



2009-2012 Electrical Engineering Minor

Electrical Engineering & Computer Science Department

Undergraduate Advising Office

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As the lines between engineering and scientific disciplines become increasingly blurred, many students are forced to make tough decisions about which major to choose. Traditionally there has been no formal mechanism within the College of Engineering to expose students to substantial academic preparation in more than one department, other than a double-major option, which generally entails a substantial investment of time. A Minor in Electrical Engineering (EE), offered through the EECS Department, is designed to fill this void by providing an avenue for a diverse education for students outside of the EECS department. Due to the extensive breadth of EE discipline areas, students seeking a minor in EE have a spectrum of choices for the program paths they choose. Path options include Applied Electromagnetics, Circuits, Communications, Control Systems, Optics, Power and Energy, Signal Processing, and Solid State.

Electrical Engineering (EE) Declaration Requirements:

To declare a minor in EE, you must be a CoE, LSA, or Ross student and:

- (1) Have completed at least one full term at UM Ann Arbor
- (2) Have an overall UM GPA of 2.0 or better in courses taken at the UM Ann Arbor campus and be in good standing
- (3) Have completed or earned credit by exam or transfer for at least one course in each of these categories
 - a. Calculus (e.g. Math 115, 116, 156)
 - b. Calculus based physics lectures (e.g. Physics 140, 160) or chemistry lectures (e.g. Chem 130)
 - c. Required engineering courses (Engr 100, 101, 151)

Minimum Program Requirements

A minimum of 15 credits must be completed with a grade of a C or better. At least one elective course must be at the 400-level.

Required course:

EECS 215: Introduction to Circuits

One of the following program core courses:

EECS 216: Signals and Systems

EECS 230: Electromagnetics I

EECS 270: Introduction to Logic Design

EECS 320: Introduction to Semiconductor Devices

Two of the following courses (at least one course at the 400-level, no duplicates):

EECS 216: Signals and Systems

EECS 230: Electromagnetics I

EECS 270: Introduction to Logic Design

EECS 320: Introduction to Semiconductor Devices

EECS 311: Electronic Circuits

EECS 312: Digital Integrated Circuits

EECS 330: Electromagnetics II

EECS 334: Principles of Optics

EECS 370: Computer Architecture

EECS 373: Design of Microprocessor Based Systems

EECS 411: Microwave Circuits I

EECS 413: Monolithic Amplifier Circuits

EECS 414: Introduction to MEMS

EECS 418: Power Electronics

EECS 419: Electric Machinery and Drives

EECS 420: Physical Principles Underlying Smart Devices

EECS 421: Properties of Transistors
 EECS 423: Solid-State Device Laboratory
 EECS 425: Integrated Microsystems Lab
 EECS 427: VLSI Design I
 EECS 429: Semiconductor Optoelectronic Devices
 EECS 430: Radiowave Propagation & Link Design
 EECS 434: Principles of Photonics
 EECS 451: Digital Signal Processing & Analysis
 EECS 452: Digital Signal Processing Lab
 EECS 455: Digital Communication Signals & Systems
 EECS 460: Control Systems Analysis & Design
 EECS 461: Embedded Control Systems
 EECS 463: Power Systems Design and Operation
 EECS 470: Computer Architecture
 EECS 530: Electromagnetic Theory I

Sample path options:

Path Option	Required Core	Path Prep Core	Elective 1	Elective 2
Systems	215	216	451, 455 or 460	451, 452, 455, 460 or 461 (no duplicates)
Electromagnetics and Optics	215	230	330 or 334	411, 430, 434, 438 or 530
Circuits and Solid State	215	216	311, 312 or 320	411, 413, 414, 420, 421, 423, 425, 427 or 429

For more information or to make an advising appointment: <http://www.eecs.umich.edu/eecs/undergraduate>
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