

# Erik Jonsson School of Engineering and Computer Science

Bachelor of Science in Computer Engineering



Computer engineering combines some of the thought-provoking aspects of computer science and electrical engineering. Computer engineers are particularly important today because embedded systems, which integrate hardware and software, are increasingly common in robotics, cellphones, computer-controlled platforms and elsewhere. Computer engineers are knowledgeable about both hardware and software, so, in particular, they're in high demand wherever embedded systems are used.

## Careers in Computer Engineering

Computer engineering concerns the design, construction, implementation and maintenance of software and hardware components of modern computing systems and computer-controlled equipment.

Computer engineers work with computer systems in a wide range of products, including vehicular control systems, wearable devices, biomedical systems and a vast assortment of household devices.

Computer engineers design computer systems and components, develop and test prototypes and help take them to market. Having evolved over the past three decades as a separate discipline, computer engineering is solidly grounded in theories and principles of computing, mathematics, algorithms, science and engineering, and it applies these theories and principles to solve technical problems through the design of computer hardware, software, networks and processes.



## High School Preparation

Engineering education requires strong high school preparation. Pre-engineering students should have had at least one semester of trigonometry and at least one year each in elementary algebra, intermediate and advanced algebra, plane geometry, chemistry and physics, to prepare them to move immediately into college courses in calculus, calculus-based physics and chemistry for science majors. Pre-computer engineering students should have some experience with elementary programming in a high-level language such as C, C++ or Java. It's also essential that pre-engineering students be able to read well and write clearly.

## Computer Engineering at UT Dallas

The computer engineering, or CE, curriculum is centered on system-level design, computer architecture and computer programming applications. This includes circuits and devices, computer systems and engineering software systems. Computer engineering at UT Dallas is a broadly based on engineering discipline dealing with the sensing, signal and data, processing and transmission of information by making extensive use of electrical engineering and computer science principles. The CE program also encourages students and faculty to develop synergies with disciplines outside of engineering such as the life sciences. CE faculty members are actively involved in advanced research and teaching in all major areas of computer engineering, and the school has a large infrastructure of computing and laboratory resources.

## 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, Amazon, Apple, Google and IBM. The **Fast-Track Program** enables qualified 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 up to 15 hours by the number of Fast-Track graduate hours completed. So, Fast-Track undergraduates can have reduced numbers of hours of graduate coursework left in order to complete a master's degree.

## Contact Information

### Office of Admission and Enrollment

800 West Campbell Road  
Richardson, TX 75080-3021  
Phone: 972-883-2270 or 1-800-889-2443  
Email: [interest@utdallas.edu](mailto:interest@utdallas.edu)  
Website: [utdallas.edu/enroll](http://utdallas.edu/enroll)

### Computer Engineering Undergraduate Advising

Phone: 972-883-2004  
Office: ECSS 2.502  
<https://engineering.utdallas.edu/academics/undergraduate-majors/undergrad-advising/>

### Undergraduate Advising Office, EC31

Erik Jonsson School of Engineering and Computer Science  
The University of Texas at Dallas  
800 West Campbell Road  
Richardson, TX 75080-3021

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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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