

The Master of Science in Electrical Engineering requires completion of 30 graduate credits. Six of the 30 credits may be taken in a related discipline.

- **Course Option: 10 courses (8 ECE courses + 2 courses in related discipline)**
- **Thesis Option: 8 courses (6 ECE courses + 2 courses in related discipline + 6 credits of thesis)**

Students are strongly encouraged to select one emphasis area to prepare for a career in that area. To expand academic training and increase employability, students may take courses from two emphasis areas, however taking classes from more than two areas is highly discouraged.

Computer, Embedded Systems & Microelectronics

Recommended Courses:

ECE 5535 Hdl-Based Digital Systems Design
ECE 5542 Introduction to VLSI Design

Additional Courses:

ECE 5533 Analog Integrated Circuit Design
ECE 5537 Mixed Signal Integrated Circuit Design
ECE 5534 Computer Arithmetic
ECE 5642 Advanced VSLI Design

Nanotechnology

Recommended Courses:

ECE 5590 Nanoscale Devices & Circuits
ECE 5633 Nanoelectronics II: Nanoscale Integration & Mfg.
ECE 5647 Emerging Interdisc. Research in Nanotechnology
ECE 5590 Nanoelectromagnetics and Plasmonics

Electromagnetics & Radio Frequency Circuits & Systems

Recommended Courses:

ECE 5513 Advanced Principles of RF/Microwave Engrg
ECE 5590NM Numerical Methods in EM
ECE 5590 Nanoelectromagnetics and Plasmonics
ECE 5590 Introduction to Microwave Engineering

Additional Courses:

ECE 5518 Advanced Radar Systems & Techniques
ECE 5590 RF Experimental Design
ECE 5606 Electromagnetic Scattering & Antenna Theory

Communication, Networking & Signal Processing

Recommended Courses:

ECE 5580 Digital Signal Processing
ECE 5570 Principles of Digital Communication Systems
ECE 5577 Wireless Communications
CSEE 5110 Network Architecture I

Additional Courses:

ECE 477 Introduction to Wireless Networking

Power, Renewable Energy, and Control

Recommended Courses:

ECE 5558 Automatic Control System Design
ECE 5556 Advanced Instrumentation & Control
ECE 5567 Power Systems II
ECE 5590 Introduction to Smart Grid
ECE 5560 Electric Power Distribution Systems
ECE 5557 Fundamentals of Solar Photovoltaic Cells
ECE 5559 Introduction of Photovoltaic Systems
ECE 5590 Advanced Photovoltaic System Engineering
ECE 5590 Wind Energy

Additional Courses:

ECE 436 Power Electronics I
ECE 5563 Sustainable Energy Systems Engineering
ECE 5590 Introduction to Power System Protection
ECE 5568 Economics of Power System

Computer Vision, Multimedia & Machine Learning Emphasis

Recommended Courses:

ECE 5578 Multimedia Communication
ECE 5582 Computer Vision
ECE 5316 Neural & Adaptive Systems
ECE 5586 Pattern Recognition

Additional Courses:

ECE 5584 Advanced Digital Image Processing

Courses offered are subject to instructor availability and student interest. Additional courses may be available.