COMPUTER SCIENCE AND ENGINEERING

The Computer Science and Engineering (CSE) undergraduate program is designed to provide students with the fundamentals of computer science, both hardware and software, and the application of engineering concepts, techniques, and methods to both computer systems engineering and software system design.

### Sample Program of Study

#### Freshmen Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
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<tbody>
<tr>
<td>MATH 2A</td>
<td>MATH 2B</td>
<td>MATH 2D</td>
</tr>
<tr>
<td>I&amp;C SCI 31</td>
<td>I&amp;C SCI 32</td>
<td>I&amp;C SCI 33</td>
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<tr>
<td>GENERAL ED</td>
<td>PHYSICS 7C+7LC</td>
<td>PHYSICS 7D+7LD</td>
</tr>
<tr>
<td>IN4MATX 43</td>
<td>EECS 31</td>
<td>EECS 31L</td>
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#### Sophomore Year

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<tr>
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<tbody>
<tr>
<td>MATH 3A</td>
<td>MATH 3D</td>
<td>EECS 50</td>
</tr>
<tr>
<td>I&amp;C SCI 3C</td>
<td>I&amp;C SCI 46</td>
<td>SCI ELECTIVE</td>
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<tr>
<td>GENERAL ED</td>
<td>PHYSICS 7C+7LC</td>
<td>PHYSICS 7D+7LD</td>
</tr>
<tr>
<td>EECS 112</td>
<td>EECS 141</td>
<td>EECS 142A</td>
</tr>
<tr>
<td>EECS 112</td>
<td>EECS 141</td>
<td>ENGR 190W</td>
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<tr>
<td>CSE 112</td>
<td>COMPSCI 145</td>
<td>STATS 67</td>
</tr>
<tr>
<td>COMPSCI 161</td>
<td>COMPSCI 145L</td>
<td>GENERAL ED</td>
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#### Junior Year

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<tbody>
<tr>
<td>IN4MATX 43</td>
<td>EECS 112L</td>
<td>COMPSCI 143A</td>
</tr>
<tr>
<td>EECS 112</td>
<td>COMPSCI 141</td>
<td>COMPSCI 142A</td>
</tr>
<tr>
<td>CSE 112</td>
<td>COMPSCI 145</td>
<td>STATS 67</td>
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<tr>
<td>COMPSCI 161</td>
<td>COMPSCI 145L</td>
<td>GENERAL ED</td>
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#### Senior Year

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<tr>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
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<tbody>
<tr>
<td>EECS 159A</td>
<td>EECS 159B</td>
<td>ENGR 190W</td>
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<tr>
<td>GENERAL ED</td>
<td>GENERAL ED</td>
<td>SCI ELECTIVE</td>
</tr>
<tr>
<td>EECS 148</td>
<td>TECH ELECTIVE</td>
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<tr>
<td>GENERAL ED</td>
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Note: Course offerings subject to change. Courses subject to prerequisite requirements.

### Undergraduate Research Opportunities

- **Independent Study (199 course)**
- **Student Project Examples**
  - iHand
  - Intelligent Grid-level Energy for Electric Vehicle Supply Equipment
  - Project SkyHawk: Parking Assistant Drone System
  - Unmanned Ground Vehicle
  - Autonomous Water Quality Monitoring System
- Additional student projects can be found on projects.eng.uci.edu
- Undergraduate Research Opportunities Program (UROP)

### Potential Research Areas

- Circuits and Devices
- Microelectronics
- Nanotechnology
- Photonics
- Power Electronics, Power Systems
- Renewables
- Smart Grid
- Communications
- Information Theory

### Connect with Industry

- **Handshake: Job & Internship Search Tool:**
  career.uci.edu/students/zotlink.html
- **Find Employers based on major**
  career.uci.edu/students/undergraduate/find-an-internship/buzzfile-company-search-tool/
- **Career Fairs:**
  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 | uengr@uci.edu | engineering.uci.edu

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**Core Computer Science and Engineering Courses**

**Lower Division**
- I&C SCI 6B: Boolean Logic and Discrete Structures
- I&C SCI 6D: Discrete Mathematics of Computer Science
- I&C SCI 31: Introduction to Programming
- I&C SCI 32: Programming with Software Libraries
- I&C SCI 33: Intermediate Programming
- I&C SCI 45C: Programming in C/C++ as 2nd Language
- I&C SCI 46: Data Structure Implementation and Analysis
- IN4MATX 43: Introduction to Software Engineering
- CSE 90: Systems Engineering and Technical Communications
- EECS 31 and 31L: Intro to Digital Systems and Lab

**Upper Division**
- EECS 159A and B: Senior Design Project
- COMPSCI 141: Concepts in Programming Languages
- COMPSCI 142A: Compilers & Interpreters
- COMPSCI 145 and 145L: Embedded Software and Lab
- COMPSCI 161: Design & Analysis of Algorithms
- COMPSCI 143A: Principles of Operating Systems
- ENGR 190W: Communications in the Professional World

Students must complete a minimum of two courses of technical electives. Technical Electives must be courses not used for the CSE degree from the following ranges:

- Computer Science: 100-189 (except COMPSCI 121)
- EECS: 100-189
- Informatics: 100-139

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

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**Potential Careers**

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

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**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.uci.ulee.eng.uci.edu/
  - Institute of Electrical and Electronic Engineers
    - http://www.ieee.org/uci/home
  - For more info on Engineering Clubs and Orgs visit:

- **Engineering Student Organizations**
  - Engineering Student Council
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