Biomedical engineering is the application of engineering principles and methods to define and solve problems in medicine and biology. Students choose the biomedical engineering field to be of service to people, for the challenge of working with living systems and to apply advanced technology to healthcare delivery.

**Biomedical Engineering at UT Dallas**
A degree in biomedical engineering provides students with a strong foundation in engineering, mathematics, chemistry and biology and teaches them how to solve complex engineering problems in medicine. Rigorous lecture courses provide students the knowledge necessary to succeed in biomedical engineering careers, medical school and graduate school. Laboratory courses engage students to solve complex biomedical engineering problems, communicate effectively and work in complex and dynamic teams.

Engineering education requires strong high school preparation. Students interested in a biomedical engineering path should have at least one semester of trigonometry and at least one year each of elementary algebra, intermediate and advanced algebra, plane geometry, chemistry and physics, to develop their competencies to the highest possible levels to prepare them to move into demanding college courses in calculus, calculus-based physics and chemistry for science majors. It’s also essential that students have the competence to read and comprehend rapidly, and to write clearly and correctly.

The Jonsson School operates one of the largest internship and cooperative education programs of its kind, averaging more than 1,200 undergraduate and graduate student placements a year at Dallas-area high-tech companies, including Texas Instruments, Intel, Raytheon, Alcatel-Lucent and IBM.

A career in biomedical engineering offers the opportunity to work in an exciting and rapidly changing technical world while directly impacting the quality of life for millions suffering from a host of medical conditions. Biomedical engineers connect teams of clinicians, researchers, and traditional engineers to translate patient needs into engineering solutions.

**Careers in Biomedical Engineering**
Satisfying biomedical engineering careers can be found in industrial, healthcare, academic and government settings. The typical biomedical engineer will work in a team environment that may include engineers, clinicians and specialists in both the physical sciences and the life sciences.

**Marketable Skills**
Upon successful completion of the BS in Biomedical Engineering, graduates will be able to enter the workforce with the following skills:

- Engineering concepts and principles to solve problems in biomedical engineering and to provide innovative healthcare solutions
- Design, development, validation, and demonstration of medical devices and diagnostic equipment
- Data analysis and modeling of living systems
- Project management and teamwork
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 recently opened 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>
<thead>
<tr>
<th>Bioengineering</th>
<th>Computer Engineering</th>
<th>Computer Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials Science and Engineering</td>
<td>Mechanical Engineering</td>
<td>Systems Engineering</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Medical imaging</th>
<th>Speech Recognition</th>
<th>Materials characterization</th>
<th>Cochlear implant technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cybersecurity</td>
<td>Organic electronics</td>
<td>Physical, chemical and biosensors</td>
<td>Wireless networking</td>
</tr>
<tr>
<td>Carbon nanotubes</td>
<td>Micro-electromechanical systems</td>
<td>Semiconductor design</td>
<td></td>
</tr>
</tbody>
</table>

**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.

The Fast-Track Program enables exceptionally gifted undergraduate students to include up to 15 hours of 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 up to 15 hours by the number of Fast-Track graduate hours completed.