

COMPUTER ENGINEERING

Fall Quarter	Units	Winter Quarter	Units	Spring Quarter	Units
FIRST YEAR					
CS 010 <i>C++ Programming I</i>	4	CS 012 or CS 13 <i>C++ Programming II</i>	4	CS 061 <i>Machine Org. & Assembly Lang. Prog.</i>	4
ENGL 001A <i>Beginning Composition</i>	4	ENGL 001B <i>Intermediate Composition</i>	4	MATH 009C <i>First Year Calculus</i>	4
ENGR 001G <i>Professional Dev. & Mentoring</i>	1	MATH 009B <i>First Year Calculus</i>	4	MATH/CS 011 <i>Intro to Discrete Structures</i>	4
MATH 009A <i>First Year Calculus</i>	4	PHYS 040A <i>Physics (Mechanics)</i>	5	PHYS 040B <i>Physics (Heat/Waves/Sound)</i>	5
SECOND YEAR					
CS 014 <i>Intro to Data Structures & Algorithms</i>	4	EE 001B <i>Engineering Circuit Analysis II and Lab</i>	4	CS 100 <i>Software Construction</i>	4
EE 001A and EE 01LA <i>Engineering Circuit Analysis I and Lab</i>	4	EE/CS 120A <i>Logic Design</i>	5	CS/EE 120B <i>Embedded Systems</i>	5
MATH 046 <i>Differential Equations</i>	4	MATH 010A <i>Multivariable Calculus</i>	4	MATH 113 <i>Linear Algebra</i>	5
PHYS 040C <i>Physics (Electricity/Magnetism)</i>	5	CS 111 <i>Discrete Structures</i>	4	Engineering Elective ¹ _____	4
THIRD YEAR					
CS 141 <i>Interm. Data Structures & Algorithms</i>	4	CS 153 <i>Design of Operating Systems</i>	4	CS 161 & CS 161L <i>Design & Arch. of Comp. Sys. and Lab</i>	6
ENGR 180W* <i>Technical Communications</i>	4	CS/EE 168 ³ <i>Elec. Circuits or VLSI Design</i>	4	EE 114 ² <i>Prob., Random Variables & Processes</i>	4
ENGR 101G <i>Professional Dev. & Mentoring</i>	1	EE 110B <i>Signals & Systems</i>	4	Breadth _____ <i>Humanities/Social Sciences</i>	4
Req'd Technical Elective** <i>EE 110A Signals & Systems</i>	4	Breadth _____ <i>Biological Sciences</i>	4		
FOURTH YEAR					
CS 122A or EE 128 <i>Micro Design or Instrumentation</i>	5	Technical Elective** _____	4	Technical Elective** _____	4
Technical Elective** _____	4	Breadth _____ <i>Humanities/Social Sciences</i>	4	Technical Elective** _____	4
Breadth _____ <i>Humanities/Social Sciences</i>	4	Breadth _____ <i>Humanities/Social Sciences</i>	4	Breadth _____ <i>Humanities/Social Sciences</i>	4
Breadth _____ <i>Humanities/Social Sciences</i>	4				

To earn a B.S., you must complete all College and University requirements. For a complete list: www.catalog.ucr.edu.

ENGLISH COMPOSITION*

A C or better is required in three quarters of English Composition courses to satisfy the graduation requirement. ENGR 180W fulfills the third quarter of English Composition.

BREADTH REQUIREMENTS

For an approved list of Breadth courses: <http://student.engr.ucr.edu/policies/requirements/breadth.html>.

Humanities: (3 courses)

- A. World History: _____
- B. Fine Arts, Lit., Phil. or Rlst: _____
- C. Human Persp. on Science: _____

Social Sciences: (3 courses)

- A. Econ. or Posc.: _____
- B. Anth., Psyc, or Soc.: _____
- C. General Social Science: _____

Biological Science _____

Ethnicity: (1 course)

- 1. _____

Upper Division Depth: (2 courses)

- 1. _____
- 2. _____

TECHNICAL ELECTIVES **

Please note that Technical Electives may be offered throughout the Academic Year. Consult with your Academic Advisor about potential offerings.

Course Plan is subject to change.

¹ Select in consultation with Faculty Advisor

³ EE 100A may be used to satisfy this requirement

² STAT 155 may be used to satisfy this requirement

Computer Engineering Technical Electives

You must complete five courses (at least 20 units) as technical electives from the following set of Computer Science and Engineering and Electrical Engineering upper-division courses. The technical electives selected must include either CS 179 (E-Z) or EE 175A, EE 175B and EE 175C. The remaining technical electives must include at least one coherent sequence of two classes from either Computer Science and Engineering or Electrical Engineering. The technical electives must be distinct from those used to satisfy major requirements. Units are listed in ().

CS 122A	Intermediate Embedded & Real-Time Systems (5)	EE 100B	Electronic Circuits (4)
CS 122B	Advanced Embedded & Real-Time Systems (5)	EE 105*	Modeling and Simulation of Dynamic Systems (4)
CS 130	Computer Graphics (4)	EE 110A*	Signals and Systems (4)
CS 133	Computational Geometry (4)	EE 115	Introduction to Communication Systems (4)
CS 150	Theory of Automata and Formal Languages (4)	EE 128	Data Acquisition, Instrum., & Process Control (4)
CS 152	Compiler Design (4)	EE 132	Automatic Control (4)
CS 160	Concurrent Programming & Parallel Systems (4)	EE 133	Solid-State Electronics (4)
CS 162	Computer Architecture (4)	EE 134	Digital Integrated Circuit Layout and Design (4)
CS 164	Computer Networks (4)	EE 135	Analog integrated Circuit Layout and Design (4)
CS 165	Computer Security (4)	EE 136	Semiconductor Device Processing (4)
CS 166	Database Management Systems (4)	EE 140	Computer Visualization (4)
CS/EE 168	Introduction to VLSI Design (5)	EE 141	Digital Signal Processing (4)
CS 169	Mobile Wireless Networks (4)	EE 144	Introduction to Robotics (4)
CS 170	Introduction to Artificial Intelligence (4)	EE 146	Computer Vision (4)
CS 172	Introduction to Information Retrieval (4)	EE 150	Digital Communication (4)
CS 177	Modeling & Simulation (4)	EE 151	Introduction to Digital Control (4)
CS 179 E-Z	Project in Computer Science (4 units maximum)	EE 152	Image Processing (4)
CS 180	Introduction to Software Engineering (4)	EE 175A	Senior Design Project (3)
CS 181	Principles of Programming Languages (4)	EE 175B	Senior Design Project (4)
CS 183	UNIX System Administration (4)	EE 175C	Senior Design Project (1)
CS 193	Design Project (4 units maximum)		

* Technical Electives may require that you complete additional courses as prerequisites that are not accounted for in the undergraduate program. Please go to www.catalog.ucr.edu for course descriptions and prerequisites.