Mechanical engineering is a diverse and popular field of engineering. It involves the analysis, design, manufacturing and operation of mechanical and thermal systems. Mechanical engineers are versatile because of their ability to design and build a wide array of products and systems in many industries.

**Careers in Mechanical Engineering**

Industries employing mechanical engineers include automotive, aircraft, heating and air conditioning, power generation, oil and gas, manufacturing, defense/military, medical devices, nanotechnology and many others. The mechanical engineering department diligently works with representatives of many local companies to align our program with the demands of industry. Our students are prepared for internships, employment or graduate education.

**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. Students take 127 hours to graduate, including 42 hours from the University’s core curriculum and 79 hours in the major. Lower-division courses concentrate on math, science, and introductory engineering courses; building competence in these cornerstone areas for future application in upper-division engineering courses. Upper-division coursework covers fundamental areas of mechanical engineering: dynamic systems and controls, thermal fluid systems, manufacturing and design innovation, and mechanics and materials. A two-semester, team-based capstone project, completed in the senior year, gives students an opportunity to apply the knowledge and skills acquired in their previous coursework to a realistic engineering project which they manage from beginning to end.

**Internships**

Gaining experience in engineering practice is an important component of a well-rounded education. The Jonsson School operates a successful internship program that averages more than 1,000 undergraduate and graduate student placements a year at Dallas-area companies. A dedicated staff in the Industrial Practice Programs (IPP) office is available to help students find and prepare for internship opportunities.

**Fast-Track**

The Fast-Track Program enables high-achieving undergraduate students to include master’s level courses as electives 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. Fast-Track allows undergraduate students to obtain up to 15 hours out of the total 33 hours required for the Master of Science degree in Mechanical Engineering.
The Jonsson School is strategically located in the Telecom Corridor, home of the second-largest high-tech economy in the U.S. The School recently completed a major public-private initiative that greatly expanded its capabilities, including construction of a new state-of-the-art 220,000-square-foot interdisciplinary research building, and this year is opening a 200,000-square-foot engineering building. With more than 165 tenured/tenure-track faculty members, 7,400 students, and $53 million in research funding, the Jonsson School has six academic departments:

<table>
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<th>Bioengineering</th>
<th>Computer Engineering</th>
<th>Computer Science</th>
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<tr>
<td>Materials Science and Engineering</td>
<td>Mechanical Engineering</td>
<td>Systems Engineering</td>
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The school also 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

*Joint program between Jindal School of Management and Erik Jonsson School of Engineering and Computer Science.

**Research**

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

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<th>Medical imaging</th>
<th>Speech Recognition</th>
<th>Materials characterization</th>
<th>Cochlear implant technology</th>
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<tbody>
<tr>
<td>Cybersecurity</td>
<td>Organic electronics</td>
<td>Physical, chemical and biosensors</td>
<td>Wireless networking</td>
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<tr>
<td>Carbon nanotubes</td>
<td>Micro-electromechanical systems</td>
<td>Semiconductor design</td>
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**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 25 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, University of Southern California, University of California, Davis, Sandia National Laboratories, 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.