Minor in Electrical Engineering

The minor in Electrical Engineering is designed to allow students with quantitative and scientific aptitudes and interests to acquire a basic level of competence in a particular area of electrical engineering. It can bring significant career benefits to majors in science or other engineering programs.

Admission and Constraints

Any degree candidate who has earned at least 54 credits, with a cumulative grade point average (GPA) of 2.000 and with at least a 2.500 GPA in the major, may request admission to a minor in Electrical Engineering from the Chairperson of the department of Electrical and Computer Engineering. A total of at least 19 credits of Electrical and Computer Engineering (ECE) courses must be taken, following a plan of study approved by an advisor in the Department of Electrical and Computer Engineering and signed by the Chairperson of the Electrical and Computer Engineering department. At least half of the credits required for the minor must be taken at the University of Massachusetts Dartmouth and the GPA in the minor must be at least 2.000.

Each plan must include the following courses (7 credits):

(1) ECE 201 and ECE 202; OR
(2) ECE 211, ECE 212, and ECE 251.

In addition, one specialization must be completed. Typical specializations are:

**ELECTROMAGNETIC THEORY (12 credits)**
- ECE 335 Electromagnetic Theory I
- ECE 336 Electromagnetic Theory II
- Choose two of the following four courses:
  - ECE 431 Antennas and Propagation
  - ECE 433 Advanced Electromagnetic Theory
  - ECE 435 Microwave Theory I
  - ECE 436 Microwave Theory II

**COMMUNICATION THEORY (12 credits)**
- ECE 321 Continuous-Time Linear Systems
- ECE 384 Random Signals and Noise
- ECE 471 Communication Theory
- Choose one of the following two courses:
  - ECE 432 Wireless Communications
  - ECE 472 Advanced Communications Systems

**ELECTRONICS (12 credits)**
- ECE 260 Digital Logic and Computer Design
- ECE 311 Digital Electronics
- ECE 312 Analog Electronics
- ECE 411 Active Circuits I

**POWER (12.5 credits)**
- ECE 260 Digital Logic and Computer Design
- ECE 311 Digital Electronics
- ECE 335 Electromagnetic Theory I
- Choose one of the following three courses:
  - ECE 441 Electromechanical Energy Conversion
  - ECE 442 Power Electronics
  - ECE 443 Power Systems I
SIGNAL PROCESSING (12 credits)
ECE 321 Continuous-Time Linear Systems
ECE 322 Discrete-Time Linear Systems
ECE 384 Random Signals and Noise
ECE 475 Digital Signal Processing

VLSI (12 credits)
ECE 260 Digital Logic and Computer Design
ECE 311 Digital Electronics
ECE 413 Introduction to VLSI Design
ECE 414 Analog Integrated Circuit Design