

Erik Jonsson School of Engineering and Computer Science

Bachelor of Biomedical Engineering



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.

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.



High School Preparation

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.

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.

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

"Few professions require individuals with the intellectual capacity, creativity, technical understanding, and social skills to succeed like biomedical engineering," said Dr. Robert Rennaker, Bioengineering Department Head and Texas Instruments Distinguished Chair in Bioengineering. "The best and brightest are needed to solve the healthcare challenges facing us. Biomedical engineers working with health care providers, corporate leaders, researchers, and government officials will solve these problems, making biomedical engineering one of the most rewarding and challenging careers one could choose to pursue."

Internships and Fast-Track

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. 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.

Contact Information

Office of Admission and Enrollment

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Biomedical Engineering Program

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The University of Texas at Dallas
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Website: be.utdallas.edu

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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:

Bioengineering	Computer Engineering	Computer Science
Materials Science and Engineering	Mechanical Engineering	Systems Engineering

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:

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

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.

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