UCR | Bourns College of Engineering

Suggested Course Plan for a UC Riverside Major in

ELECTRICAL ENGINEERING

Catalog Year: 2017

Fall Quarter	Units	Winter Quarter	Units	Spring Quarter	Units
FIRST YEAR					
CS 010	4	CS 013	4	CS 061	4
C++ Programming I		*Introduction to CS for Engineers*		*Machine Org. & Assembly Lang. Prog.*	
EE 010	1	ENGL 001B	4	EE 020	4
Intro to Electrical Engineering		*Intermediate Composition*		*Linear Methodsfor Engr. Analysis*	
ENGL 001A	4	MATH 009B	4	MATH 009C	4
Beginning Composition		*First Year Calculus*		*First Year Calculus*	
MATH 009A	4	PHYS 040A	5	PHYS 040B	5
First Year Calculus		*Physics (Mechanics)*		*Physics (Heat/Waves/Sound)*	
SECOND YEAR					
EE 001A & EE 01LA	4	EE 001B	4	CS/EE 120B	4
Engineering Circuit Analysis I & Lab		*Engineering Circuit Analysis II*		*Embedded Systems*	
MATH 046	4	EE/CS 120A	5	EE 116	4
Differential Equations		*Logic Design*		*Engineering Electromagnetics*	
PHYS 040C	5	MATH 010A	4	MATH 010B	4
Physics (Electricity/Magnetism)		*Multivariable Calculus*		*Multivariable Calculus*	
CHEM 001A & CHEM 01LA	5	Breadth _____	4	Breadth _____	4
General Chemistry and Lab		*Humanities/Social Sciences*		*Humanities/Social Sciences*	
THIRD YEAR					
EE 100A	4	EE 100B	4	EE 114	4
Electronic Circuits		*Electronic Circuits*		*Prob., Random Variables & Processes*	
EE 110A	4	EE 105	4	EE 132	4
Signals & Systems		*Model. & Simulation of Dynamic Sys.*		*Automatic Control*	
Breadth _____	4	EE 110B	4	Breadth _____	4
Humanities/Social Sciences		*Signals & Systems*		*Humanities/Social Sciences*	
EE 128 or EE 155	4	Breadth _____	4	Technical Elective**	4
		BIOL 002, 003 or 005A/05LA		_____	
FOURTH YEAR					
EE 133	4	EE 175B	4	ENGR 181W*	4
Solid-State Electronics		*Senior Design Project*		*Technical Communications*	
EE 141	4	Technical Elective**	4	Breadth _____	4
Digital Signal Processing		_____		*Humanities/Social Sciences*	
EE 175A	4	Technical Elective**	4	Technical Elective**	4
Senior Design Project		_____		_____	
Breadth _____	4				
Humanities/Social Sciences					

*ENGR 180W is replaced with ENGR 181W

Total Units: 186

Maximum Units: 224

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 181W 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: _____

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. See approved technical electives on back.

Course Plan is subject to change.

Electrical Engineering Technical Electives and Focus Areas

To ensure depth, the choice of technical electives must include at least one coherent sequence of at least three (3) electrical engineering courses (lead course plus two additional) in one focus area of electrical engineering as defined below.
In total, you must complete 4 courses (at least 16 units) of Technical Elective coursework.

(1) Communications, Signal Processing and Networking (CSPN)

*EE 141 - Lead Course**	*Digital Signal Processing (4)*
EE 115	Intro to Communications (4)
EE 117	Electromagnetics II (4)
EE 128	Data Acquis., Instrum., & Process Ctrl (4)
EE 146	Computer Vision (4)
EE 150	Digital Communications (4)
EE 152	Image Processing (4)
ENGR 160	Intro to Engineering Optimization Techniques (4)

(2) Control and Robotics (CR)

*EE 132 - Lead Course**	*Automatic Control (4)*
EE 128	Data Acquis., Instrum., & Process Ctrl (4)
EE 144	Introduction to Robotics (4)
ME/EE 145	Robotic Planning & Kinematics (4)
EE 146	Computer Vision (4)
EE 151	Introduction to Digital Control (4)
EE 152	Image Processing (4)
ENGR 160	Intro to Engineering Optimization Techniques (4)

(3) Embedded Systems and VLSI

*EE 128 - Lead Course**	*Data Acquis., Instrum., & Process Ctrl (4)*
EE 135	Analog Integrated Circuit Layout and Design (4)
EE 165	Design for Reliability of Integrated Circuits and Sys. (4)
EE/CS 168	Introduction to VLSI Design (5)
CS 161	Design and Architecture of Computer Systems (4)
ENGR 160	Intro to Engineering Optimization Techniques (4)

(4) Nanotechnology, Advanced Materials, and Devices (NMDC)

*EE 133 - Lead Course**	*Solid-State Electronics (4)*
EE 117	Electromagnetics II (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	Intro to Semiconductor Optoelectronic Devices (4)
EE 138	Electronic Properties of Materials (4)
EE 139	Magnetic Materials (4)
EE 162	Intro to Nanoelectronics (4)
EE 165	Design for Reliability of Integrated Circuits and Sys. (4)
EE/CS 168	Introduction to VLSI Design (5)
ENGR 160	Intro to Engineering Optimization Techniques (4)

(5) Power Engineering (PE)

*EE 155 - Lead Course**	*Power System Analysis (4)*
EE 123	Power Electronics (4)
EE 128	Data Acquis., Instrum., & Process Ctrl (4)
EE 153	Electric Drives (4)
ENGR 160	Intro to Engineering Optimization Techniques (4)

*Required Lead Course for the Focus Area