The department provides a solid education in the fundamentals, encouraging students to think analytically, and helping them to learn how to learn. Graduate students can pursue a Master of Science with a thesis or non-thesis option. The program track areas are:

1. Energy/Power Systems,
2. Pulsed Power/Power Electronics
4. Applied Electromagnetics,
5. Program for Semiconductor Product Engineering (PSPE), and Advanced Electronic Systems Engineering (AESE) sponsored by Texas Instruments (TI),
6. Microelectromechanical Systems (MEMS)
7. Integrated Circuits and Systems

Graduate students have the opportunity to be involved with the cutting-edge research sponsored by federal agencies and industrial corporations. These topics include: 1) Pulsed Power and Power Electronics, 2) Nanophotonics/Nanotechnology, 3) Microelectronics, 4) Medical Electronics and Medical Image Processing, 5) Cyber-Physical Systems, 6) Image Processing and Wireless Communications, 7) Sustainable Energy Systems: Smart Electric Power Grids

Graduates are recruited in a variety of fields including telecommunications, energy and electrical power, semiconductors, computer, aerospace, transportation and automotive bioengineering, manufacturing and the service industry, as well as education and research. Employers include Texas Instruments, Lockheed Martin, NASA, ExxonMobil, Raytheon, Intel, and National Labs.
Dr. Mary Baker  
Professor  
Biomedical Signal Processing, Neuroimaging and Cognition, Medical Image Processing

Dr. Stephen Bayne  
Associate Professor  
Power Electronics for Hybrid Electric Vehicles, Design of Compact Power Electronics Converters, Evaluation of Power Devices for Power Electronics & Pulse Power Applications

Dr. Ayton Bernussi  
Associate Professor  
Propagation Losses in Silica-on-Silicon Waveguides, High-Power Laser Diodes, Lossless Propagation in Plasmon-Related Waveguides, Time Resolved Luminescence of Semiconductors, Silicon-on-Insulator Nanodevices

Dr. Tim Dallas  
Professor  
Microelectromechanical Systems (MEMS), Nanocoatings, Wireless Medical Devices

Dr. James Dickens, P.E.  
Charles Bates Thornton Professor  
Grounding & Shielding, Explosive Pulsed Power, High-Power Microwaves, Electric Space Propulsion, Aerospace Electronics

Dr. Zhaoyang Fan  
Associate Professor  
GaN & ZnO-based Electronic and Optoelectronic Devices & Sensors, Thin-Film & Nanostructure Materials

Dr. Richard Gale, P.E.  
Professor  
Micro-Electro-Mechanical-Systems Design, Nanowires

Dr. Michael Giesselmann, P.E.  
Department Chair and Professor  
MW-Level Motor Drives, Compact Pulsed Power Renewable Energy, Power Electronics, Pulsed Power, Power Systems

Dr. Miao He  
Assistant Professor  
Cyber-physical power systems, Monitoring and data fusion towards secure smart grids, Power system operations with high penetration of renewable resources, Online dynamic security assessment of power systems using PMU measurements

Dr. Hongxing Jiang  
Horn Professor and Whitacre Chair  

Dr. Ravindra Joshi  
Professor  
Pulsed Power and Power Electronics

Dr. Tanja Karp  
Associate Professor  
Multirate Signal Processing, Multicarrier Communications, STEM, Engineering Education

Dr. Changzhi Li  
Associate Professor  
Doppler radar for biomedical and structural health monitoring, CMOS RF and analog circuits, Microwave circuits

Dr. Donald Lie  
Keh-Shuei Lu Regents Chair and Professor  
Low-Power RF/Analog Integrated Circuits & System-on-a-Chip (SoC) Design and Test, Interdisciplinary Research on Medical Electronics, Biosensors, & Biosignal Processing

Dr. Jingu Lin  
Horn Professor and Whitacre Chair  

Dr. John Mankowski, P.E.  
Associate Professor  
Electric Space Propulsion, Liquid & Gas Discharge Physics, Railgun Technology, Explosive Pulsed Power, High-Power Microwave Generation

Dr. Sunanda Mitra  
Horn Professor  
Image Processing, Pattern Recognition, Medical Imaging, Compression

Dr. Andreas Neuber, P.E.  
AT&T Professor  
HV Electric Breakdown, Gaseous Electronics, Materials Under Shock, High-Power Microwaves, Pulsed Power Technology

Dr. Sergey Nikishin  
Professor  
Semiconductors (Si, Ge, III-V, chalcopyrites) and dielectrics, Light emitting and laser diodes, photodetectors, solar cells, and FETs, Epitaxial growth and semiconductor processing, Design and fabrication of nano- and micro-electronic and photonic devices

Dr. Brian Nutter, P.E.  
Associate Professor  
Biomedical Imaging, Embedded Systems

Dr. Ranadip Pal  
Associate Professor  
Genomic Signal Processing, Stochastic Modeling & Control, Computational Biology, Image Processing

Dr. Vittal Rao  
Professor  
Electrical Energy Smart Grid Technologies, Smart Structural Systems, Tera-Hertz Technologies, Cyber Systems, Robust Control Systems, Data Fusion & Mining

Dr. Mohammed Saed  
Associate Professor  
Microwaves, Antennas

Dr. Hamed Sari-Sarraf, P.E.  
Professor  
Image Processing, Pattern Recognition

Dr. Tanja Karp  
Associate Professor  
Multirate Signal Processing, Multicarrier Communications, STEM, Engineering Education