

# General Information

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## Mission

The mission of the Cockrell School of Engineering is to achieve excellence in undergraduate and graduate education, research, and public service. The school strives to provide an educational experience that inspires students to reach for the highest levels of intellectual attainment and personal growth throughout their lives, to provide a scholarly and professional environment that enables students and faculty members to make lasting contributions to the advancement of knowledge and the creative practice of engineering, to engage in service that enhances the public's understanding of technology and facilitates the use of technology for the betterment of society, and to lead the nation in providing equality of opportunity for engineering education.

Engineering education affords individuals the opportunity to prepare themselves for life in an era when human well-being depends more than ever before on the ability to apply technology for the benefit of society. It has become clear that in producing the goods and services demanded by an expanding population, we must consider the effects of technology on the environment. Solution of many of the problems faced by society today will involve a high level of technology.

Engineers are involved with all the devices and systems made by and for people—buildings and factories, transportation and communication systems, equipment for generating and distributing electrical energy, computers and electronic devices; indeed, all of the manufactured products we see around us. Engineers of diverse backgrounds working together and with other professionals have produced heart pumps, surgical lasers, robotics for manufacturing and construction, polymers, safer and more efficient nuclear reactors, advances in space research and in environmental protection, safe and attractive bridges, satellites and telecommunication systems, and small but powerful computers. Just as much of the technology being applied today has been developed within the past ten years, the solution of tomorrow's problems will require the development of new technology through engineering research.

In addition to its traditional function of giving men and women the opportunity to prepare for careers as professional engineers, the Cockrell School of Engineering also has a second function: providing the opportunity to acquire a technical background to students who plan to continue their education in areas such as business, public affairs, law, medicine, and scientific disciplines related to engineering. The engineering faculty willingly accepts its obligation to enhance cooperation between engineers and others working to improve the quality of life.

The school is organized into academic departments that offer a variety of degrees. Although there are distinct differences among the degree programs, they have much in common; all are based on a foundation of mathematics, natural sciences, and basic engineering subjects. Following the development of an adequate foundation during the first two years, an engineering student begins concentrated study in a particular area. During the senior year the student delves into practical engineering problems, developing skills in defining a problem, translating available information into equations that can be analyzed logically, creating additional information when necessary, and choosing a course of action that has a reasonable chance of producing the desired results.

The school seeks to give students the knowledge necessary to take advantage of opportunities in a number of areas. The engineer who begins a professional career immediately following graduation usually will find opportunity for a variety of responsible positions in industry and government. The first assignments usually are of a technical nature.

Later, one may choose to become a technical specialist or to move into positions involving administration and management. Either choice can lead to a rewarding professional career.

Many engineering graduates elect to continue their education. Studies by the American Society for Engineering Education indicate that nearly 50 percent of all engineering graduates eventually earn a master's degree. Most do their graduate work in engineering, either in a professional program where advanced design techniques are emphasized or in a graduate school where the emphasis is on research. Others elect to enroll in graduate programs in other disciplines. The flexibility to accommodate a broad spectrum of educational objectives has been incorporated into the degree structure of the Cockrell School of Engineering through technical area options and electives that permit students to define programs of study that best suit their needs.

## History

The Department of Engineering was established in 1884, an outgrowth of work in applied mathematics first offered in the Department of Literature, Science, and Arts. About 1920, the department became a college; in 2007, the college was renamed the Cockrell School of Engineering in honor of Ernest Cockrell Jr., an alumnus and benefactor of the University. The first degree in engineering, a Bachelor of Science with a major in civil engineering, was conferred in 1888. Civil engineering degrees have been conferred since 1894 and electrical engineering degrees since 1896.

Degrees in architecture were conferred in the College of Engineering from 1909 through 1951, when the School of Architecture became an autonomous division of the University. Degrees in chemical engineering have been conferred since 1916; degrees in mechanical engineering since 1919; degrees in architectural engineering since 1928; degrees in petroleum engineering since 1931; degrees in aeronautical engineering from 1943 to 1959 and in aerospace engineering since 1960; degrees in ceramic engineering from 1948 to 1961; degrees in meteorology from 1951 to 1963; degrees in geosystems engineering and hydrogeology, offered jointly with the Jackson School of Geosciences, since 1996; and undergraduate degrees in biomedical engineering beginning in 2002. A degree in engineering science was offered from 1960 until 1988.

## Facilities

The Cockrell School occupies six buildings on the central campus, with a total of 1,340,000 square feet for classrooms, laboratories, and offices. The Nuclear Engineering Teaching Laboratory and a substantial number of other engineering research laboratory facilities are housed at the J. J. Pickle Research Campus, about six miles north of the main campus.

## Research Organizations

Faculty members and students of the Cockrell School of Engineering may participate in a wide variety of research projects conducted in departments and research centers. The research is supported by federal, state, and industrial research contracts and grants that provide part-time employment for selected undergraduate and graduate students. More than seven hundred individual research projects are usually underway at any one time. In addition to providing students with experience in research methodology, these research projects enable faculty members to keep abreast of developments in their principal areas of interest.

Research centers currently operating within the Cockrell School are the Center for Additive Manufacturing and Design Innovation; Center for Aeromechanics Research; Center for Electromechanics; Center for Energy and Environmental Resources; Center for Engineering Education; Center for Mechanics of Solids, Structures and Materials; Center for Nanomanufacturing Systems for Mobile Computing and Mobile Energy Technologies; Center for Subsurface Energy and Environment; Center for

Space Research; Center for Transportation Research; Center for Water and the Environment; Construction Industry Institute; Phil M. Ferguson Structural Engineering Laboratory; Microelectronics Research Center; and the Wireless Networking and Communications Group.

The Nuclear Engineering Teaching Laboratory is an academic unit of the Cockrell School. Interdisciplinary research units operated cooperatively by the school and other colleges are the Energy Institute; Texas Materials Institute; the Center for Perceptual Systems; and the Oden Institute for Computational Engineering and Sciences.

## Libraries

For more than 125 years, The University of Texas Libraries have been committed to building one of the greatest library collections in the world. Maintaining more than 10 million volumes and providing access to the latest digital journals, databases, and web resources, our libraries collect and preserve the finest achievements of human knowledge in support of not only research and instruction needs, but also the exploration of deep intellectual curiosities. Assistance with finding and using library resources is offered in person, by contacting individual members of the library staff, and through Ask a Librarian services. For more information about UT Libraries: <https://www.lib.utexas.edu>.

## Engineering Development Office

In 1955, the University of Texas System Board of Regents authorized establishment of the Engineering Foundation Advisory Council (renamed the Engineering Advisory Board in 2007) to promote academic excellence in engineering education. Since then, with the board's leadership, the Cockrell School of Engineering has received generous support from individuals and corporations to develop programs of excellence. This philanthropy supports academic and leadership programs for students, scholarships for undergraduate students, fellowships for graduate students, facility development, and faculty support in the forms of endowed chairs and professorships, fellowships, and innovations in teaching and research. The Cockrell School's development staff encourages gifts to the school through the annual giving program, the establishment of endowments, estate planning, and the fostering of long-lasting relationships with alumni, friends, and corporate partners.

## Financial Assistance through the School Engineering Scholarship Program

The Engineering Scholarship Program recognizes students in the Cockrell School of Engineering with scholarship awards based primarily on merit and leadership. To be considered for engineering scholarships, future students can submit either the Common App or ApplyTexas application through the University by December 1, completing the scholarship section and marking engineering as their first-choice major. Additionally, students should acknowledge the Engineering Honors Program question with their interest on the admission application, also due by December 1.

Current engineering students should complete the online engineering scholarship application by April 1 each year to be considered for scholarship awards from the Cockrell School and from their department for the following year. Information for scholarship recipients and links to additional scholarship resources is available at <https://students.engr.utexas.edu/policies-forms/scholarship-policies>

## Student Services

### Engineering Student Services

Engineering Student Services (ESS) serves the University and the public by helping to recruit, retain, and graduate engineering students. The office aims to accomplish this mission by providing personal and

responsive guidance and support throughout each student's University experience. The staff strives to provide a foundation for students to develop successful lives, careers, and long-term relationships with the Cockrell School of Engineering and The University of Texas at Austin.

The Assistant Dean for Engineering Student Services and the academic advisors represent the dean in all student matters. Academic advisors strive to build a strong foundation for academic and professional success for all engineering students, through personalized and responsive guidance throughout the four-year college experience. In addition, the ESS staff helps students, staff, and faculty navigate the policies and procedures of the Cockrell School and the University. Students may seek assistance in person in the Engineering Education and Research Center (EER) 2.848, by phone at (512) 471-4321, or by e-mail to [studentservices@engr.utexas.edu](mailto:studentservices@engr.utexas.edu). Engineering Student Services also provides information online at <https://students.engr.utexas.edu/academics-advising/advising>.

## Career Services

The Engineering Career Assistance Center (ECAC) helps engineering students with job search and career planning through counseling, workshops, and campus recruiting and interviews. Engineering students should register with ECAC beginning in August each academic year to receive full benefit of the center's services.

ECAC offers individual career counseling services to engineering students on a walk-in basis and by appointment. Topics addressed in individual counseling sessions and workshops include career planning and exploration, résumé writing, interviews, site visits, and evaluating job offers.

ECAC hosts interviews in its 27 interview rooms throughout the fall and spring recruiting seasons. Employers seek graduating students, co-op students, and summer interns in all engineering disciplines.

ECAC encourages engineering students to visit our office in person in the Engineering Education and Research Center (EER) 2.604. Engineering students can also visit ECAC online at <http://www.engr.utexas.edu/student-life/career-services> and reach out to ECAC via e-mail at [ecac@engr.utexas.edu](mailto:ecac@engr.utexas.edu) or phone at (512) 471-1915.

## Cooperative Engineering Education Program

The Cooperative Engineering Education (Co-op) Program is an academic program that allows undergraduate students to obtain full-time engineering experience before they graduate. Students gain work experience directly related to their field of engineering by alternating semesters of full-time campus study with training in industry. Students complete career developments and a technical report during the course.

To realize the full academic and professional value of the Co-op Program, students complete either two or three semesters with the same employer in a cooperative engineering position. Students receive two hours of letter-grade credit for a spring or fall semester work term and one hour for a summer term. Students should apply for the Co-op Program at least one semester before planning to begin a co-op work term.

Students may apply for the first work term after completing 28 semester hours of basic sequence coursework, which includes eight hours of physics, eight hours of calculus, and at least one course in the selected engineering major. Students must have an overall University grade point average (GPA) of at least 2.50, a GPA in the major area of study of at least 2.00, and at least twelve semester hours of degree-applicable coursework left to complete after the final co-op term. Students may apply for the program after one semester at the University.

Engineering students can visit the Co-op Program in EER or online at <http://www.engr.utexas.edu/ecac/coop/>. Engineering students can reach the Co-op Program via e-mail at [co-op@engr.utexas.edu](mailto:co-op@engr.utexas.edu), or by phone at (512) 471-5954.

## UTeach-Engineering

UTeach-Engineering is an innovative program that prepares engineering students to teach mathematics, physical science, and engineering to students in grades eight through twelve. The program, a collaboration between the Cockrell School of Engineering, the College of Natural Sciences, the College of Education, and area school districts, seeks to attract interested students to explore teaching in conjunction with their undergraduate experience. Upon completing the program, students graduate with a bachelor's degree and are recommended for a secondary school teaching certificate. The UTeach-Engineering program invites students to explore their interest in teaching as early as the freshman year. Key features of the program include field experience, mentorship, seminar instruction, cohort support and innovative use of technology. UTeach-Engineering students gain experience in public school classrooms as they teach progressively longer lessons under the guidance of a mentor teacher. By working with some of Texas's most respected secondary school teachers, students quickly learn whether they are suited for the teaching profession.

## Study Abroad

International Engineering Education offers programs designed for Longhorn Engineers so they can take study abroad first-hand without delaying graduation. Participants may apply their scholarships and financial aid loans to all necessary costs, including tuition and fees, required travel, insurance and living expenses. Most programs do not have any foreign language requirements so students may take engineering courses while also exploring global innovation, entrepreneurship, and service through immersion in industry, laboratories and communities abroad.

As one of the best engineering schools in the country, the Cockrell School of Engineering prides itself in providing international engineering education opportunities to prepare its students to become global leaders and innovators. For this generation of engineers, developing an international perspective and global leadership skills is fundamental. The engineering profession has a central role in the globalized marketplace. Industry leaders and government experts urge engineering students to immerse themselves in other cultures to learn to effectively work and successfully compete but also to collaborate with other countries on special projects, products, and solutions for the global challenges of the twenty-first century. Engineers lead the world in developing and managing high technologies and companies that improve and affect our daily quality of life, health, security, education, economy, and world peace.

We offer a variety of programs for all majors and class levels so that every interested student can find an opportunity. Students may study abroad as early as the end of their first year. May terms, typically starting at the end of May, offer one course abroad that is taught by outstanding Cockrell School of Engineering faculty. They offer invaluable faculty mentorship and academic inspiration to students throughout their career. Most short summer programs are between four to 8 weeks and offered from the end of May to the beginning of August. They may offer more than one course. The costs of these programs vary depending on location, duration and activities.

Advanced sophomores, juniors and fall semester seniors may participate in bilateral exchanges with selected partner universities abroad. Exchange students immerse themselves fully in another academic and cultural environment for at least four months during the fall or the

spring or both semesters. They take a full load of courses from the host university's regular university offerings. The courses are usually offered in English or, if the student is sufficiently proficient, they may also study in courses offered in the host country's language. Students pay the same tuition and fees that they pay to attend The University of Texas at Austin. The other living expenses vary depending on the location.

Apart from the traditional summer study abroad, we also offer engineering students other types of international programs that provide very valuable experiential learning. These are usually in the summer and include industry and research immersion internships. Projects with Underserved Communities (PUC) offers a fall and spring engineering course sequence that focuses on project development and project management to prepare students for a short summer implementation phase at a community abroad.

All engineering students are highly encouraged to participate in at least one global learning experience. The International Engineering Education office holds frequent information session sessions and one-on-one advising to help students plan how to globalize their education and select a program that best suits their interests. For more information, please visit <http://www.engr.utexas.edu/academics/undergraduate-education/study-abroad/>.

## Advising

### Academic Advising

There are several offices within the Cockrell School that work together to provide the engineering student with academic advising services. It is the engineering student's responsibility to be aware of these services and to take advantage of them. Faculty, departmental, and Engineering Student Services academic advisors are available throughout the year to discuss matters that affect the student's academic progress toward degree completion.

To facilitate movement through an academic program, each engineering student must be advised in his or her major department before registering for each semester or summer session. Each student should review his or her audit every semester through IDA, the University's Interactive Degree Audit system. The advising audit lists the courses remaining in the student's degree plan and the requirements the student has not yet fulfilled. It normally provides an accurate statement of requirements, but the student is responsible for knowing the exact requirements for the degree as stated in a catalog under which he or she is entitled to graduate.

### Counseling and Referral Services

University counseling services are available from the Counseling and Mental Health Center, the Telephone Counseling Service and University Health Services. These offices are described in [General Information Catalog](#).

### Counselors in Academic Residence Program (CARE)

CARE is a program of the Counseling and Mental Health Center, which provides a licensed mental health professional to work with students who have been referred by faculty and staff. CARE counselors integrate in the college and provide support and consultation on mental health issues for advisors, faculty and dean's staff. The Engineering CARE counselor is located in the Engineering Student Services Office.

## Student Organizations and Programs

### Engineering Student Life

Engineering Student Life (ESL) aims to enhance leadership abilities of all engineering students as a means to establish confidence in communication, teamwork and ethics skills needed for the professional world. ESL hosts professional development retreats like The LeaderShape Institute and Ramshorn Retreats, for individuals seeking personal enrichment, which also include enhanced leadership opportunities for advanced students. As the Cockrell School's primary liaison to the over eighty-five engineering student organizations, ESL provides officer training and advising for group leaders. To foster a welcoming and collaborative environment within the Cockrell School, ESL coordinates community building events like Gone to Engineering and Dean's Study Breaks. These professional development and social networking opportunities augment the student's college experience by allowing them to interact with other motivated students, provide venues to envision big goals, and practice partnering to accomplish complex projects.

Additional information about Engineering Student Life and engineering student organizations is available in person in the Engineering Education and Research Center (EER) 2.848, online at <https://students.engr.utexas.edu/student-life-resources>, by phone at (512) 232-5778, and by e-mail at [studentlife@engr.utexas.edu](mailto:studentlife@engr.utexas.edu).

### Ramshorn Scholars Program

The Ramshorn Scholars Program (RSP) is an engineering academic learning community designed to facilitate student success in engineering and at UT Austin. As a part of the Ramshorn Scholars Program, student status as an engineer-in-training is kept front and center through interactive programming and specialized resources.

RSP aims to create a community that promotes and helps students achieve academic excellence. In fact, the Ramshorn is a symbol with deep roots in the Cockrell School that has defined academic achievements for our student engineers for decades.

Additional information about RSP is available in person in the Engineering Education and Research Center (EER) 2.848, online at <https://students.engr.utexas.edu/support-services/ramshorn-scholars-program>, by phone at (512) 471-4321, and by e-mail to [ramshornscholars@engr.utexas.edu](mailto:ramshornscholars@engr.utexas.edu).

### Equal Opportunity in Engineering Program

The Equal Opportunity in Engineering (EOE) Program invites students to become part of an exciting community that focuses on academic success and personal growth. EOE initiatives such as the Fall Kick-Off, First-Year Interest Groups (FIGs), and Engineering Peer Leaders help students establish a strong academic foundation and promote the formation of a peer support network. In addition, EOE provides students with access to tutoring, undergraduate research opportunities through the Texas Research Experience (TREX) program, and professional development workshops. In partnership with Pi Sigma Pi Minority Academic Engineering Society, the National Society of Black Engineers, and the Society of Hispanic Professional Engineers, the EOE Program builds a network that makes it easy to meet other engineering students, form study groups, and develop friendships that last well after graduation.

The Cockrell School established the EOE Program in 1970 to promote the recruitment and academic development of African American, Hispanic, and Native American students interested in pursuing careers in engineering. Since that time, EOE has expanded its goals and now seeks to increase the diversity of its student body by supporting students who

come from historically underrepresented population groups in Texas or who have backgrounds or experiences that will contribute to the overall diversity of the Cockrell School of Engineering.

Additional information about the EOE Program is available in person in the Engineering Education and Research Center (EER) 2.608, online at <http://www.engr.utexas.edu/eoe/>, by phone at (512) 471-5953, and by e-mail to [eoee@engr.utexas.edu](mailto:eoee@engr.utexas.edu).

### Women in Engineering Program

The Women in Engineering Program (WEP) has a goal to increase the overall percentage of women enrolled in and graduating from the Cockrell School of Engineering. WEP connects students, educators, and professionals to the world of engineering through recruitment initiatives, supportive structures, and educational services to promote the success and advancement of women in engineering.

WEP's First-Year Initiative (FYI) provides academic and peer support to connect first-year students to the engineering community. The Women in their Second Year of Engineering (WISE) and Consider Every Option (CEO) programs and workshops provide career exploration opportunities to help second-year students and beyond discover possibilities and make informed decisions for the future. Graduates Linked with Undergraduates in Engineering (GLUE) gives students opportunities to gain practical research experience, and WEP leadership and career development seminars help prepare students for leadership roles in the engineering profession.

Additional information about WEP is available in person in the Engineering Education and Research Center (EER) 2.608, online at <http://www.engr.utexas.edu/wep/>; by phone at (512) 471-5650; and by e-mail at [wep@engr.utexas.edu](mailto:wep@engr.utexas.edu).