Department of Electrical Engineering

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Introduction

The Department of Electrical Engineering at the University of North Texas commits to achieving excellence in research and graduate education in all major electrical engineering areas. Our primary goals include: (1) to provide high quality innovative educational programs at the undergraduate and graduate levels to foster learning, ethical standards, and leadership qualities; (2) to pursue excellence in scholarly research at the frontiers of electrical engineering; and (3) to facilitate access through our faculty expertise and our modern facilities to serve the industry, the profession, and other constituents in North Texas, the state and the nation.

Research

Research areas within the department include the following.

RF and sensing areas: Research in this area focuses on the general topics related to advanced RF sensing systems over a wide range of frequencies. The RF sensing systems include radio-frequency identification (RFID) systems, radar systems, remote sensing systems, medical imaging systems, underground penetrating systems and wireless sensing networking systems.

Computer-Aided Design (CAD) and VLSI: The research interests in this area include innovative algorithms for VLSI testing, low-power VLSI design, innovative ASIC and computer architecture, nanoscale logic device modeling, design and simulation, VLSI interconnect modeling and simulation, and VLSI physical design.

Intelligent signal processing: Research in this area is dedicated to the design and development of advanced signal processing algorithms and systems for industrial, space electronic systems and defense technology. The specific research areas include signal detection and estimation, space-time signal processing, signal design and diversity for sensor systems, information fusion from various sensor sources, infrared and microwave imaging, robust signal processing, pattern recognition, and target identification.

Wireless systems: The research interests in this area focus on system-level issues that are critical for the design of high-performance wireless networks and sensor networks. Research topics include measurement and modeling of wireless channels, experimental and theoretical system performance study, integrated communications and positioning, real-time signal processing, and optimum network deployment.

Other research areas in the department include: channel modeling and measurement, innovative wireless imaging systems, analog and mixed-signal IC design, semiconductor device modeling and design, wireless sensor network design, sensor and sensor interface design, coding theory, bioinformatics, artificial intelligence, pattern recognition and multisensor fusion.

Degree Programs

The department offers graduate and undergraduate programs leading to the following degrees:

- Master of Science with a major in electrical engineering (beginning Fall 2007) and
- Bachelor of Science with a major in electrical engineering.

Courses of Instruction

See *Undergraduate Catalog* for Courses of Instruction.