Erik Jonsson School of Engineering and Computer Science

Named in honor of one of the three founders of Texas Instruments, Inc. and of The University of Texas at Dallas, the Erik Jonsson School of Engineering and Computer Science provides undergraduate degree preparation for professional practice as an engineer or computer scientist. Particular emphasis is placed on developing strong analytical and problem solving abilities as a foundation for graduate study in these fields.

The school's curricula emphasize electronic information processing devices and technologies that are involved with the acquisition, interpretation, transmission, and utilization of information. The school offers six degree programs: Biomedical Engineering, Computer Engineering, Computer Science, Electrical Engineering, Mechanical Engineering and Software Engineering; a minor in Nanoscience and Nanotechnology is offered by the Department of Materials Science and Engineering. The Biomedical Engineering program offers students the opportunity to combine engineering with biology and physiology. The Computer Science program emphasizes the design and analysis of efficient parallel and sequential algorithms with applications in VLSI layout and routing, distributed networks and operating systems, image processing, computational geometry, automation, and robotics. The Software Engineering program concentrates on all aspects of software development including requirements engineering, software architecture and design, program testing, validation, and quality assurance. The Electrical Engineering program offers students an opportunity to acquire a solid foundation in the broad areas of electrical engineering and emphasizes advanced study in digital systems, telecommunications, and microelectronics. The Mechanical Engineering program focuses on the analysis, design, and manufacturing of mechanical and thermal systems with particular emphasis on energy conversion, harvesting, and utilization, micro- and nano-technology devices and processes, and robotics. The Computer Engineering program is interdisciplinary, as it requires a blend of knowledge from the areas of Electrical Engineering and Computer Science.

All programs are based on a solid foundation of science and mathematics coursework. Students in these programs are given an opportunity to learn to extend their abilities to analyze and solve complex problems and to design new uses of technology to serve today's society. The Engineering programs provide an integrated educational experience directed toward the development of the ability to apply pertinent knowledge to the identification and solution of practical problems in engineering. These programs ensure that the design experience is developed and integrated throughout the curriculum in a sequential development leading to advanced work and includes both analytical and experimental studies. Established cooperative education programs with area industry serve to further supplement design experiences.

The University of Texas at Dallas is located at the heart of a high concentration of companies that specialize in the areas of microelectronics, telecommunications, signal processing, and optics. The Erik Jonsson School of Engineering and Computer Science maintains close relationships with these companies and has established cooperative programs through which students can obtain industrial experience to complement their classroom instruction. Details of specific cooperative programs between Computer Science and Engineering students and local companies are available in the respective program offices.
Industrial Practice Programs

The Industrial Practice Programs (IP Programs or IPP) of the Erik Jonsson School of Engineering and Computer Science include the school's Cooperative Education, Internship, and Curricular Practical Training Programs. These programs combine classroom learning with paid work experience. Qualified students are referred to participating employers seeking candidates for career-related, pre-professional work assignments. The programs enhance a student's education and career preparation by integrating classroom theory with on-the-job performance, providing an understanding of work environments and professional requirements, testing career and professional goals, developing confidence, maturity and skills in human relations, and establishing contacts and interests.

Students are expected to register with and follow the rules of the IP Programs when working in any position titled by the employer as an Internship or a Cooperative Education assignment. Also, the Jonsson School offers one semester credit hour ECSC courses (may be used towards free elective requirements), and a three-semester credit hour course (may be used towards advanced free elective requirements) that provide students the opportunity to evaluate their work experience.

For more information about the IP programs, call (972) 883-4363. The IP Programs Office is located in the Student Services suite (ECS South 2.502).

ECS Policy on Undergraduate Change of Majors

All students wishing to change majors to an ECS major after enrollment should carefully consider the consequences of excessive hours and time to degree completion.

Change of Major Application Minimum requirements:

**All of the following requirements must be met:**

- Applicant has completed 15 or more UT Dallas semester credit hours consisting of major preparatory, major required classes (3+ semester credit hours each) for the requested ECS major and has a minimum GPA of 3.000 in this set of (15 or more) semester credit hours and a minimum cumulative GPA of 3.000;
- Applicant has changed major at UTD at most twice (prior to the current application).

Applications will be processed after current semester grades are posted and up to the first day of classes for the following semester.

Minors

To minor in the Erik Jonsson School of Engineering and Computer Science, students must take a minimum of 18 semester credit hours for the minor, 12 of which must be upper-division semester credit hours. Students who take a minor will be expected to meet the normal prerequisites in courses making up the minor, and should maintain a minimum GPA of 2.000 on a 4.00 scale (C average). Core courses offered by the school may count as lower-division semester credit hours toward the minor. Students may choose to minor in any of the following fields of study:
Department of Computer Science

- **Computer Science**
- **Information Assurance**
- **Software Engineering**

Department of Materials Science and Engineering

- **Nanoscience and Technology**

**Faculty**


**Associate Professors:** Bilal Akin, William Anderson, Leonidas Bleris, Lawrence Chung, Jorge A. Cobb, Vibhav Gogate, D. Todd Griffith, Fatemeh Hassanipour, Seth Hays, Rashaunda Henderson, Kenneth Hoyt, Giacomo (Valerio) Iungo, Golden Kumar, Cong Liu, Arif Malik, Majid Minary, Danieli Rodrigues, Yonas Tadesse, Chadwin D. Young, Rym Zalila-Wenkstern

**Assistant Professors:** Kanad Basu, Rodrigo Bernal Montoya, Benjamin Carrion Schafer, Shuang (Cynthia) Cui, Xianming Dai, Yichen Ding, Jacopo Ferruzzi, Kyle Fox, Joseph Friedman, Matthew Gardner, Qing Gu, Shuang Hao, Heather Hayenga, Yang Hu, Yaqing Jin, Caroline Jones, Chung Hwan Kim, Jin Kim, Justin Koeln, Wei Li, Girgis Obaid, Jae Mo Park, Zhenpeng Qin, Benjamin Raichel, Nicholas Ruozzi, Justin Ruths, Ill Ryu, Kaveh Shamsi, Shashank Sirsi, Tyler Summers, Victor Varner, Shiyi Wei, Guoping Xiong, Armin Zare, Jie Zhang

**Research Professors:** Andrew Marshall, Hisashi (Sam) Shichijo

**Senior Lecturers:** Karen Doore, Patrick Winter

**Professors Emeriti:** Andrew J. Blanchard, C. Robert Helms, Duncan L. MacFarlane, William J. Pervin, Balaji Raghavachari, Don Shaw, Ivan Hal Sudborough, Klaus Truemper

**Associate Professor Emeritus:** Gerald O. Burnham

**UT Dallas Affiliated Faculty:** Dinesh Bhatia, Andrew J. Blanchard, Leonidas Bleris, Carlos A. Busso-Recabarren, Yves J. Chabal, Kyeongjae (KJ) Cho, Xianming Dai, Crystal Engineer, Babak Fahimi, Francesca
Professors of Instruction: Timothy (Tim) Farage, James Florence, Richard Goodrum, Shyam Karrah, Jung Lee, Randall E. Lehmann, Greg Ozbirn, Ricardo E. Saad, William (Bill) Swartz, Marco Tacca


Assistant Professors of Instruction: Eric Becker, Anjum Chida, Scott Dollinger, Ranran Feng, Gity Karami, Kamran Khan, Karen Mazidi, Richard K. Min, Kathleen Myers, Anarag Nagar, Benjamin Porter, Elmer Salazar, Meghana Satpute, Klyne Smith, Nidhiben Solanki