Engineering and Associate of Will Rice College
B.A. (1953), B.S. (1954) Rice Institute; M.S. (1962) Columbia University

Matherly, Cheryl A., 1992. Lecturer on Humanities
B.A. (1989) University of New Mexico, M.S. (1991) Indiana University

Matsuda, Seiichi P. T., 1995. Assistant Professor of Chemistry and of Biochemistry and Cell Biology and Associate of Brown College
B.A. (1984) Bethel College, Ph.D. (1994) Harvard University

Matteucci, Gianni, 1995. Adjunct Associate Professor of Geology and Geophysics
B.S. (1983), M.S. (1985) University of Bologna; Ph.D. (1991) Yale University

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
B.A. (1986) Colby College, Ph.D. (1998) University of Washington

Matusow, Allen Joseph, 1963. William Gaines Twyman Professor of History
B.A. (1958) Ursinus College; M.A. (1959), Ph.D. (1963) Harvard University

McArthur, C. Marshall, 1998. Lecturer in Chinese
B.A. (1983), M.A. (1987) Florida State University; Ph.D. (1999) University of Texas at Austin

McAshan, III, Robert B., 1998. Lecturer on Management
B.A. (1968) Rice University, M.B.A. (1972) University of Texas at Austin

McDonald, Edward D., 1990. Adjunct Professor of Management
B.S. (1962), M.S. (1964) Rice University

McEvilley, Thomas, 1969. Distinguished Lecturer on Art History
B.A. (1963) University of Cincinnati, M.A. (1965) University of Washington, Ph.D. (1968) University of Cincinnati

McIntire, Larry V., 1970. E. D. Butcher Professor of Bioengineering and Chemical Engineering
B.Ch.E., M.S. (1966) Cornell University; M.A. (1968), Ph.D. (1970) Princeton University

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 Keech, 1980. Professor of Anthropology
B.A. (1973) University of Pennsylvania; M.A. (1975) Girton College, Cambridge University; M.A. (1976), Ph.D. (1979) University of California at Santa Barbara

McKee, Herbert C., 1994. Lecturer in Chemical Engineering
B.S. (1942) Muskingum College; M.Sc., Ph.D. (1947, 1949) Ohio State University

McKenny, Gerald P., 1989. Associate Professor of Religious Studies and Associate of Wiess College
A.B. (1979) Wheaton University, M.Div. (1982) Princeton University, Ph.D. (1989) University of Chicago

McLellan, Rex B., 1964. Professor of Materials Science and Associate of Brown College
B.Met. (1957) Sheffield University, Ph.D. (1962) Leeds University

McMasters, Daniel N., 1998. Lecturer in Human Performance and Health Sciences
B.A. (1992) University of North Alabama, M.A. (1993) Northeast Louisiana University, Ph.D. (1998) Middle Tennessee State University

McNeil, Linda M., 1984. Associate Professor of Education and Associate of Jones College
B.A. (1966) Texas Tech University, M.A. (1968) Baylor University, Ph.D. (1977) University of Wisconsin at Madison

Meade, Andrew, J., 1989. Associate Professor of Mechanical Engineering
B.S. (1982) Rice University; M.S. (1984), Ph.D. (1989) University of California at Berkeley

Meakin, Christopher H., 1992. Lecturer on Administrative Science
B.B.A. (1983) Texas A&M University, J.D. (1987) University of Houston, M.A. (1988) Rice University

Meconi, Honey, 1987. Associate Professor of Musicology and Music History
A.B. (1974) Pennsylvania State University; A.M. (1980), Ph.D. (1986) Harvard University

Mellor-Crummey, John M., 1989. Senior Faculty Fellow in Computer Science
B.S.E. (1984) Princeton University; M.S. (1986), Ph.D. (1989) University of Rochester

Mérida-Jiménez, Rafael, 1998. Assistant Professor of Hispanic and Classical Studies
B.A. (1988), Ph.D. (1998) University of Barcelona

Mersereau, Rebecca, 1991. Assistant Professor of Art and Art History
B.A. (1978) Indiana University; M.A. (1982) University of Missouri; M.A. (1986), Ph.D. (1991) Bryn Mawr College

Merwin, John E., 1955. Research Professor of Civil Engineering
B.A. (1952), B.S.M.E. (1953), M.S.M.E. (1955) Rice Institute; Ph.D. (1962) University of Cambridge

Metzler, David S., 1997. G. C. Evans Instructor of Mathematics
B.A. (1992) Rice University, Ph.D. (1997) Massachusetts Institute of Technology

Michel, F. Curtis, 1963. Andrew Hays Buchanan Professor of Astrophysics in the Departments of Space Physics and Astronomy and of Physics
B.A. (1955), Ph.D. (1962) California Institute of Technology

Michie, Helena, 1990. Professor of English
B.A. (1979) Princeton University, Ph.D. (1984) University of Pennsylvania

Mieszkowski, Peter, 1981. Allyn R. and Gladys M. Cline Professor of Economics and Finance
B.S. (1957), M.A. (1959) McGill University; Ph.D. (1963) Johns Hopkins University

Miettinen, Hannu E., 1977. Professor of Physics
Fil. Kand. (1967), Fil. Lic. (1971) University of Helsinki; Ph.D. (1975) University of Michigan

Mikos, Antonios G., 1991. John W. Cox Professor of Bioengineering and Chemical Engineering and Associate of Sid Richardson College
Diploma (1983) Aristotle University of Thessaloniki, Greece; M.S. (1985), Ph.D. (1988) Purdue University

Milburn, Ellsworth, 1975. Professor of Composition and Theory and Associate of Baker College
B.A. (1962) University of California at Los Angeles; M.A. (1968) Mills College; D.M.A. College-Conservatory of Music, University of Cincinnati

Miller, Clarence A., 1981. Louis Calder Professor in Chemical Engineering and Associate of Baker College
B.A., B.S. (1961) Rice University; Ph.D. (1969) University of Minnesota

Miller, Michael, 1995. Adjunct Associate Professor in Bioengineering
B.S. (1978) University of Massachusetts, M.D. (1982) University of Massachusetts Medical School

Milun, Kathryn, 1991. Assistant Professor of Anthropology
B.A. (1978), M.A. (1988), Ph.D. (1991) University of Minnesota

Minter, David, 1990. Bruce and Elizabeth Dunlevie Professor of English
B.A. (1957), M.A. (1959) North Texas State University; B.D. (1961), Ph.D. (1965) Yale University

Mitchell, E. Douglas, 1981. Lecturer on Linguistics
B.A. (1952) Baylor University, Ph.D. (1966) University of Texas at Austin

Mittleman, Daniel, 1995. Faculty Fellow in Electrical and Computer Engineering and Associate of Sid Richardson College
B.S. (1988) Massachusetts Institute of Technology; M.S. (1990), Ph.D. (1994) University of California at Berkeley

Montague, P. Read, 1993. Adjunct Associate Professor in Computer Science
B.S. (1983) Auburn University, Ph.D. (1988) University of Alabama at Birmingham

Moore, Pat, 1996. Lecturer on Civil Engineering
B.A. (1952), B.S. (1953) Rice University

Moorhead, Louise C., 1986. Adjunct Assistant Professor of Chemical Engineering
B.A. (1969) University of South Florida, M.D. (1973) University of Florida

Morgan, Julia, 1999. Assistant Professor of Geology and Geophysics
A.B. (1987) Vassar College; Ph.D. (1993) Cornell University

Morgan, T. Clifton, 1987. Albert Thomas Professor of Political Science
B.A. (1978) University of Oklahoma; M.A. (1980), Ph.D. (1986) University of Texas at Austin

Morris, Wesley Abram, 1968. Professor of English
B.A. (1961), M.A. (1963) University of Kentucky; Ph.D. (1968) University of Iowa

Morrison, Donald Ray, 1988. Associate Professor of Philosophy and Resident Associate of Sid Richardson College
B.A. (1977) Carleton College, Ph.D. (1983) Princeton University

Moulin, Hervé, 1999. George A. Peterkin Professor of Economics
Agregation de Mathematiques (1971) Paris, France, Ph.D. (1975) University of Paris, France

Mucha, Waclaw, 1990. Lecturer in German and Slavic Languages
M.A. (1973) Jagiellonian University, Ph.D. (1982) Silesian University

Murphree, Dennis E., 1992. Lecturer on Management
B.A. (1969) Southern Methodist University, M.B.A. (1971) University of Pennsylvania

Murray, William B., 1992. Associate Professor of Voice
B.A. (1956) Adelphi University; Certificate (1958) Università de Perugia; Certificate (1958) Yale University School of Languages; Certificate (1960) Goethe Institut, Blaubeuren, Germany

Mutchler, Gordon S., 1968. Professor of Physics
B.S. (1960), Ph.D. (1966) Massachusetts Institute of Technology

Naficy, Hamid, 1993**.** Associate Professor of Art and Art History
B.A. (1968) University of Southern California; M.F.A. (1971), Ph.D. (1990) University of California at Los Angeles

Nagarajaiah, Satish, 1999. Associate Professor in Civil 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

Napier, H. Albert, 1983. Professor of Management and Psychology
B.A. (1966), M.B.A. (1968), Ph.D. (1971) University of Texas at Austin

Neagley, Linda E., 1993. Associate Professor of Art and Art History and Associate of Baker College
B.A. (1971) Russell Sage College; M.A. (1976), Ph.D. (1983) Indiana University

Nelson, Deborah Hubbard, 1974. Professor of French and Associate of Brown College
B.A. (1960) Wittenberg University; Certificat d'etudes Francaises, ler Degré (1961) University of Grenoble, France; M.A. (1964), Ph.D. (1970) Ohio State University

Newell, Charles J., 1993. Adjunct Assistant Professor in Environmental Science
B.S. (1978), M.S. (1981), Ph.D. (1989) Rice University

Newman, James H., 1985. Adjunct Associate Professor of Space Physics and Astronomy
B.A. (1978) Dartmouth College; M.A. (1982), Ph.D. (1984) Rice University

Niedzielski, Nancy A., 1999. Assistant Professor of Linguistics
B.S. (1987), M.A. (1989) Eastern Michigan University; Ph.D. (1997) University of California at Santa Barbara

Nikonowicz, Edward P., 1993. Associate Professor of Biochemistry and Cell Biology
B.S. (1985) St. Louis University, Ph.D. (1990) Purdue University

Nirenberg, David, 1992. Associate Professor of History and Associate of Hanszen College
B.A. (1986) Yale University; M.A. (1989), Ph.D. (1992) Princeton University

Nordgren, Ronald P., 1989. Herman and George R. Brown Professor of Civil Engineering and Mechanical Engineering and Materials Science and Associate of Will Rice College
B.S. (1957), M.S. (1958) University of Michigan; Ph.D. (1962) University of California at Berkeley

Nordlander, Peter, 1989. Professor of Physics
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B.S. (1988) University of Tehran; M.A.Sc. (1991) University of Windsor, Canada; Ph.D. (1996) University of Illinois at Urbana–Champaign

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B.S. (1964) Villanova University, M.S. (1966) Case Institute of Technology

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Odhiambo, Atieno, 1988. Professor of History
B.A. (1970) Makerere University College, Ph.D. (1973) University of Nairobi

Ohno, Yuka, 1997. Assistant Professor of Economics
B.A. (1990) Aoyama Gakuin University, Ph.D. (1993) University of Washington

Olofsson, Peter, 1996. Lecturer on Statistics
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Olson, John Steven, 1973. Ralph and Dorothy Looney Professor of Biochemistry and Cell Biology and Associate of Hanszen College
B.S. (1968) University of Illinois, Ph.D. (1972) Cornell University

Osherson, Daniel, 1997. Lynette S. Autrey Professor of Psychology
B.A. (1970) University of Chicago; M.A. (1971), Ph.D. (1973) University of Pennsylvania

Ostdiek, Barbara, 1994. Assistant Professor of Management and Associate of Wiess College
B.A. (1986) University of Nebraska, Ph.D. (1994) Duke University

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B.A. (1988), M.A. (1990) University of Nebraska; Ph.D. (1995) University of North Carolina

O'Sullivan, Elizabeth C., 1993. Lecturer on Communication
B.A. (1978) Gettysburg College, M.B.A. (1982) Texas A&M University

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. Faculty Fellow in Physics
B.S. (1981) York University; M.S. (1984), Ph.D. (1987) University of Toronto

Page, Paula, 1985. Associate Professor of Harp
B.Mus. (1969) Cleveland Institute of Music

Palmer, Graham A., 1974. Professor of Biochemistry and Cell Biology and Associate of Sid Richardson College
B.S. (1957), Ph.D. (1962) University of Sheffield

Papakonstantinou, Anne, 1993. Clinical Professor of Education
B.A. (1969), M.A. (1971) Rice University, Ed.D. (1992) University of Houston

Parke, Jr., Robert B., 1998. Adjunct Professor of Management
B.S. (1970) Spring Hill College, M.D. (1973) Baylor College of Medicine, M.B.A. (1993) Rice University

Parry, Ronald J., 1978. Professor of Chemistry
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 and Associate of Brown College
B.A. (1979) Brandeis University, M.Div. (1982) Yale University, Ph.D. (1993) University of Chicago

Paslay, Paul R., 1991. Adjunct Professor in Mechanical Engineering and Materials Science
B.S. (1950) Louisiana State University, M.S. (1952) Rice Institute, Sc.D. (1955) Massachusetts Institute of Technology

Pasquali, Matteo, 1999. Assistant Professor in Chemical Engineering
M.S. (1992) University of Bologna, Ph.D. (1998) University of Minnesota

Patrick, Charles, 1998. Adjunct Assistant Professor in Bioengineering
B.S.Ch.E. (1990) Louisiana State University, Ph.D. (1994) Rice University

Pattanayak, Arjendu, K., 1998. Instructor of Physics
B.S. (1986) St. Stephens College, India; M.S. (1988) Brown University; Ph.D. (1994) University of Texas

Patten, Robert L., 1969. Lynette S. Autrey Professor in Humanities
B.A. (1960) Swarthmore College; M.A. (1962), Ph.D. (1965) Princeton University

Pauls, Scott, 1998. G. C. Evans Instructor of Mathematics
A.B. (1992) Columbia University, Ph.D. (1998) University of Pennsylvania

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

Pearlman, Michael, 1980. Lecturer on Computational and Applied Mathematics and Statistics
B.Sc. (1975) Carleton University, Canada; M.S. (1978) Cornell University

Pearson, Deborah A., 1991. Adjunct Associate Professor of Psychology
B.A. (1979) Wesleyan University; M.A. (1982), Ph.D. (1986) Rice University

Pearson, Jr., James Boyd, 1965. J. S. Abercrombie Professor in Electrical and Computer Engineering
B.S.E.E. (1958), M.S.E.E. (1959) University of Arkansas; Ph.D. (1962) Purdue University

Peck, David, 1993. Associate Professor of Clarinet
B.Mus. (1973) University of Southern California

Perez, J. Bernardo, 1979. Associate Professor of Spanish and Associate of Sid Richardson College
Licenciatura (1972) Universidad de Granada, Spain; M.A. (1974), Ph.D. (1982) University of Iowa

Perry, John, 1983. Artist Teacher, Piano
B.Mus. (1956), M.Mus. (1957) Eastman School of Music, University of Rochester

Peters, Albert W., 1983. Lecturer on Human Performance and Health Sciences

Phenix, Linda G., 1981. Instructor of Human Performance and Health Sciences
B.F.A. (1977) University of Texas at Austin, M.A. (1978) Sam Houston State University

Phillips, Jr., George N., 1987. Professor of Biochemistry and Cell Biology
B.A. (1974), Ph.D. (1976) Rice University

Pier, Stanley M., 1974. Adjunct Associate Professor of Environmental Science
B.S. (1948) Brooklyn College, Ph.D. (12952) Purdue University

Pitts, Timothy, 1992. Associate Professor of Double Bass
B.Mus. (1981) New England Conservatory of Music

Platner, Edward B., 1996. Distinguished Faculty Fellow in Physics
B.A. (1956) Walla Walla College; M.S. (1961), Ph.D. (1961) University of Washington

Polking, John C., 1968. Professor of Mathematics and Associate of Baker College
B.S. (1956) University of Notre Dame; M.S. (1961), Ph.D. (1966) University of Chicago

Pomerantz, James R., 1988. Professor of Psychology and Director of the Neuroscience Program
B.A. (1968) University of Michigan, Ph.D. (1974) Yale University

Pope, Albert H., 1986. Gus Sessions Wortham Associate Professor of Architecture and Brown College Master
B.Arch. (1978) Southern California Institute of Architecture, M.Arch. (1986) Princeton University

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Kandidaats (1971), Doctoral (Physical Chemistry & Economics) (1975), Ph.D. (1981), State University of Groningen, The Netherlands

Potts, Geoffrey, 1998. Assistant Professor of Psychology
B.A. (1989), M.S. (1991), Ph.D. (1994) University of Oregon

Poulos, Basilios N., 1975. Professor of Art and Associate of Brown College
B.F.A. (1965) Atlanta School of Art, M.F.A. (1968) Tulane University

Price, Maureen G., 1993. Lecturer on Biochemistry and Cell Biology
B.A. (1973) Goucher College, Ph.D. (1980) University of Maryland

Pyung-Soo, Kim, 1981. Lecturer on Human Performance and Health Sciences
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Qian, Nanxiu, 1993. Assistant Professor of Linguistics and Associate of Lovett College
M.A. (1982) Nanjing University, Ph.D. (1994) Yale University

Queller, David C., 1989. Professor of Ecology and Evolutionary Biology and Associate of Wiess College
B.A. (1976) University of Illinois; M.S. (1978), Ph.D. (1982) University of Michigan

Quillen, Carol E., 1989. Associate Professor of History
B.A. (1983) University of Chicago, Ph.D. (1991) Princeton University

Quiñones, Miguel A., 1993. Associate Professor of Psychology and Management and Associate of Baker College
B.A. (1987) Texas A&M University; M.A. (1991), Ph.D. (1993) Michigan State University

Quiocho, Florante A., 1972. Adjunct Professor of Biochemistry and Cell Biology
B.S. (1959) Central Philippine University, M.S. (1961) Howard University, Ph.D. (1966) Yale University

Rabson, Thomas Avelyn, 1959. Professor of Electrical and Computer Engineering
B.A. (1954), B.S.E.E. (1955), M.A. (1957), Ph.D. (1959) Rice Institute

Rachleff, Larry, 1991. Associate Professor of Conducting
B.S. (1977) University of Connecticut, M.M. (1979) University of Michigan

Ramnath, Sundaresh, 1997. Assistant Professor of Management
B.Com. (1981) University of Madras, M.A. (1990) Northern Illinois University, Ph.D. (1996) Pennsylvania State University

Rarick, Janet, 1992. Artist Teacher of Wind Ensembles
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Rau, Carl, 1983. Professor of Physics
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Rea, Joan, 1968. Associate Professor of Spanish and Portuguese
B.A. (1954) New York University, M.A. (1964) University of Houston, Ph.D. (1970) University of Texas at Austin

Reiff, Patricia H., 1992. Professor of Space Physics and Astronomy and Associate of Brown College
B.S. (1971) Oklahoma State University; M.S. (1974), Ph.D. (1975) Rice University

Reiser, Stanley J., 1983. Adjunct Professor of Religious Studies
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Reuben, Jeffrey D., 1988. Adjunct Associate Professor in Mechanical Engineering and Materials Science
B.S.M.E. (1973) Lehigh University; M.D., Ph.D. (1973-1981) Case Western Reserve University

Riese, W. C. Rusty, 1985. Adjunct Associate Professor of Geology and Geophysics
B.S. (1973) New Mexico Institute of Mining and Technology; M.S. (1977), Ph.D. (1980) University of New Mexico

Rifai, Hanadi S., 1989. Adjunct Assistant Professor
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Rimberg, Alexander J., 1997. Assistant Professor of Physics
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Risser, William L., 1988. Adjunct Professor of Human Performance and Health Sciences
B.A. (1960) Harvard College, M.A. (1968) Harvard University, M.D. (1972) Yale Medical School

Ritscher, Karen, 1999. Associate Professor of Viola
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Robert, Marc A. 1984. Professor in Chemical Engineering
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Roberts, Jr., Jabus B., 1975. Professor of Physics
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Rodarte, Joseph R., 1990. Adjunct Professor in Mechanical Engineering and Materials Science and Bioengineering
B.A. (1960) Rice Institute, M.D. (1964) Harvard Medical School

Rohrer, Leslie J., 1998. Lecturer on Management
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Rosenau, Pauline M. V., 1995. Adjunct Associate Professor in the School of Social Sciences
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Ross, III, David, 1979. Adjunct Professor of Management
B.A. (1962) Yale University, M.B.A. (1970) Harvard University

Roush, Sherrilyn, 1999. Assistant Professor of Philosophy
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Roux, Robert, 1990. Associate Professor of Piano and Chair of Keyboard
B.Mus. (1970) Loyola University; M.Mus. (1978), D.M.A. (1980) University of Texas at Austin

Rudolph, Frederick B., 1972. Ralph and Dorothy Looney Professor of Biochemistry and Cell Biology
B.S. (1966) University of Missouri, Ph.D. (1971) Iowa State University

Russo, Steven S., 1998. Lecturer on Management
B.B.A. (1987) University of Texas at Austin, M.B.A. (1993) Rice University

Ryan, Frank, 1990. Professor of Mathematics and Computational and Applied Mathematics
B.S. (1958), M.S. (1961), Ph.D. (1965) Rice University

Sachs, Eric, 1998. Lecturer on Computer Science
B.A. (1993) Rice University

Salas, Marcela, 1995. Lecturer in Hispanic and Classical Studies
B.S. (1987) Instituto Superior de Profesorado M. Acosta, M.A. (1995) Rice University

Samuels, Danny M., 1981. Visiting Professor of Architecture
B.Arch. (1971) Rice University

San, Ka-Yiu, 1984. Professor in Bioengineering and Chemical Engineering and Associate of Sid Richardson College
B.S. (1978) Rice University, Ph.D. (1984) California Institute of Technology

Sanborn, Hugh W., 1973. Adjunct Assistant Professor of Religious Studies
A.B. (1962) Muhlenberg College, B.D. (1967) Andover Newton Theological Seminary, Ph.D. (1975) University of Iowa

Sanborn, Robert D., 1989. Lecturer on Humanities
B.A. (1980) Florida State University, M.S. (1985) Northern Illinois University

Sanders, Betty S., 1988. Adjunct Assistant Professor of Psychology
B.A. (1965) Central State University, M.A. (1978) Framingham State College, Ph.D. (1984) Rice University

Sanders, Paula, 1987. Associate Professor of History
B.A. (1977) Northwestern University; M.A. (1981), Ph.D. (1984) Princeton University

Sass, Ronald L., 1958. Professor of Ecology and Evolutionary Biology, Chemistry, and Education and Honorary Associate of Hanszen College and Associate of Jones College
A.B. (1954) Augustana College, Ph.D. (1957) University of Southern California

Sato, Hiroko, 1996. Lecturer on Japanese
B.A. (1977) Obilin College, Japan; M.A. (1981) University of Michigan

Sawyer, Dale S., 1988. Professor of Geology and Geophysics and Will Rice College Master
B.S. (1976) Purdue University, Ph.D. (1982) Massachusetts Institute of Technology

Schafer, Andrew I., 1989. Adjunct Professor in the Biomedical Engineering Laboratory
B.A. (1969) Northeastern University, M.D. (1973) University of Pennsylvania

Schneider, David J., 1989. Professor of Psychology
B.A. (1962) Wabash College, Ph.D. (1966) Stanford University

Schnietz, Karen Elisabeth, 1994. Assistant Professor of Management
B.A. (1982) Bryn Mawr College; M.B.A. (1991), Ph.D. (1994) University of California at Berkeley

Schnoebelen, Anne, 1974. Joseph and Ida Kirkland Mullen Professor of Music
B.A. (1958) Rosary College; M.Mus. (1960), Ph.D. (1966) University of Illinois

Schuler, Douglas A., 1992. Associate Professor of Management
B.S. (1985) University of California at Berkeley, Ph.D. (1992) University of Minnesota

Schweingruber, Heidi, 1999. Adjunct Instructor of Psychology
B.A. (1989), M.A. (1993), Ph.D. (1997) University of Michigan at Ann Arbor

Scott, David W., 1979. Professor of Statistics
B.A. (1972), M.A., Ph.D. (1976) Rice University

Scott-Burden, Timothy, 1998. Adjunct Associate Professor in Bioengineering
B.Sc.Agric. (1966) Natal, South Africa; Ph.D. (1971) London, England

Scuseria, Gustavo E., 1989. 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. (1953) Yale University; M.S. (1958), M.D. (1959) University of Portland Medical School

Sedlak, John M., 1990. Lecturer on Civil Engineering
B.A. (1973), M.S. (1974) Pennsylvania State University

Seed, Patricia, 1982. Professor of History
B.A. (1971) Fordham University, M.A. (1975) University of Texas at Austin, Ph.D. (1980) University of Wisconsin at Madison

Segner, Edmund, III, 1996. Lecturer on Civil Engineering
B.S. Rice University, M.A. University of Houston

Semmes, Stephen W., 1987. Noah Harding Professor of Mathematics
B.S. (1980) Armstrong State College, Ph.D. (1983) Washington University

Shamoo, Yousif, 1998. Assistant Professor of Biochemistry and Cell Biology
B.S. (1983) Carnegie-Mellon University, Ph.D. (1988) Yale University

Shank, Jr., C. Dean, 1984. Artist Teacher of Secondary Piano and Piano Technology and Associate of Sid Richardson College
B.Mus. (1968), M.Mus. (1971) North Texas State University, D.M.A. (1988) University of Texas at Austin

Sharon, E. Danielle, 1997. Lecturer on Hebrew in the Center for the Study of Languages
B.A. (1975) University of Rome; M.A. (1986), M.A. (1989) Barry University

Sher, George, 1991. Herbert S. Autrey Professor of Humanities (Philosophy) and Associate of Jones College
B.A. (1964) Brandeis University, Ph.D. (1972) Columbia University

Sherman, Daniel J., 1990. Professor of French and History
A.B. (1980) Harvard University; M.A. (1981), Ph.D. (1985) Yale University

Sherwood, Arthur, 1988. Adjunct Associate Professor in Electrical and Computer Engineering
B.E.E. (1966), M.S.E.E. (1967), Georgia Tech; Ph.D. (1970) Duke University

Shook, Joan E., 1998. Adjunct Professor of Management
B.A. (1976) Brown University, M.D. (1981) University of Cincinnati College of Medicine, M.B.A. (1986) University of Houston

Si, Qimiao, 1994. Assistant Professor of Physics
B.S. (1986) University of Science and Technology of China, Ph.D. (1991) University of Chicago

Sickles, Robin, 1985. Professor of Economics and Associate of Baker College
B.S. (1972) Georgia Institute of Technology, Ph.D. (1976) University of North Carolina

Siemann, Evan, 1998. Assistant Professor of Ecology and Evolutionary Biology
A.B. (1989) Cornell University, Ph.D. (1997) University of Minnesota

Sigrist, Markus W., 1994. Adjunct Professor in Electrical and Computer Engineering
Diplom. (1972), Ph.D. (1977) ETH University, Zurich, Switzerland

Silverman, Barry E., 1998. Adjunct Associate Professor of Management
B.B.A. (1968) University of Texas at Austin

Simon, Scott I., 1994. Adjunct Assistant Professor in the Biomedical Engineering Laboratory
B.S. (1983), M.S. (1984), Ph.D. (1987) University of California at San Diego

Sinclair, James B., 1978. Lecturer on Electrical and Computer Engineering, Assistant Dean of Engineering, and Associate of Brown College
B.S.E.E. (1973), M.E.E. (1974), Ph.D. (1979) Rice University

Singleton, Scott, 1996. Assistant Professor of Chemistry and of Biochemistry and Cell Biology and Associate of Will Rice College
B.A. (1988) Trinity University, Ph.D. (1995) California Institute of Technology

Skaggs, Ray H., 1972. Adjunct Professor of Human Performance and Health Sciences
B.A. (1942) Rice Institute, M.D. (1945) University of Texas at Austin

Skura, Meredith, 1978. Professor of English
B.A. (1965) Swarthmore College, Ph.D. (1971) Yale University

Smalley, Richard E., 1976. Gene and Norman Hackerman Professor of Chemistry and Professor of Physics
B.S. (1965) University of Michigan; M.A. (1971), Ph.D. (1973) Princeton University

Smayling, Michael C., 1989. Adjunct Lecturer on Electrical and Computer Engineering
B.S. (1972) University of Minnesota; M.S. (1975), Ph.D. (1981) Rice University

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, David P., 1982. Adjunct Professor of Sociology
B.A. (1962) University of California at Berkeley, Ph.D. (1979) Harvard University

Smith, George, 1981. Professor of Art
B.F.A. (1969) San Francisco Art Institute, M.A. (1972) Hunter College

Smith, Gordon W., 1968. Professor of Economics
A.B. (1956) Washington University, Ph.D. (1966) Harvard University

Smith, Ken A., 1975. Distinguished Faculty Fellow in Space Physics and Astronomy and in Physics
B.A. (1970), M.S. (1973), Ph.D. (1975) Rice University

Smith, Richard J., 1973. Professor of History and Associate of Hanszen College
B.A. (1965), M.A. (1968), Ph.D. (1972) University of California at Davis

Snow, Edward A., 1981. Professor of English and Associate of Hanszen College
B.A. (1964) Rice University, M.A. (1966) University of California at Riverside, Ph.D. (1969) State University of New York at Buffalo

Soeshima, Yumi, 1994. Lecturer on Linguistics
B.A. (1980) Kansai University of Foreign Studies, M.A. (1989) University of North Carolina, M.A. (1990) University of Wisconsin at Madison

Soley, David, 1999. Assistant Professor of Composition and Theory
B.M. (1987) California State University at Northridge, Ph.D. (1993) Stanford University

Soligo, Ronald, 1967. Professor of Economics and Associate of Lovett College
B.A. (1958) University of British Columbia, Ph.D. (1964) Yale University

Sood, Sanjay, 1998. Assistant Professor of Management
B.S. (1987) University of Illinois, M.B.A. (1992) Northwestern University, Ph.D. (1999) Stanford University

Sorensen, Danny C., 1989. 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

Sowers, James R., 1998. Lecturer on Management
A.B. (1973) Colgate College, M.B.A. (1977) College of William and Mary, Ph.D. (1984) Columbia University

Spanos, Pol D., 1984. Lewis B. Ryon Professor of Mechanical Engineering and Civil Engineering
Dip. (1973) National Technical University (Greece); M.S. (1974), Ph.D. (1976) California Institute of Technology

Sparagana, John, 1989. Associate Professor of Art
B.G.S. (1980) University of Michigan, M.F.A. (1987) Stanford University

Spence, Dale W., 1963. Professor of Human Performance and Health Sciences and Associate of Wiess College
B.S. (1956) Rice Institute, M.S. (1959) North Texas State University, Ed.D. (1966) Louisiana State University

Spudis, Paul D., 1994. Adjunct Assistant Professor of Geology and Geophysics
B.S. (1976), Ph.D. (1982) Arizona State University

Spuler, Richard, 1992. Lecturer on German and Associate of Jones College
B.A. (1975), M.A. (1976) Washington State University; Ph.D. (1980) Ohio State University

Stein, Robert M., 1979. Dean of Social Sciences, Lena Gohlman Fox Professor of Political Science, and Associate of Jones College
B.A. (1972) Ohio Wesleyan University; M.A. (1974), Ph.D. (1977) University of Wisconsin at Milwaukee

Stepinski, Tomasz F., 1994. Adjunct Associate Professor of Space Physics and Astronomy
M.S. (1979) Warsaw University, Ph.D. (1986) University of Arizona

Stern, Michael, 1991. Associate Professor of Biochemistry and Cell Biology and Associate of Jones College
B.S. (1978) Stanford University, Ph.D. (1985) University of California at San Francisco

Stevenson, Paul M., 1984. Professor of Physics and Associate of Brown College
B.A. (1976) Cambridge University, Ph.D. (1979) Imperial College

Stevenson, Randolph T., 1997. Assistant Professor of Political Science
B.A. (1991) Texas A&M University; M.A. (1994), Ph.D. (1996) University of Rochester

Stewart, Charles R., 1969. Professor of Biochemistry and Cell Biology and Associate of Jones College
B.S. (1962) University of Wisconsin at Madison, Ph.D. (1967) Stanford University

Stokes, Gale, 1968. Mary Gibbs Jones Professor of History
B.A. (1954) Colgate University; M.A. (1965), Ph.D. (1970) Indiana University

Stoll, Richard J., 1979. Professor of Political Science and Associate of Jones College
A.B. (1974) University of Rochester, Ph.D. (1979) University of Michigan

Stong, Richard A., 1993. Professor of Mathematics
B.A. (1985), M.A. (1985) Washington University; Ph.D. (1990) Harvard University

Strassmann, Joan E., 1980. Professor of Ecology and Evolutionary Biology and Associate of Wiess College
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
A.B. (1968) Washington University; M.Div. (1972) Concordia Seminary; M.Phil. (1975), Ph.D. (1980) Yale University

Subramanian, Devika, 1995. Associate Professor of Computer Science and Associate of Lovett College
B.S. (1982) Indian Institute of Technology; M.S. (1984), Ph.D. (1989) Stanford University

Subtelny, Stephen, 1968. Professor of Ecology and Evolutionary Biology and Associate of Brown College
B.A. (1949) Hobart College; M.A. (1952), Ph.D. (1955) University of Missouri

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. Professor of Computational and Applied Mathematics
B.A. (1971) University of California at Berkeley; M.A., Ph.D. (1975) Harvard University

Talwani, Manik, 1985. Schlumberger Professor of Geophysics
B.Sc.Hons. (1951), M.Sc.(1953) Delhi University; Ph.D. (1959) Columbia University; Ph.D. (Honoris Causa) (1981) Oslo University

Tapia, Richard A., 1970. Noah Harding Professor of Computational and Applied Mathematics
B.A. (1961), M.A. (1966), Ph.D. (1967) University of California at Los Angeles

Taylor, Julie M., 1981. Professor of Anthropology
B.A. (1966) Harvard University; Diploma (1969), Ph.D. (1973) Oxford University

Taylor, Ronald N., 1983. George R. Brown Professor of Business Policy, Professor of Psychology, and Associate of Baker College
B.A. (1960) Westminster College, M.A. (1964) University of Nebraska, Ph.D. (1970) University of Minnesota

Temkin, Larry S., 1980. Professor of Philosophy and Associate of Jones College
B.A. (1975) University of Wisconsin at Madison, Ph.D. (1981) Princeton University

Terk, Michael, 1996. Assistant Professor in Civil Engineering
B.S. (1986) Vanderbilt University; M.S. (1988), Ph.D. (1992) Carnegie Mellon University

Tezduyar, Tayfun E., 1998. James F. Barbour Professor in Mechanical Engineering and Materials Science
M.S. (1978), Ph.D. (1982) California Institute of Technology

Thal, Sarah, 1999. Assistant Professor of History
B.S. (1988) Georgetown University; B.A. (1990) University of London; M.A. (1991), M.Phil (1993), Ph.D. (1999) Columbia University

Thames, Jr., Howard D., 1975. Adjunct Professor of Statistics
B.A. (1963), Ph.D. (1970) Rice University

Thompson, Ewa M., 1970. Professor of Slavic Studies
B.A. (1963) University of Warsaw; M.F.A. (1963) Sopot Conservatory of Music, Poland; Ph.D. (1967) Vanderbilt University

Thompson, James R., 1970. Professor of Statistics and Associate of Lovett College
B.Eng. (1960) Vanderbilt University; M.A. (1963), Ph.D. (1965) Princeton University

Tittel, Frank K., 1967. J. S. Abercrombie Professor in Electrical and Computer Engineering and Associate of Hanszen College
B.A. (1955), M.A., Ph.D. (1959) Oxford University

Tobin, Mary L., 1979. Lecturer on English
B.A. (1963) Carleton College, M.A. (1966) Columbia University, Ph.D. (1973) Rice University

Toffoletto, Frank, 1996. Faculty Fellow in Space Physics and Astronomy
B.S. (1981) La Trobe University, Ph.D. (1987) Rice University

Tomson, Mason B., 1977. Professor in Environmental Science and Engineering
B.S. (1967) Southwestern State College, Ph.D. (1972) Oklahoma State University

Tour, James M. 1999. Chao Professor of Chemistry
B.S. (1981) Syracuse University, Ph.D. (1986) Purdue University

Trosset, Michael, 1992. Adjunct Associate Professor in Computational and Applied Mathematics
B.A. (1978) Rice University, Ph.D. (1993) University of California at Berkeley

Tsuchitani, Chiyeko, 1986. Adjunct Professor of Electrical and Computer Engineering
B.A. (1961) University of California at Berkeley, Ph.D. (1966) University of Louisville

Turner, Fred T., 1992. Adjunct Professor of Ecology and Evolutionary Biology
B.S. (1965), M.S. (1967) Louisiana State University; Ph.D. (1974) North Carolina State University

Tyler, Stephen A., 1970. Herbert S. Autrey Professor of Anthropology and Linguistics
B.A. (1957) Simpson College; M.A. (1962), Ph.D. (1964) Stanford University

Udden, Mark M., 1983. Adjunct Assistant 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, Associate Dean of Executive Education for the Jesse H. Jones Graduate School of Management, and Associate of Will Rice College
B.A. (1968), M.B.A. (1970), Ph.D. (1973) University of Texas at Austin

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Profesorado (1956) La Plata National University, Argentina; Ph.D. (1968) Stanford University

Vail, Peter R., 1986. W. Maurice Ewing Professor of Oceanography
A.B. (1952) Dartmouth College; M.S. (1953), Ph.D. (1959) Northwestern University

Vandaveer, Vicki V., 1989. Adjunct Assistant Professor of Psychology
B.A. (1975), M.A. (1981), Ph.D. (1981) University of Houston

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B.A. (1980) Cambridge University, Doctoraalexamen (1983) Rijksuniversiteit Utrecht, Ph.D. (1990) Columbia University

Vandenberg, Kristy, 1989. Lecturer on Human Performance and Health Sciences
B.S. (1975) University of Michigan

Van Helden, Albert, 1970. Lynette S. Autrey Professor of History
B.Eng. (1962), M.S. (1964) Stevens Institute of Technology; M.A. (1967) University of Michigan; Ph.D. (1970) London University

Vardi, Moshe, 1993. Noah Harding Professor of Computer Science
B.S. (1975) Bar-Ilan University, M.S. (1980) Feinberg Graduate School of the Weizmann Institute of Science, Ph.D. (1982) Hebrew University

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Ma, Yunqing, 1997. Postdoctoral Research Associate in Chemistry
B.S. (1989) Nankai University, M.S. (1992) The Chinese Academy of Science, Ph.D. (1997) University of Delaware

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B.S. (1990), Ph.D. (1998) University of Georgia

Mango, Frank D., 1992. Research Scientist in Chemical Engineering and Geology/Geophysics
B.S. (1959) San Jose State University, Ph.D. (1963) Stanford University

Mann, Brenda, 1998. Postdoctoral Research Associate in Bioengineering
B.S. (1991) Iowa State University, Ph.D. (1997) Rice University

Marriott, Terry D.,1978. Scientist and Instrument Manager in Chemistry
B.S. (1969), Ph.D. (1976) Oklahoma State University

McCormick, Susan, 1993. Ph.D. Fellow in Bioengineering
B.S. (1985) University of California at Berkeley, Ph.D. (1993) University of Texas Southwestern Medical Center at Dallas and University of Texas at Arlington

McGregor, Martin L., 1998. Complimentary Visiting Scholar in Biochemistry and Cell Biology
B.S. (1962) University of Georgia, Ph.D. (1969) University of South Carolina, J.D. (1978) University of Oklahoma

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McMahon, C. Niamh, 1995. Robert A. Welch Postdoctoral Fellow in Chemistry
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Prabhu, P. R., 1999. Postdoctoral Research Associate in Mechanical Engineering and Materials Science
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Qin, Yu-Lin, 1996. Postdoctoral Research Associate in Psychology
B.E. (1968) Nanjing Aeronautical Institute; M.E. (1982) Beijing University of Aeronautics and Astronautics; M.S. (1990), Ph.D. (1992) Carnegie Mellon University

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Rogers, William E., 1998. Complimentary Visiting Scholar in Ecology and Evolutionary Biology
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B.S. (1986), M.S. (1991) Simon Bolivar University, Caracas, Venezuela; M.A. (1997), Ph.D. (1999) Rice University

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Ross, Malcolm I., 1995. Complimentary Postdoctoral Research Associate in Geology and Geophysics
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M.S. (1988) Slovak Technical University, Ph.D. (1996) Slovak Academy of Sciences

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Still, John W., 1998. Robert A. Welch Postdoctoral Fellow in Chemistry
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Walker, Peter W., 1998. Postdoctoral Research Associate in Space Physics and Astronomy
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Wang, Chuan-Yue, 1995. Research Scientist in Environmental Science and Engineering
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Wang, Nai-Xing, 1998. Robert A. Welch Postdoctoral Fellow in Chemistry
B.S. (1980) Shaanxi Normal University, M.S. (1990) Xian Modern Chemistry Research Institute, Ph.D. (1993) Beijing Institute of Technology

Wang, Tong, 1985. Senior Research Scientist in Mechanical Engineering and Materials Science
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Westby, Timothy, 1998. Complimentary Visiting Scholar in Chemistry
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Wilhelm, Mark S., 1989. Complimentary Research Associate in Chemistry

Wilson, William K., 1982. Assistant Director of Laboratory of Basic Medical Sciences
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Wu, Zhijun, 1998. Research Scientist in Computational and Applied Mathematics
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B.S. (1978) East Tennessee State University, M.L.S. (1991) Sam Houston State University

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B.A. (1952) Rice Institute, M.S.L.S. (1965) Catholic University of America, M.A. (1979) Rice University

Bynog, David, 1998. Assistant Acquisitions Librarian
B.Mus. (1993) Louisiana State University, M.Mus. (1996) Rice University, M.L.I.S. (1997) Louisiana State University

Camille, Damon, 1998. Director of Document Delivery and Fee-Based Services
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B.A. (1980) Grinnell College; M.A. (1982), M.A.L.S. (1984) University of Missouri

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Figg, Milton H., 1996. Humanities Reference Librarian
B.A. (1970) University of Mississippi; M.S. (1978) University of Southern Mississippi

Flannery, Melinda Reagor, 1992. Assisant University Librarian and Head of Cataloging
A.B. (1977) Wellesley College, M.Div. (1980) Yale Divinity School, M.L.I.S. (1982) University of Texas at Austin

Graham, Rose, 1989. Catalog Librarian
B.A. (1964) Rice University, M.S. (1965) Simmons College

Hatfield, Joseph W., 1984. Facilities Manager
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Henry, Charles, 1996. Vice Provost and University Librarian
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Sabin, Robert G., 1988. Science Reference Librarian and University Associate of Hanszen College
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B.A. (1963) University of Texas at Austin

Gourlay, Una M., 1986. Emerita Head, Document Delivery and Fee-Based Services
B.Sc. (1958) University of Glasgow

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Beckwith, Boyd R., 1998. Director, Student Center
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Cesario, Robert J., 1998. Director, Rice Bands
B.F.A. (1974) University of Wisconsin-Milwaukee, M.A. (1977) Northeast Missouri State University, M.A. Mus (1978) University of Wisconsin-Milwaukee, Doctor of Arts (1990) University of Northern Colorado

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B.A. (1981) St. Edward's University, M.S. (1993) University of Houston/Clear Lake

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Allcorn, A. Dean, 1995. Associate Athletic Director/Finance
B.B.A. (1978) University of El Paso, J.D. (1989) South Texas College of Law

Blankenship, D. Paul, 1980. Women's Tennis Coach
B.A. (1972) Texas Christian University, M.Ed. (1991) University of Houston

Boyd, Douglas N., 1998. Head Men's and Women's Swimming Coach
B.A. (1986), M.S. (1990) Indiana University

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Clanton, Thomas O., M.D., 1995. Co-Team Physician
B.A. (1973) Rice University, M.D. (1976) Baylor College of Medicine

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Davidson, Raymond W., 1987. Head Men's Track and Field Coach
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Eggert, Allen, 1968. Assistant Athletic Director/Medical Services
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B.S. (1968) United States Air Force Academy, M.S. (1973) Texas A&M University, Ph.D. (1981) University of Denver

Graham, Wayne L., 1991. Head Baseball Coach
B.S. (1970) University of Texas at Austin, M.Ed. (1973) University of Houston

Griswold, Julie L. 1986. Assistant Athletic Director/Academic Services
B.A. and B.S. (1981) Miami University, M.S. (1986) Indiana University

Hatfield, Kenneth W., 1994. Head Football Coach
B.A. (1965) University of Arkansas

Hovious, Bradford W., 1999. Assistant Athletic Director for Development
B.S. (1970), M.Ed. (1970) University of Mississippi; M.Ed. (1975) Ohio University; Ed.D. (1977) Louisiana State University

Lopez, Victor M., 1980. Head Women's Track and Field Coach
B.S. (1971) University of Houston, M.S. (1975) Texas Southern University

Martin, Gregory S., 1998. Head Golf Coach
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May, John Robert, 1967. Director of Athletics
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Moniaci, Steve, 1980. Associate Athletic Director/Administration
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Morales, Julio, 1996. Head Women's Volleyball Coach
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Moss, David K., 1989. Compliance Coordinator
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Pedé, Michael L., 1993. Assistant Athletic Director/Marketing
B.S. (1989) University of Houston

Reeves, Scott R., 1996. Head Strength and Conditioning Coach
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Smarr, Ronald T., **1997**. Head Men's Tennis Coach
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Wilson, Willis T., 1992. Head Men's Basketball Coach
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University Standing Committees for 1999–2000

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 Computers
Committee on Environmental Health and Safety
Committee on Examinations and Standing
Committee on Faculty and Staff Benefits
Committee on the Faculty Handbook
Committee on the Library
Committee on Parking
Committee on Public Lectures
Residential Colleges Management Advisory Committee
Committee on Salary Equity
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.

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