UCR | Bourns College of Engineering

Suggested Course Plan for a UC Riverside Major in

COMPUTER ENGINEERING

Catalog Year: 2018

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	EE 001B	4	CS 100	4
Machine Org. & Assembly Lang. Prog.		*Engineering Circuit Analysis II and Lab*		*Software Construction*	
EE 001A and EE 01LA	4	EE/CS 120A	5	CS/EE 120B	4
Engineering Circuit Analysis I and Lab		*Logic Design*		*Embedded Systems*	
MATH 046	4	MATH 010A	4	EE 020	4
Differential Equations		*Multivariable Calculus*		*Linear Methods for Engr. Analysis*	
PHYS 040C	5	CS 111	4	CHEM 001A or ME 010	4
Physics (Electricity/Magnetism)		*Discrete Structures*		*Gen. Chemistry or Statics*	
THIRD YEAR					
CS 141	4	CS 161 & CS 161L	6	CS 153	4
Interm. Data Structures & Algorithms		*Design & Arch. of Comp. Sys.and Lab*		*Design of Operating Systems*	
ENGR 180W*	4	CS/EE 168	4	EE 111	4
Technical Communications		*VLSI Design*		*Digital & Analog Signals & Systems*	
ENGR 101G	1	Breadth _____	4	Technical Elective**	4
Professional Dev. & Mentoring		*Biological Sci(Biol 002, or 003, or 005A/LA)*		_____	
EE 100A	4			Breadth _____	4
Electronic Circuits				*Humanities/Social Sciences*	
FOURTH YEAR					
CS 122A or EE 128	5	Technical Elective**	4	Technical Elective**	4
Micro Design or Instrumentation		_____		_____	
Technical Elective**	4	Technical Elective**	4	Technical Elective**	4
_____		_____		_____	
EE 114 or STAT 155	4	Breadth _____	4	Breadth _____	4
Prob., RV & Proc. or Stat		*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: 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 Rl _____

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)
CS 122B	Adv. Embedded & Real-Time Systems (5)
CS 130	Computer Graphics (4)
CS 133	Computational Geometry (4)
CS 134	Video Game Creation & Design (4)
CS 135	Virtual Reality (4)
CS 150	Theory of Automata & Formal Languages (4)
CS 152	Compiler Design (4)
CS 160	Concurrent Prog. & Parallel Systems (4)
CS 162	Computer Architecture (4)
CS 164	Computer Networks (4)
CS 165	Computer Security (4)
CS 166	Database Management Systems (4)
CS 169	Mobile Wireless Networks (4)
CS 170	Introduction to Artificial Intelligence (4)
CS 171	Intro to Machine Learning & Data Mining (4)
CS 172	Introduction to Information Retrieval (4)
CS 175	Entrepreneurship in Computing (4)
CS 177	Modeling & Simulation (4)
CS 179 E-Z	Proj. in Computer Science (4 units maximum)
CS 180	Introduction to Software Engineering (4)
CS 181	Principles of Programming Languages (4)
CS 183	UNIX System Administration (4)
CS 193	Design Project (4 units maximum)

EE 100B	Electronic Circuits (4)
EE 105	Modeling and Simulation of Dynamic Systems (4)
EE 115	Introduction to Communication Systems (4)
EE 123	Power Electronics (4)
EE 128	Data Acquisition, Instrum., & Process Control (4)
EE 132	Automatic Control (4)
EE 133	Solid-State Electronics (4)
EE 134	Digital Integrated Circuit Layout and Design (4)
EE 135	Analog integrated Circuit Layout and Design (4)
EE 140	Computer Visualization (4)
EE 141	Digital Signal Processing (4)
EE 144	Introduction to Robotics (4)
EE 146	Computer Vision (4)
EE 147	Graphics Processing Unit Computing & Prog. (4)
EE 150	Digital Communication (4)
EE 151	Introduction to Digial Control (4)
EE 152	Image Processing (4)
EE 165	Design for Reliability of Integ. Circuits and Systems (4)
EE 175A	Senior Design Project (4)
EE 175B	Senior Design Project (4)