

Bachelor of Science in Mechanical Engineering

Among engineers, mechanical engineers are the jacks-of-all-trades 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, including motor vehicles, aircraft, heating and air conditioning systems, power generation, watercraft, manufacturing plants, medical devices 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, 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.

Mechanical Engineering at UT Dallas

The mechanical engineering curriculum is expressly tailored to the needs of the modern mechanical engineer, providing instruction in:

- Micro-thermodynamics
- Micro-fluidics
- Other areas essential for 21st-century mechanical engineering

Students must take 127 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. Courses will include thermodynamics, probability and statistics, fluid mechanics, heat transfer, systems and controls, and computer-aided design (CAD).



Internships and Fast-Track

The Erik Jonsson School operates one of the largest internship and cooperative education programs of its kind, averaging more than 500 student placements a year at Dallas-area high-tech companies, including Texas Instruments, Research In Motion, Raytheon, Alcatel-Lucent and Tektronix.

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. 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 192,000-square-foot interdisciplinary research building.

With nearly 3,000 students, more than 100 faculty members and more than \$35 million in research funding, the Jonsson School has five academic departments:

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

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

Degrees Offered

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

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

Doctor of Philosophy: Biomedical engineering, computer engineering, computer science, electrical engineering, geospatial information sciences, materials science and 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 *U.S. News* rankings, now placing among the top 50 public university graduate programs in engineering.

- 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.
- Jonsson School students took first place in their division of the 2010 BattleBots National Championship, and they won second place in the 2008 International Autonomous Underwater Vehicle Competition.

Read what recent Jonsson School graduates think about their education and how it prepared them to be successful in their subsequent careers:

ecs.utdallas.edu/students/profiles/studentprofiles5-10.html

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