The Department of Electrical Engineering and Computer Science (EECS) offers advanced studies leading to the M.S. and the Ph.D. degrees as well as a Graduate Certificate in Cybersecurity. Graduate courses and research include topics in computer systems design and applications (hardware and software); communications; control and signal processing; intelligent systems; machine vision and imaging; power systems; power electronics; nano-electronic materials and devices; photovoltaic devices; laser-based advanced processing; renewable energy and smart grid; microelectronics; VLSI design automation and testing; fault tolerance and reliability; computer networks; robotics; computer graphics and visualization; automotive systems; electromagnetics; computer aided design and simulation; cyber security; hardware oriented security and trust; social networking; and high performance computing.

EECS department faculty members participate in five academic and research focus areas. Research activities of faculty often exceed a certain focus area, resulting in faculty participating in more than one focus area. Each focus area has a required and a recommended list of courses for all graduate students pursuing that area of specialization. The courses needed to complete the degree requirements are selected by the student in consultation with an advisor. The five focus areas:

- **High Performance Computing Systems (HPCS)**
  Research in the HPCS focus group includes the following topics:
  - High Performance Scalable Software, Information Systems and Services;
  - Virtual Systems,
  - Computer Networking;
  - Cyber Security;
  - Hardware Oriented Security and Trust;
  - Wireless and Sensor Networks;
  - System software and parallel computing,
  - Numerical Computing and applications,
  - Hypermedia & Multimedia Environments,
  - Reliable Computing,
  - Field Programmable Gate Arrays, and

- **Software and Intelligent Systems (SIS)**
  Intelligent systems embody inquiries into artificial and computational intelligence fields. Research in the SIS focus group includes the following topics:
  - Artificial Intelligence,
  - Machine Learning,
  - Artificial Neural Networks,
  - Data-Mining,
  - Fuzzy Logic and Reasoning,
  - Hybrid Algorithms, and
  - Social Networking.

- **Communications, Control and Signal Processing (CCSP)**
  Research in the CSP focus group includes the following topics:
  - Data Compression and Image Processing;
  - Satellite Communication;
  - Sensor Array Processing;
  - Development of Hardware for Real Time Applications;
  - Computation for Digital Receiver; and
  - Passive Radar Systems.

- **Power Electronics and Energy Systems (PEES)**
  Electrical Engineering basically consists of two primary functions: processing information and processing energy. The research in this focus group is primarily concerned with processing energy in electrical form, but to accomplish this it is necessary to also utilize many techniques from the information sector. Therefore the research in this area depends on fields such as:
  - Power Electronics,
  - Electro-Mechanical Machines,
  - Energy Storage Devices,
  - Control Systems,
  - Computer Analysis Methods and Modeling,
  - Real Time Embedded Systems, and
  - Smart Grids and Meters.

- **Solid-State and RF Devices and Systems (SRDS)**
  The objective of the group are the following:
  - Exploit atomic scale phenomena in developing next generation of solid-state materials and devices targeted for electrical energy generation, electrical power conversation, and electronic sensing applications. The strategy is to develop research that carefully blends physics and electrical engineering disciplines to address growing demand for renewable/alternative energy, electrical energy conversion and storage, photovoltaics, solids-state lighting, low-power sensors and electronics, and harsh environmental electronics.
  - Build on electromagnetic (EM) fundamentals and radio-frequency (RF) and microwave concepts for engineering new high-frequency components, circuits, materials and systems. The focus is to foster research leading to development of commercially viable products, patents, user-friendly CAD tools, publications in top-ranked international conferences and journals, and to secure external funding from various resources.

### Degrees Offered

- **Graduate Certificate in Cyber Security** ([Link](http://utoledo-public.courseleaf.com/graduate/engineering/departments/electrical-engineering-computer-science/graduate-certificate-in-cybersecurity))
- **M.S. in Electrical Engineering** ([Link](http://utoledo-public.courseleaf.com/graduate/engineering/departments/electrical-engineering-computer-science/ms-electrical-engineering))
- **M.S. in Engineering** ([Link](http://utoledo-public.courseleaf.com/graduate/engineering/departments/electrical-engineering-computer-science/ms-engineering))
• Ph.D. in Engineering (http://utoledo-public.courseleaf.com/graduate/engineering/departments/electrical-engineering-computer-science/phd-engineering)
• Under Construction (http://utoledo-public.courseleaf.com/graduate/engineering/departments/electrical-engineering-computer-science/masters-of-cybersecurity20)
• Under Construction (http://utoledo-public.courseleaf.com/graduate/engineering/departments/electrical-engineering-computer-science/ms-cybersecurity20)

EECS 5120 Introduction to Fuzzy Systems and Applications
[3 credit hours]
Term Offered: Fall

EECS 5130 Digital Design
[4 credit hours]
The design of digital systems, design methodologies, hardware description language such as VHDL, behavioral-, dataflow- and structural-level description of digital systems. Implementation technologies including PLDs and FPGAs.
Term Offered: Spring

EECS 5170 Real-Time Embedded Systems Design
[3 credit hours]
Programming applications in a real-time environment. Applications programs in a multitasking environment. Examples from process control, robotics, signal analysis and multiwindow software.

EECS 5200 Feedback Control Systems
[3 credit hours]
Feedback methods for the control of dynamic systems. Topics include characteristics and performance of feedback systems, state variable analysis stability, root locus and frequency response methods and computer simulations.
Term Offered: Spring

EECS 5220 Programmable Logic Controllers
[3 credit hours]
Programmable Logic Controllers (PLCs), programming, sensors, process control algorithms, interfacing of sensors and other I/O devices, simulation and networking.
Term Offered: Spring, Fall

EECS 5240 Power Systems Operation
[3 credit hours]
Single Line Diagrams & Per Unit calculations, Network Matrices & Ybus for systems with uncoupled lines, Load Flow Techniques, Large system Loss Formula using Zbus, Real and Reactive Power Dispatch programming, Power systems relays & protection schemes.
Term Offered: Spring, Fall

EECS 5260 Control Systems Design
[3 credit hours]
A general study of computer-aided design of control systems. Topics include: stability, compensation, pole placement, nonlinear systems and digital systems.
Term Offered: Fall

EECS 5330 Image Analysis And Computer Vision
[3 credit hours]
Imaging geometry, image filtering, segmentation techniques, image representation and description, stereovision and depth measurements, texture analysis, dynamic vision and motion analysis, matching and recognition.
Term Offered: Fall

EECS 5360 Communication Systems
[3 credit hours]
Fourier transform applications in signal analysis and communication. Signals spectra, Filtering, AM and FM modulations, Noise and optimum receiver, Sampling theorem, Multiplexing, PCM Introduction to digital modulators and demodulators.
Term Offered: Spring, Fall

EECS 5370 Information Theory And Coding
[3 credit hours]
Coding concepts, Huffman code, Entropy analysis, Channel and mutual information, Channel capacity and Shannon's theorems, Algebraic coding theory and application to block code and cyclic code, Introduction to convolutional code.
Term Offered: Spring, Fall

EECS 5380 Digital Signal Processing
[3 credit hours]
Discrete Fourier Transform (DFT), Discrete convolution and correlation, Fast Fourier Transform (FFT) and its applications. Design of IIR and FIR digital filters, Multi-rate/channel digital systems, Decimation and Interpolation.

EECS 5390 Wireless And Mobile Networks
[3 credit hours]
Mobile radio propagation; traffic engineering; cellular concept; multiple radio access; multiple division techniques; channel allocation; mobile communication systems; existing wireless systems; network protocols; Ad Hoc and sensor networks; wireless LANS and PANS; recent advances.
Term Offered: Spring, Fall

EECS 5400 Solid State Electronics
[3 credit hours]
A comprehensive treatment of the theory and operation of physical electronic devices emphasizing electrical transport in metals and semiconductors and various models of BJT's and FET's.
Term Offered: Fall

EECS 5410 Electro-Optics
[3 credit hours]
Laser physics, optics, optical waveguides, optical communication systems and electro-optics. Design of light processing and communication systems will be considered with emphasis on optics and optical communication.
Term Offered: Spring, Fall

EECS 5460 Power Systems Management
[3 credit hours]
An advanced study of the management and operation of today's power system. Included are historical developments, utility and operational costs and economics, power generation alternatives, fuel alternatives, renewable applications, transmission and distribution practices, and a discussion of current power system issues, both in the U.S. and abroad.
Term Offered: Spring, Fall
EECS 5470 Electronic Design
[3 credit hours]
Principles and techniques of analog active circuit design. Selected design problems are given; working circuits using standard parts are designed and laboratory tested. A design notebook is kept.
Term Offered: Spring

EECS 5480 Power Electronics I
[3 credit hours]
Term Offered: Fall

EECS 5490 Electronic Energy Processing II
[3 credit hours]
Resonant dc-dc converters. DC-AC inverters and harmonic analysis. Variable-speed motor drives. Laboratory design and analysis of various electronic energy processing circuits.
Prerequisites: EECS 5480 with a minimum grade of C
Term Offered: Spring

EECS 5500 Programming for the World Wide Web
[3 credit hours]
Fundamental concepts and programming languages for constructing contemporary websites. Differences and similarities between procedural, object-oriented, and scripting languages. Topics include HTML, Javascript, CSS, XML, Ajax, PHP, ASP.net, Three.js, and related technologies, as well as their impact on the programming process.
Term Offered: Spring

EECS 5520 Advanced Systems Programming
[4 credit hours]
This course examines pertinent concepts of systems programming. Topics covered include: synchronization, distributed programming models, kernel design, peripheral handling, file systems and security history and methods.
Term Offered: Spring

EECS 5530 Computer Graphics I
[4 credit hours]
An introduction to typical computer graphics systems and their operation. Interactive techniques will be introduced as well as representations and projections of three-dimensional images. Exercises using graphics equipment are assigned.
Term Offered: Fall

EECS 5540 Computer Graphics II
[4 credit hours]
Examines current topics related to realistic and representative 3D computer graphics. Topics include curve and surface geometry, solid modeling, raytracing, radiosity and real-time computer graphics.

EECS 5560 Database Systems I
[3 credit hours]
The following topics are covered: relational database modeling, query languages, design issues and implementation issued of databases. An appropriate database language is introduced and used to demonstrate principles.
Term Offered: Fall

EECS 5590 Human Computer Interface Design
[3 credit hours]
This course presents the fundamental theory and practice of design, implementation and evaluation of human-computer interfaces.
Term Offered: Spring

EECS 5600 Solid State Devices
[3 credit hours]
Theory and operation of physical electronic devices. Electrical transport in metals, semiconductors and models of BJT’s and FET’s. Optoelectronic devices and integrated circuits. Laboratory includes hands-on experimentation with basic semiconductor fabrication processes.
Term Offered: Spring

EECS 5610 Digital VLSI Design I: Basic Subsystems
[4 credit hours]
CMOS process technologies. CMOS logic families. Custom and semicustom design. Subsystem design; adders, counters, multipliers. System design methods. VLSI design tools.
Prerequisites: EECS 3400 with a minimum grade of D-

EECS 5720 Fundamentals of Cyber Security
[3 credit hours]
This course introduces the concept of cyber security, its interdisciplinary nature, and its relevance to national security, businesses, society, and individuals. Concepts that will be discussed include cyber security terminologies, technologies, protocols, threat analysis, security principles, security mechanisms, policies, forensics, incidence response, and methods/practices in use to secure systems. Additional real-world security problems will be introduced using hands-on experiments.
Term Offered: Fall

EECS 5740 Artificial Intelligence
[3 credit hours]
This course explores the topic of intelligent software agents with a emphasis on hands-on design of adaptive problem-solving agents for environments of increasing complexity ranging from single-agent computer games to complex real-world multi-agent environments.
Term Offered: Spring

EECS 5750 Machine Learning
[3 credit hours]
This course emphasizes learning algorithms and theory including concept, decision tree, neural network, comptational, Bayesian, evolutionary, and reinforcement learning.
Prerequisites: (MIME 4000 with a minimum grade of D- and MATH 2890 with a minimum grade of D- and EECS 2110 with a minimum grade of D-)
Term Offered: Fall

EECS 5760 Computer Security
[3 credit hours]
Survey of computer security concepts: ethics and responsibility, OS vulnerabilities and intrusion detection, viruses and worms, defensive strategies including secret/public key cryptosystems, firewalls and decays.
Prerequisites: EECS 2110 with a minimum grade of C- and EECS 3540 with a minimum grade of C-
Term Offered: Fall
EECS 5930 Electrical Engineering & Computer Science Seminar
[1 credit hour]
All graduate students are expected to attend the seminars and to prepare a report summarizing their experiences, questions and the impact of the seminar series. Students will also present their thesis and dissertation results.
Term Offered: Spring, Fall

EECS 5920 Projects
[1-4 credit hours]
Independent research project with intensive investigation into an area of practical interest to the student and the instructor.
Term Offered: Spring, Summer, Fall

EECS 5910 Advanced Computer Architecture
[3 credit hours]
Architectural development in computer systems and scalability. Processors and arithmetic algorithms. Memory hierarchy, shared memory and cache architecture. Pipeline, superscaler and vector organization.
Term Offered: Fall

EECS 5980 Special Topics in EECS
[1-4 credit hours]
Pilot offerings of new courses involving emerging topics of interest are introduced using this number. One credit per lecture hour or 2.5 lab hours per week.
Term Offered: Spring, Fall

EECS 6110 Advanced Computer Architecture
[3 credit hours]
Architectural development in computer systems and scalability. Processors and arithmetic algorithms. Memory hierarchy, shared memory and cache architecture. Pipeline, superscaler and vector organization.
Term Offered: Fall

EECS 6120 Computer Systems Performance And Reliability
[4 credit hours]
Prerequisites: (EECS 2100 with a minimum grade of D- and MIME 4000 with a minimum grade of D-)
EECS 6410 Advanced Electromagnetic Components
[3 credit hours]
Maxwell’s equations, transmission line theory, technology CAD, circuit modeling of magnetics, antenna design, electromagnetic interference (EMI), signal integrity.
Term Offered: Fall

EECS 6420 Computer-Aided Modeling and Design of Circuits
[3 credit hours]
Introduction to computer aided design, classification of CAD operations, modified nodal admittance matrix, frequency-domain analysis, time-domain analysis of nonlinear circuits, sensitivity analysis, high-frequency modeling and design.
Term Offered: Fall

EECS 6450 Advanced Power Electronics
[3 credit hours]
Dynamic analysis of DC-DC power conversion circuits. State space and converter transfer functions. Analytical semiconductor device modeling techniques. Sinusoidal pulse width modulation in inverter circuits. Isolated DC-DC converters.
Prerequisites: EECS 5480 with a minimum grade of D-

EECS 6550 Software Specification And Design
[3 credit hours]
This course covers the software development steps of specification, requirements analysis and design in depth. Computer-human interfaces are also discussed.
Term Offered: Spring, Fall

EECS 6570 Intelligent Systems
[3 credit hours]
Heuristic search, game playing, constraint satisfaction, knowledge representation and reasoning with first order logic, planning, probabilistic modeling and reasoning, and learning.
Term Offered: Fall

EECS 6580 Wireless Sensor Networks
[3 credit hours]
Single node and network architecture, design principles, medium access control, naming and addressing, synchronization, localization and positioning, topology control, routing protocols, data-centric networking, and information and data aggregation.
Term Offered: Spring

EECS 6610 Principles of CMOS Devices
[3 credit hours]
Term Offered: Spring

EECS 6630 Digital and VLSI System Testing
[3 credit hours]
In depth study of testing techniques for digital and VLSI circuit including memory and logic, field programmable gate arrays, system on chips, and quantum dot cellular automata circuits.
Term Offered: Spring

EECS 6660 Field Programmable Gate Arrays
[3 credit hours]
Introduction to FPGA’s. Programming technology. Logic block architectures. Routing architectures. FPGA based VLSI design. Design tools.
Term Offered: Fall

EECS 6830 Power Semiconductor Device Engineering
[3 credit hours]
Semiconductor material physics, electrical transport physics, power switching, power amplification characteristics, power diodes, power MOSFETs, power MOS-bipolar devices, thyristors, and emerging devices.
Term Offered: Fall

EECS 6840 Compound Semiconductors and Devices
[3 credit hours]
This course will cover the fundamentals of various compound semiconductor materials and devices, including materials and device physics, diodes, GaAs MESFETS, optoelectronic and photovoltaic devices and structures.
Term Offered: Fall

EECS 6860 RF Integrated Circuits
[3 credit hours]
Wireless principles, Passive RLC networks, Passive IC component characteristics, MOS Device Physics, Distributed Systems, Smith Chart and s-parameters, Bandwidth estimation, high frequency amplifier design, voltage references, noise, LNA design, mixers, feedback systems, RF power amplifiers, PLLs, Oscillators and Synthesizers, Phase Noise, Transceiver architectures.
Term Offered: Spring

EECS 6900 Independent Research
[1-6 credit hours]
Selected topics from current EE and CSE research with intensive investigation into recent literature in an area of mutual interest to the student and the instructor.
Term Offered: Spring, Summer, Fall

EECS 6910 EECS Graduate Seminar
[1 credit hour]
Students will attend seminars and prepare a report reflecting their learning, questions and the impact of the seminar series. Students will also present their thesis or project plan and initial research results.
Term Offered: Spring

EECS 6960 Master’s Graduate Research And Thesis
[1-9 credit hours]
Graduate research towards the completion of a Master’s degree.
Term Offered: Spring, Summer, Fall

EECS 6980 Special Topics In Electrical Engineering & Computer Science
[1-5 credit hours]
Selected topics in the field of Electrical Engineering and Computer Science in areas of special interest to the class and the professor.
Term Offered: Spring, Summer, Fall
EECS 6990 Independent Study
[1-3 credit hours]
In depth study of a selected topic of mutual interest to the student and the instructor.
Term Offered: Spring, Summer, Fall

EECS 7520 Advanced Systems Programming
[4 credit hours]

EECS 8110 Advanced Computer Architecture
[3 credit hours]
Architectural development in computer systems and scalability. Processors and arithmetic algorithms. Memory hierarchy, shared memory and cache architecture. Pipeline, superscaler and vector organization.
Term Offered: Fall

EECS 8120 Computer Systems Performance And Reliability
[4 credit hours]
Prerequisites: (EECS 2100 with a minimum grade of D- and MIME 4000 with a minimum grade of D-)

EECS 8180 Biologically Inspired Computing
[3 credit hours]
Introduction to Computational Techniques inspired from Biology. Evolutionary Computations, Evolutionary Fuzzy Systems and Evolutionary Neural Systems, Swarm Intelligence, and Artificial life.
Term Offered: Spring

EECS 8190 Renewable Energy and Smart Grid
[3 credit hours]
Electric power systems nowadays are undergoing significant changes worldwide in order to become cleaner, smarter, and more reliable. This course examines a broad spectrum of topics relevant to theses changes.
Term Offered: Fall

EECS 8220 Nonlinear Control Systems
[3 credit hours]

EECS 8230 Optimal Control Theory
[3 credit hours]
Optimization of dynamic systems by the calculus of variations and Pontryagin's Maximum Principle. Solution of optimal control problems using direct and indirect computational methods. Applications include constrained state and/or control parameters.
Prerequisites: EECS 4200 with a minimum grade of D-

EECS 8250 Advanced Digital Signal Processing
[3 credit hours]
Documentation/interpolation filter design, wavelet transforms, spectral estimation, multirate, adaptive, radar and array signal processing techniques, beamforming, simulation of signal processing algorithms via MATLAB or equivalent.
Term Offered: Spring

EECS 8300 Random Signals And Optimal Filters
[3 credit hours]
Description and properties of random signals and their processing by optimal filters. Correlation and power spectra. GRP. Narrowband noise. Signal detection (matched filter) and estimation (Wiener and Kalman filters).
Term Offered: Fall

EECS 8320 Data Compression For Multimedia Communication
[3 credit hours]
Multimedia information representation, Huffman, run length and arithmetic coding, predictive, transform, pyramid coding: vector quantization and subband coding; wavelet-based coding, data packetization, error resilience coding, multimedia compression standards, JPEG, MPEG coding.
Term Offered: Spring

EECS 8340 Modern Communications Engineering I
[3 credit hours]
Introduction to detection and estimation and applications to the bandpass signals, Binary and M-ary digital modulation techniques. Error-control convolutional coding, Trellis Coded Modulation (TCM), Spread Spectrum (SS) communication techniques.
Term Offered: Fall

EECS 8350 Modern Communications Engineering II
[3 credit hours]
Digital transmission over Gaussian/non-Gaussian channels, Satellite systems (GEO and LEO) and multiple accesses, Cellular and satellite communication network, Mobile/wireless Personal communication services (PCS) and its networking.
Prerequisites: EECS 6340 with a minimum grade of C
Term Offered: Spring

EECS 8390 Modeling And Performance Evaluation Of Communication Networks
[3 credit hours]
Term Offered: Spring, Fall

EECS 8410 Advanced Electromagnetic Components
[3 credit hours]
Maxwell's equations, transmission line theory, technology CAD, circuit modeling of magnetics, antenna design, electromagnetic interference (EMI), signal integrity.
Term Offered: Fall

EECS 8420 Computer-Aided Modeling and Design of Circuits
[3 credit hours]
Introduction to computer aided design, classification of CAD operations, modified nodal admittance matrix, frequency-domain analysis, time-domain analysis of nonlinear circuits, sensitivity analysis, high-frequency modeling and design.
Term Offered: Fall
EECS 8450 Advanced Power Electronics
[3 credit hours]
Dynamic analysis of DC-DC power conversion circuits. State space and
converter transfer functions. Analytical semiconductor device modeling
techniques. Sinusoidal pulse width modulation in inverter circuits.
Isolated DC-DC converters.
Prerequisites: EECS 5480 with a minimum grade of D-

EECS 8550 Software Specification And Design
[3 credit hours]
This course covers the software development steps of specification,
requirements analysis and design in depth. Computer-human interfaces
are also discussed.
Term Offered: Spring, Fall

EECS 8570 Intelligent Systems
[3 credit hours]
Heuristic search, game playing, constraint satisfaction, knowledge
representation and reasoning with first order logic, planning, probabilistic
modeling and reasoning, and learning.
Term Offered: Fall

EECS 8580 Wireless Sensor Networks
[3 credit hours]
Single node and network architecture, design principles, medium access
control, naming and addressing, synchronization, localization and
positioning, topology control, routing protocols, data-centric networking,
and information and data aggregation.

EECS 8610 Principles of CMOS Devices
[3 credit hours]
MOSFET Device Physics, CMOS Fabrication, Scaling Trends,
Characterization, Technology CAD, Digital Analog and RF Applications,
Advanced Device Concepts, Nanoelectronics.
Term Offered: Spring

EECS 8630 Digital and VLSI System Testing
[3 credit hours]
In depth study of testing techniques for digital and VLSI circuit including
memory and logic, field programmable gate arrays, system on chips, and
quantum dot cellular automata circuits
Term Offered: Spring

EECS 8660 Field Programmable Gate Arrays
[3 credit hours]
Introduction to FPGA's. Programming technology. Logic block
architectures. Routing architectures. FPGA based VLSI design. Design
tools.
Term Offered: Fall

EECS 8670 Hardware Oriented Security and Trust
[3 credit hours]
The course covers the following topics: Hardware Security Basics,
Physical Unclonable Function (PUF), Metrics for Evaluating PUFs, Split
Manufacturing, Hardware Trojans, Detection of Hardware Trojans, Built-
In Self-Repair Hardware Circuits, Security of FPGAs, Machine Learning
Term Offered: Spring

EECS 8830 Power Semiconductor Device Engineering
[3 credit hours]
Semiconductor material physics, electrical transport physics, power
switching, power amplification characteristics, power diodes, power
MOSFETs, power MOS-bipolar devices, thyristors, and emerging devices.
Term Offered: Fall

EECS 8840 Compound Semiconductors and Devices
[3 credit hours]
This course will cover the fundamentals of various compound-
semiconductor materials and devices, including materials and device
physics, diodes, GaAs MESFETS, optoelectronic and photovoltaic devices
and structures.
Term Offered: Spring

EECS 8860 RF Integrated Circuits
[3 credit hours]
Wireless principles, Passive RLC networks, Passive IC component
characteristics, MOS Device Physics, Distributed Systems, Smith Chart
and s-parameters, Bandwidth estimation, high frequency amplifier design,
voltage references, noise, LNA design, mixers, feedback systems, RF
power amplifiers, PLLs, Oscillators and Synthesizers, Phase Noise,
Transceiver architectures.
Term Offered: Fall

EECS 8870 Advanced Analog Integrated Circuits
[3 credit hours]
Integrated Circuit Technology, Device Modeling, MOS Switches, Current
Sinks and Sources, Bandgap References, Amplifiers, Operational
Amplifiers, Comparators, Switched-Capacitor Circuits, Data Converters
Term Offered: Fall

EECS 8900 Independent Research
[1-6 credit hours]
Selected topics from current EE and CSE research with intensive
investigation into recent literature in an area of mutual interest to the
student and the instructor.
Term Offered: Spring, Summer, Fall

EECS 8910 EECS Graduate Seminar
[1 credit hour]
Students will attend seminars and prepare a report reflecting their
learning, questions and the impact of the seminar series. Students will
also present their thesis or project plan and initial research results.
Term Offered: Spring, Fall

EECS 8960 Dissertation
[1-15 credit hours]
Graduate research towards completion of a doctoral degree.
Term Offered: Spring, Summer, Fall

EECS 8980 Current Topics In Electrical Engineering & Computer Science
[1-5 credit hours]
Current topics in the field of Electrical Engineering and Computer Science
in areas of special interest to the class and the professor. Students will be
expected to complete a written project based on a review of the research
literature of the area covered in this course.
Term Offered: Spring, Summer, Fall
EECS 8990 Independent Study
[1-3 credit hours]
In depth study of a selected topic of mutual interest to the student and the instructor.
Term Offered: Spring, Summer, Fall