Electrical Engineering: Standard Program Electrical Electives

Program Requirements:
- In the standard Electrical Engineering program, seven Technical Elective Courses are required. At least 4 must be taken from the Group A list shown below. The remainder can be either from the below Group A or B lists.

Group A Technical Elective courses: must take 4
ECE 3650 Electric Machines
ECE 4100 Microelectronic Fabrication
ECE 4140 Power Transmission Lines
ECE 4160 Control Engineering
ECE 4180 Introduction to Robotics
ECE 4200 Electric Filter Design
ECE 4250 Digital Communications
ECE 4270 Antennas
ECE 4280 Engineering Electromagnetics
ECE 4290 Microwave Engineering
ECE 4300 Electrical Energy Systems 1
ECE 4310 Electrical Energy Systems 2
ECE 4360 High Voltage Engineering
ECE 4370 Power Electronics
ECE 4390 Engineering Computations 3E
ECE 4420 Digital Control
ECE 4580 Optoelectronics
ECE 4610 Biomedical Engineering and Instrumentation
ECE 4830 Signal Processing 2
ECE 4860 Biomedical Optics
ECE 4860 Design of RF Devices and Wireless Systems

Group B Technical Elective courses:
ECE 3700 Telecom Networking
ECE 3760 Digital System Design 1
ECE 3770 Digital System Design 2
ECE 4240 Microprocessor Interfacing
ECE 4440 Computer Vision
ECE 4520 Simulation & Modelling
ECE 4530 Parallel Processing
ECE 4540 Wireless Networks
ECE 4740 Digital System Implementation
ECE 4850 Performance Evaluation for Communications & Computer Eng.
ECE 4860 Materials Characterization
COMP 2140 Data Structures and Algorithms
COMP 3190 Intro. Artificial Intelligence
COMP 4180 Intelligent Mobile Robotics
COMP 4360 Machine Learning
MATH 3120 Applied Discrete Mathematics
MATH 3700 Applied Complex Analysis
MATH 3810 Partial Differential Equations
PHYS 2260 Optics
PHYS 3220 Medical Physics and Physiological Measurement
PHYS 3640 Electro- and Magnetodynamics and Special Relativity
PHYS 4590 Advanced Optics

Allowed Courses for Natural Science

Program Requirements:
- One Natural Science Elective course must be taken by Electrical Engineering students.
- This course can be taken anytime during the student’s program.

Natural Science Electives:
- BIOL 1020 Biology 1: Principles & Themes
- BIOL 1300 Economic Plants
- BIOL 1410 Anatomy of the Human Body
- CHEM 1310 Introduction to Physical Chemistry
- CHEM 1320 Introduction to Organic Chemistry
- ENME 2050 Introduction to Engineering Mechanics
- GEOL 1340 The Dynamic Earth
- GEOL 2250 Geology for Engineers
- MBIO 1220 Essentials of Microbiology
- PHYS 1810 General Astronomy 1
- PHYS 1820 General Astronomy 2
- PHYS 2260 Optics
- PHYS 2380 Quantum Physics 1
- PHYS 2650 Classical Mechanics 1
- PHYS 3180 Stars
- PHYS 3220 Medical Physics and Physiological Measurement

Qualified Engineering Design Technical Electives

Program Requirements:
- Of their required Technical Electives, EE students are required to complete one Technical Elective that possesses substantial Qualified Engineering Design content, as defined by CEAB accreditation requirements.
- The below list of Qualified Engineering Design electives is updated each academic year. Students should note that particular courses may not be available every year.

Technical Electives with Qualified Engineering Design content, 2013-2014 year:
- ECE 3700 Telecommunications Networks
- ECE 4100 Microelectronic Fabrication
- ECE 4160 Control Engineering
- ECE 4240 Microprocessor Interfacing
- ECE 4250 Digital Communications
- ECE 4270 Antennas
- ECE 4290 Microwave Engineering
- ECE 4370 Power Electronics
- ECE 4390 Engineering Computations 4E
- ECE 4610 Biomedical Instrumentation & Signal Processing
- ECE 4860 Design of RF Devices & Wireless Systems