College of Engineering

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Costas Tsatsoulis, Dean

Programs of Study

The College of Engineering, through its disciplines of science, engineering and technology, offers course work leading to the following degrees:

- Doctor of Philosophy with a major in computer science and engineering;
- Master of Science with a major in computer engineering;
- Master of Science with a major in computer science;
- Master of Science with a major in electrical engineering;
- Master of Science with a major in engineering systems;
- Master of Science, and
- Doctor of Philosophy, both with a major in materials science and engineering.
- Master of Science with a major in mechanical and energy engineering;

Master's degrees are offered by all academic departments in the college.

Doctoral programs in the college typically reflect the areas of academic specialization or focus of the various departments (see individual departmental descriptions in this catalog for specific information). All areas offer challenging programs that provide students with the opportunity to become experts in their chosen fields. A major emphasis in the college is to train graduate students in the fundamentals of engineering and scientific research and to prepare them, especially on the doctoral level, to be critical thinkers who can advance human knowledge through research.

The college is composed of the following five academic departments.

- Computer Science and Engineering
- Electrical Engineering
- Engineering Technology
- Materials Science and Engineering
- Mechanical and Energy Engineering

Research

Research interests in the Department of Computer Science and Engineering include computer security, databases, image understanding, visualization, game programming, wired and wireless networks, information fusion, artificial intelligence, natural language processing, computer systems architecture, agent-based systems, collaborative learning, parallel and distributed processing, and numerical analysis.

The research areas in the Department of Electrical Engineering include signal processing, wireless communication, channel modeling and measurement, radar systems, VLSI design and testing, analog and mixed-signal IC design, nano-scale semiconductor device modeling and design, wireless sensor network design, radio-frequency identification (RFID) systems, sensor and sensor interface design, coding theory, bioinformatics, artificial intelligence, pattern recognition and multisensor fusion.

Research capabilities in the Department of Engineering Technology include small target visibility, noise cancellation, VLSI design of antenna array, logic circuit design, applications of technology to education, biomedical optics, pulse oximetry, telemedicine, liquid nitrogen automobiles, mechanical behavior of materials for structures and micromechanical systems, control systems, field emissions and corrosion engineering.

Research programs in the Department of Materials Science and Engineering emphasize hands-on research with modern equipment and facilities. Areas of research include polymers, nanocomposites, electronic materials and molecular electronics.

Research programs in the Department of Mechanical and Energy Engineering emphasize the fundamentals of energy production, management and distribution. Areas of research include advanced thermomechanical conversion; computational fluid dynamics and heat transfer; multiphase flow, mass transfer and combustion; heating, ventilation and air-conditioning; and advanced thermal manufacturing methods with lasers.

Advising

For general information, contact the Toulouse School of Graduate Studies. For specific requirements for graduate degrees, contact the appropriate department chair or graduate advisor.