

## Core Electrical Engineering Courses

### Lower Division

EECS 1: Introduction to Electrical Engineering  
 EECS 10: Computational Methods in EE & CE  
 EECS 31: Introduction to Digital Systems  
 EECS 31L: Introduction to Digital Logics Laboratory  
 EECS 50: Discrete-Time Signals and Systems  
 EECS 55: Engineering Probability  
 EECS 70A and 70LA: Network Analysis I and Lab  
 EECS 70B and 70LB: Network Analysis II and Lab

### Upper Division

EECS 145: Electrical Engineering Analysis  
 EECS 150: Continuous-Time Signals & Systems  
 EECS 160A and 160LA: Control Systems Intro & Lab  
 EECS 170A and 170LA: Electronics I and Lab  
 EECS 170B and 170LB: Electronics II and Lab  
 EECS 170C and 170LC: Electronics III and Lab  
 EECS 180A: Engineering Electromagnetics I  
 EECS 159A and 159B: Senior Design Project  
 ENGR 190W: Communications in the Professional World

Electrical Engineering requires that you specialize in one of five specializations. These courses are presented as Spec Electives and would be added to your program upon choosing a specialization.

Options include:

- Communications
- Digital Signal Processing
- Electronic Circuit Design
- RF, Antennas, and Microwaves
- Semiconductors and Optoelectronics

Students must complete a minimum of three courses of technical electives. Technical Electives must be courses not used for the EE degree.

For more details on major requirements go to:  
<http://catalogue.uci.edu/>

## Potential Careers

Computer Hardware Engineer  
 Computer Network Architects  
 Network & Computer Systems Administrators  
 Big Data  
 Cyber Security  
 Computer Design

## Student Involvement Opportunities

### Engineering Campus Resources

**CAMP:** California Alliance of Minority Participation

- <https://camp.uci.edu/>
- Mentorship Program
- Scholarship Opportunities

**OAI:** Office of Access and Inclusion

- <http://tech.uci.edu/access/index.php>
- Free Engineering Course Tutoring
- Mentorship Program

### Engineering Student Organizations

**ESC:** Engineering Student Council

- <http://esc.ukulele.eng.uci.edu/>

**Institute of Electrical and Electronic Engineers**

- <http://ieee.ics.uci.edu/home>

**For more info on Engineering Clubs and Orgs visit:**

- <http://engineering.uci.edu/current/undergraduate/clubs-and-organizations>

# ELECTRICAL ENGINEERING



Some electrical engineers focus in the study of electronic devices and circuits that are the basic building blocks of complex electronic systems. Others study power and the generation, transmission, and utilization of electrical energy. A large group of electrical engineers studies the application of these complex systems to other areas, including medicine, biology, geology, and ecology. Still another controls, telecommunications, wireless communications, and signal processing.

## Sample Program of Study

| Freshmen Year   |                 |                 | Sophomore Year  |               |               |
|-----------------|-----------------|-----------------|-----------------|---------------|---------------|
| Fall            | Winter          | Spring          | Fall            | Winter        | Spring        |
| MATH 2A         | MATH 2B         | MATH 2D         | MATH 3A         | MATH 3D       | MATH 2E       |
| ENGR 1A         | GENERAL ED      | EECS 1          | PHYSICS 7E      | EECS 55       | EECS 50       |
| EECS 10         | PHYSICS 7C+7LC  | PHYSICS 7D+7LD  | EECS 31L        | EECS 70A+70LA | EECS 70B+70LB |
| ENGR 7A*        | ENGR 7B*        | EECS 31         | GENERAL ED      | GENERAL ED    | PHYSICS 51A   |
| Junior Year     |                 |                 | Senior Year     |               |               |
| Fall            | Winter          | Spring          | Fall            | Winter        | Spring        |
| EECS 170A+170LA | EECS 170B+170LB | EECS 170C+170LC | EECS 159A       | EECS 159B     | GENERAL ED    |
| EECS 145        | EECS 150        | SPEC ELECTIVE   | EECS 160A+160LA | TECH ELEC     | TECH ELEC     |
| SPEC ELECTIVE   | EECS 180A       | SPEC ELECTIVE   | SPEC ELECTIVE   | TECH ELEC     | GENERAL ED    |
| SPEC ELECTIVE   | GENERAL ED      | GENERAL ED      | SPEC ELECTIVE   | ENGR 190W     | GENERAL ED    |

\*Engr 7A & 7B optional courses that would count towards one Technical Elective.

Note: Course offerings subject to change.  
 Courses subject to prerequisite requirements.

## Undergraduate Research Opportunities

- Independent Study (199 course)
- Student Project Examples
  - Autonomous Water Quality Monitoring System
  - Rocket Project
  - Smart Shoe Sole
  - Medical Drone System
  - Unmanned Ground Vehicle Forge
- Additional student projects can be found on [projects.eng.uci.edu](http://projects.eng.uci.edu)
- Undergraduate Research Opportunities Program (UROP)

## Potential Research Areas

- Propulsion and Dynamics
- Energy Systems and Environmental Engineering
- Fuel Cell Technologies
- Fluid Mechanics & Turbulence
- Micro/Nano Electro Mechanical Systems (MEMS/NEMS)
- Machine Design
- Robotics
- Structures and Solid Mechanics

## Connect with Industry

- Handshake: Job & Internship Search Tool: [career.uci.edu/students/zotlink.html](http://career.uci.edu/students/zotlink.html)
- Find Employers based on major: [career.uci.edu/students/undergraduate/find-an-internship/buzzfile-company-search-tool/](http://career.uci.edu/students/undergraduate/find-an-internship/buzzfile-company-search-tool/)
- Career Fairs: [career.uci.edu/students/career-fairs.html](http://career.uci.edu/students/career-fairs.html)
- Fall STEM Career Fair
- Fall Career Fair
- Winter Internship & Career Fair
- Winter E-Week EngiTECH Career Fair
- Spring Career Fair

Additional Major Info



Undergraduate Student Affairs Office | 305 Rockwell Engineering Center  
 949-824-4334 | [ugengr@uci.edu](mailto:ugengr@uci.edu) | [engineering.uci.edu](http://engineering.uci.edu)