Bachelor of Science in Mechanical Engineering

Among engineers, mechanical engineers are versatile because of their ability to design and build a wide array of commercial and industrial products and systems.

Careers in Mechanical Engineering

Mechanical engineering is the second most popular field of engineering after civil engineering. Mechanical engineering involves the analysis, design, manufacturing and maintenance of mechanical and thermal systems. Industries employing mechanical engineers include automotive, aircraft, heating and air conditioning, power generation, oil and gas exploration and production, manufacturing plants, medical device development and a growing amount of nanotechnology.

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; this background makes it possible 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.

Mechanical Engineering at UT Dallas

The mechanical engineering curriculum is expressly tailored to the needs of the modern mechanical engineer, and includes elective courses in topics such as wind energy, MEMS and nano-structure materials.

Students must take 127 hours to graduate, including 42 hours from the University’s core curriculum and 77 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. Coursework will cover all four fundamental areas of mechanical engineering: dynamic systems and controls, thermal fluid systems, manufacturing and design and mechanics and materials.

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 by 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 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.