UCR | Bourns College of Engineering

Suggested Course Plan for a UC Riverside Major in

COMPUTER ENGINEERING

Catalog Year: 2019

Fall Quarter	Units	Winter Quarter	Units	Spring Quarter	Units
FIRST YEAR					
CS 010	4	CS 012	4	CS 014	4
C++ Programming I		*C++ Programming II*		*Intro to Data Struc. & Algorithms*	
ENGL 001A	4	ENGL 001B	4	MATH 009C	4
Beginning Composition		*Intermediate Composition*		*First Year Calculus*	
ENGR 001G	1	MATH 009B	4	MATH/CS 011	4
Professional Dev. & Mentoring		*First Year Calculus*		*Intro to Discrete Structures*	
MATH 009A	4	PHYS 040A	5	PHYS 040B	5
First Year Calculus		*Physics (Mechanics)*		*Physics (Heat/Waves/Sound)*	
SECOND YEAR					
CS 061	4	CS 111	4	CS 100	4
Machine Org. & Assembly Lang. Prog.		*Discrete Structures*		*Software Construction*	
EE 001A and EE 01LA	4	EE 001B	4	CS/EE 120B	4
Engineering Circuit Analysis I and Lab		*Engineering Circuit Analysis II and Lab*		*Embedded Systems*	
MATH 046	4	EE/CS 120A	5	EE 020	4
Differential Equations		*Logic Design*		*Linear Methods for Engr. Analysis*	
PHYS 040C	5	CHEM 1A/LA or ME 10	4	MATH 010A	4
Physics (Electricity/Magnetism)		*Gen. Chemistry or Statics*		*Multivariable Calculus*	
THIRD YEAR					
CS 141	4	CS/EE 168	4	CS 153	4
Interm. Data Structures & Algorithms		*VLSI Design*		*Design of Operating Systems*	
ENGR 180W*	4	EE 100A	4	CS 161 & CS 161L	6
Technical Communications		*Electronic Circuits*		*Design & Arch. of Comp. Sys.and Lab*	
Breadth _____	4	EE 111	4	Technical Elective**	4
Humanities/Social Sciences		*Digital & Analog Signals & Systems*		_____	
Breadth _____	4	ENGR 101G	1		
Biol Sci(Biol 002 or 003 or 005A/LA)		*Professional Dev. & Mentoring*			
FOURTH YEAR					
CS 122A or EE 128	5	EE 114 or STAT 155	4	Technical Elective**	4
Micro Design or Instrumentation		*Prob., RV & Proc. or Stat*		_____	
Technical Elective**	4	Technical Elective**	4	Technical Elective**	4
_____		_____		_____	
Breadth _____	4	Technical Elective**	4	Breadth _____	4
Humanities/Social Sciences		_____		*Humanities/Social Sciences*	
Breadth _____	4	Breadth _____	4	Breadth _____	4
Humanities/Social Sciences		*Humanities/Social Sciences*		*Humanities/Social Sciences*	

To earn a B.S., you must complete all College and University requirements. For a complete list: 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 Rls _____
 C. Human Persp. on Scienc _____
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: (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.

Total Units: 189

Maximum Units: 216

Computer Engineering Technical Electives

You must complete six courses (at least 24 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 and EE 175B. The technical electives must be distinct from those used to satisfy major requirements. Units are listed in ().

ENGR 160   Intro to Engineering Optimization Techniques (4)

CS 122A	Interm. Embedded & Real-Time Systems (5)	EE 100B	Electronic Circuits (4)
CS 122B	Adv. Embedded & Real-Time Systems (5)	EE 105	Modeling and Simulation of Dynamic Systems (4)
CS 130	Computer Graphics (4)	EE 115	Introduction to Communication Systems (4)
CS 133	Computational Geometry (4)	EE 123	Power Electronics (4)
CS 134	Video Game Creation & Design (4)	EE 128	Data Acquisition, Instrum., & Process Control (4)
CS 135	Virtual Reality (4)	EE 132	Automatic Control (4)
CS 150	Theory of Automata & Formal Languages (4)	EE 133	Solid-State Electronics (4)
CS 152	Compiler Design (4)	EE 134	Digital Integrated Circuit Layout and Design (4)
CS 160	Concurrent Prog. & Parallel Systems (4)	EE 135	Analog integrated Circuit Layout and Design (4)
CS 162	Computer Architecture (4)	EE 136	Semiconductor Device Processing (4)
CS 164	Computer Networks (4)	EE 137	Introduction to Semiconductor Optoelectronic Devices (4)
CS 165	Computer Security (4)	EE 141	Digital Signal Processing (4)
CS 166	Database Management Systems (4)	EE 144	Introduction to Robotics (4)
CS 169	Mobile Wireless Networks (4)	EE 146	Computer Vision (4)
CS 170	Introduction to Artificial Intelligence (4)	EE 147	Graphics Processing Unit Computing & Prog. (4)
CS 171	Intro to Machine Learning & Data Mining (4)	EE 150	Digital Communication (4)
CS 172	Introduction to Information Retrieval (4)	EE 151	Introduction to Digial Control (4)
CS 175	Entrepreneurship in Computing (4)	EE 152	Image Processing (4)
CS 177	Modeling & Simulation (4)	EE 162	Introduction to Nanoelectronics (4)
CS 179 E-Z	Proj. in Computer Science (4 units maximum)	EE 165	Design for Reliability of Integ. Circuits and Systems (4)
CS 180	Introduction to Software Engineering (4)	EE 175A	Senior Design Project (4)
CS 181	Principles of Programming Languages (4)	EE 175B	Senior Design Project (4)
CS 182	Software Testing and Verification (4)		
CS 183	UNIX System Administration (4)		
CS 193	Design Project (4 units maximum)		