Areas of Concentration (Updated 4/2/13)

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 7377 Embedded Wireless Design Laboratory
EE 7878 Mobile Phone Embedded Design
EE 7379 Optimization in Wireless 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 Topics in 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 7321 Semiconductor Devices and Circuits

EE 7378 Mobile Phone Embedded Design
EE 7381 Digital Computer Design
EE 7385 Microprocessors in Digital Design
EE 7387 Digital Systems 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 7356 VLSI Design and Lab
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.