Marlan and Rosemary Bourns College of Engineering

Suggested Course Plan for a UC Riverside Major in

COMPUTER ENGINEERING

Catalog Year: 2021

Fall Quarter	Units	Winter Quarter	Units	Spring Quarter	Units
FIRST YEAR					
CS 010A	4	CS 010B	4	CS 010C	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 030A & EE 30LA	4	EE 001B	4	CS/EE 120B	4
Fund Electric Circuits I & Lab		*Engineering Circuit Analysis II and Lab*		*Embedded Systems*	
MATH 045/EE 020A	4	EE/CS 120A	5	EE 020B	4
Intro Ordinary Differential Equations		*Logic Design*		*Linear Methods for Engr. Analysis*	
PHYS 040C	5	CHEM 001A/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*	
EE 100A	4	EE 111	4	CS 161 & CS 161L	6
Electronic Circuits		*Digital & Analog Signals & Systems*		*Design & Arch. of Comp. Sys.and Lab*	
Breadth _____	4	ENGR 101G	1	Technical Elective**	4
Biol Sci(Biol 002 or 003 or 005A/LA)		*Professional Dev. & Mentoring*		_____	
		Breadth _____	4	CS 122A	5
		Humanities/Social Sciences		*(or EE 128 in Fall)*	
FOURTH YEAR					
EE 128	4	EE 114 or STAT 155	4	Technical Elective**	4
(or CS 122A in Spring)		*Prob., RV & Proc. or Stat*		_____	
ENGR 180W*	4	Technical Elective**	4	Technical Elective**	4
Technical Communications		_____		_____	
Technical Elective**	4	Technical Elective**	4	Breadth _____	4
_____		_____		*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

BREADTH REQUIREMENTS

For an approved list of Breadth courses: http://student.engr.ucr.edu/policies/re

Humanities: (3 courses)

A. World History: _____

B. Fine Arts, Lit., Phil. or R _____

C. Human Persp. on Scien _____

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

Total Units: 185

Maximum Units: 222

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 110*	
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 182*	Software Testing and Verification (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 136*	Semiconductor Device Processing (4)
EE 137*	Introduction to Semiconductor Optoelectronic Devices (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 162*	Introduction to Nanoelectronics (4)
EE 165*	Design for Reliability of Integ. Circuits and Systems (4)
EE 175A*	Senior Design Project (4)
EE 175B*	Senior Design Project (4)