Electrical and Computer Engineering (ECE) transforms our day-to-day lives through a multitude of innovative technologies and products related to energy and information exchange. The ECE minor is intended to expose students from other disciplines to the unlimited opportunities for innovation in this exciting field, and to the methodologies and tools used by electrical and computer engineers for the exploration and design of new technologies and products. The minor is open to undergraduates outside the ECE Department. Computer Science majors cannot elect the Computer Engineering Option within the minor.

### Code Title Hours

**Circuits Requirement:**
- ECE 110 Introduction to Electronics 3
- ECE 205 Electrical and Electronic Circuits 3

**Programming Requirement:**
- ECE 313 Probability with Engrg Applic 3
- IE 300 Analysis of Data 3
- BIOE 310 Computational Tools for Biological Data 3
- MATH 461 Probability Theory 3 or 4
- MATH 463 Statistics and Probability I 4
- CEE 202 Engineering Risk & Uncertainty 3
- CS 361 Probability & Statistics for Computer Science 3

A probability or statistics course chosen from an approved list below: 3-4
- ECE 316 Probability Theory
- IE 300 Analysis of Data
- BIOE 310 Computational Tools for Biological Data
- MATH 461 Probability Theory
- MATH 463 Statistics and Probability I

Select one of the following options below. Both the Core and Advanced Core courses from Option A or B must be completed

**A. Electrical Engineering Option**

Core requirement:
- ECE 210 Analog Signal Processing 4

Advanced Core Electives:
- Two ECE courses chosen from an approved list below:
  - ECE 310 Digital Signal Processing 3
  - ECE 329 Fields and Waves I 3
  - ECE 330 Power Ckts & Electromechanics 3
  - ECE 340 Semiconductor Electronics 3
  - ECE 342 Electronic Circuits
  - ECE 343 & ECE 343 and Electronic Circuits Laboratory 4

**B. Computing Engineering Option**

Core Requirement:
- ECE 120 Introduction to Computing 4
- ECE 220 Computer Systems & Programming 4

Advanced Core Electives:

Two ECE courses chosen from an approved list below:
- ECE 385 Digital Systems Laboratory 3
- ECE 391 Computer Systems Engineering 4
- ECE 411 Computer Organization & Design 4

Elective ECE Courses to achieve a minimum of 18 hours of ECE course work. 0-5

### Footnotes

1 If the student will be taking ECE 220 following ECE 120, this requirement will be waived.

2 Completion of the minor requires a minimum of 18 hours ECE course work. No additional hours are needed in this category if all courses taken to satisfy the previous requirements are ECE courses. Otherwise choose from any 300 and 400 level classes except ECE 316, ECE 317, ECE 396, ECE 397, ECE 496, ECE 499.

for the Minor in Electrical & Computer Engineering

The Grainger College of Engineering (https://grainger.illinois.edu/)
Electrical & Computer Engineering Minor (https://ece.illinois.edu/academics/ugrad/ece-minor/)

Information listed in this catalog is current as of 09/2023