Bachelor of Science in Electrical Engineering

Electrical engineering is one of the most popular fields in engineering, covering everything related to electrical and electronic devices, including semiconductors at the heart of computers, telecommunications networks that circle the globe and electronic controls that coordinate complex systems in factories and commercial aircraft.

Careers in Electrical Engineering

Electrical engineers design, develop and test a wide range of electronic systems, including microelectronics, electric motors, lighting systems, automotive electronics and navigation systems. Careers are available in the consumer electronics and semiconductor industries as well as in academia, government and the military.

High School Preparation

Engineering education requires strong high school preparation. Pre-engineering students should take at least one semester in trigonometry and one year each in elementary algebra, intermediate and advanced algebra, plane geometry, chemistry and physics, thus preparing to move immediately into demanding college courses in calculus, calculus-based physics and chemistry for science majors. Students also should be able to read rapidly and with comprehension, and to write clearly and correctly.

Electrical Engineering at UT Dallas

The electrical engineering program provides a solid foundation in electrical networks, electronics, electromagnetics, computers, digital systems and communications. Mastery of these areas provides students with the ability to adapt and thrive in their careers.

Students may take the general program or specialize in microelectronics or telecommunications. They may take advanced courses in computer hardware and software, analog and digital communication systems, analog and digital signal processing, micro-electronic components and systems, and guided and unguided wave propagation.

The Jonsson School also offers a wide choice of electives, emphasizes the importance of communication skills and seeks to heighten awareness of the relationship between technology and society.

Students must take 128 hours to graduate, including 42 hours from the University's core curriculum and 76 hours in the major. All lower-division students concentrate on mathematics, science and introductory engineering courses, building competence in these cornerstone areas for future application in upper-division engineering courses.

Internships and Fast-Track

The Erik Jonsson School operates one of the largest internship and cooperative education programs of its kind, averaging more than 1,100 undergraduate and graduate student placements a year at Dallas-area high-tech companies, including Texas Instruments, Intel, Raytheon, Alcatel-Lucent and IBM.

The Fast-Track Program enables exceptionally gifted undergraduate students to include master’s level courses in their undergraduate degree plans. When Fast-Track students graduate with a bachelor’s degree, they are automatically admitted to graduate school at UT Dallas. The hours required to complete the master’s degree are reduced by the number of Fast-Track graduate hours completed up to 15 hours. So a Fast-Track undergraduate who passed 12 hours of graduate coursework would have only 21 hours of graduate coursework left in order to complete a master’s degree.

Erik Jonsson School of Engineering and Computer Science

Strategically located in the Telecom Corridor, home of the second-largest high-tech economy in the U.S., the Jonsson School recently completed a major public-private initiative that greatly expanded its capabilities and included construction of a new state-of-the-art 220,000-square-foot interdisciplinary research building.
With nearly 150 tenured/tenure-track faculty members, 5,800 students, and almost $47 million in research funding, the Jonsson School has six academic departments:

- Bioengineering
- Computer Science
- Electrical Engineering
- Materials Science & Engineering
- Mechanical Engineering
- Systems Engineering

In addition, the school offers a minor in nanoscience and technology.

**Degrees Offered**

**Bachelor of Science:** Biomedical engineering, computer engineering, computer science, electrical engineering, mechanical engineering, software engineering

**Master of Science:** Biomedical engineering, computer engineering, computer science, electrical engineering, materials science and engineering, mechanical engineering, software engineering, systems engineering and management, telecommunications engineering

**Doctor of Philosophy:** Biomedical engineering, computer engineering, computer science, electrical engineering, materials science and engineering, mechanical engineering, software engineering, telecommunications engineering

**Research**

Research efforts under way at the school involve such cutting-edge technology as:

- Carbon nanotubes
- Micro-electromechanical systems
- Semiconductor design and manufacturing
- Wireless networking
- Cochlear implant technology
- Medical imaging
- Speech recognition
- Cybersecurity
- Organic electronics
- Materials characterization
- Physical, chemical and biosensors

**Additional Facts**

- The Jonsson School’s recent growth surge has helped propel its undergraduate programs into *U.S. News & World Report*’s annual rankings of the nation’s top schools of engineering.

- The school’s graduate program has continued its rise through the national *U.S. News* rankings, now placing among the top 45 public university graduate programs and ranking third in Texas.

- The Jonsson School has significantly increased the size of its faculty in recent years, hiring top recent graduates of Stanford University, Cornell University, Purdue University, Georgia Tech and UCLA as well as seasoned professionals from Rutgers University, USC, UC Davis, and from companies such as Freescale Semiconductor and Texas Instruments.

- The Jonsson School features a variety of student organizations that are actively involved in both academic and social activities. Completely student-run, these include the Association for Computing Machinery, the Game Development Group, the National Society of Black Engineers, a chapter of the scientific research society Sigma Xi, the Society of Hispanic Professional Engineers and the Society of Women Engineers.


**Contact Information**

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