Areas of Concentration

The areas of concentration within the department and the courses associated with each area are listed below:

1. Communications and Networking

   EE 7370 Communication and Information Systems
   EE 7375 Random Processes in Engineering
   EE 7376 Introduction to Computer Networks
   EE 8368 Signal Processing for Wireless Communications
   EE 8370 Analog and Digital Communications
   EE 8371 Information Theory
   EE 8372 Cryptography and Data Security
   EE 8375 Error Control Coding
   EE 8376 Detection and Estimation Theory
   EE 8377 Advanced Digital Communications
   EE 8378 Performance Modeling and Evaluation of Computer Networks

2. Signal Processing and Control

   EE 7360 Analog and Digital Control Systems
   EE 7362 Linear System Analysis
   EE 7371 Analog and Digital Filter Design
   EE 7372 Digital Signal Processing
   EE 7373 DSP Programming Laboratory
   EE 7374 Digital Image Processing
   EE 7375 Random Processes in Engineering
   EE 8361 Optimal Control of Deterministic and Stochastic Systems
   EE 8364 Statistical Pattern Recognition
   EE 8365 Adaptive Filtering
   EE 8366 Artificial Neural Networks
   EE 8367 Nonlinear Control
   EE 8368 Signal Processing for Wireless Communications
   EE 8373 Digital Speech Processing
   EE 8374 Fundamentals of Computer Vision
   EE 8376 Detection and Estimation Theory

3. Computer Engineering

   EE 7356 VLSI Design and Lab
   EE 7357 CAE Tools for Structured Digital Design
   EE 7380 Logic and Design Implementation
   EE 7381 Digital Computer Design
   EE 7385 Microprocessors in Digital Design
   EE 8356 Advanced Topics in VLSI Design
   EE 8357 Design of CAD/CAE Tools
   EE 8385 Microprocessor Architecture and Interfacing

4. Electromagnetics and Optics

   EE 7330 Electromagnetics: Guided Waves
   EE 7332 Electromagnetics: Radiation and Antennas
   EE 7333 Antennas and Radiowave Propagation for Personal Communications
   EE 8331 Microwave Electronics
   EE 8332 Numerical Techniques in Electromagnetics
   EE 8333 Advanced Electromagnetic Theory

5. Electronics Materials, Devices and Microelectronics

   EE 7310 Introduction to Semiconductors
   EE 7312 Semiconductor Processing Laboratory
   EE 7314 Introduction to Micromechanical Systems (MEMS) and Devices
   EE 7315 Introduction to Superconducting Devices
   EE 7321 Semiconductor Devices and Circuits
   EE 8310 Electronic Processes
   EE 8322 Semiconductors Lasers
   EE 8325 Optical Radiation Detectors
   EE 8328 Semiconductor Devices
   EE 8355 Transistor Integrated Circuits

It should be noted that not all of the above courses are offered each year. However, in addition to the courses listed, the department also offers several Special Topics courses of interest each semester. These can also be used for an MS Degree if approved by the advisor.