UCR | Bourns College of Engineering

Suggested Course Plan for a UC Riverside Major in

ELECTRICAL ENGINEERING

Catalog Year: 2015

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	5
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*	
Technical Elective**	4	Biol. Sci. Major Requirement	4	Breadth _____	4
EE 128 Recommended		*BIOL 002, 003 or 005A/05LA*		*Humanities/Social Sciences*	
FOURTH YEAR					
EE 115	4	EE 175B	4	ENGR 180W*	4
Intro to Communications		*Senior Design Project*		*Technical Communications*	
EE 141	4	Technical Elective**	4	Technical Elective**	4
Digital Signal Processing		_____		_____	
EE 175A	4	Technical Elective**	4	Technical Elective**	4
Senior Design Project		_____		_____	
Breadth _____	4				
Humanities/Social Sciences					

* CS 010V may be used to satisfy this requirement

Total Units: 187 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 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: _____

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

You must complete 5 courses (at least 20 units) of Technical Elective coursework chosen from the list below. It is recommended that at least 3 courses are chosen from one Focus Area. Courses marked with * are required course for a focus area. Units are listed in ().

Intelligent Systems (IS)

**EE 146*	*Computer Vision (4)*
EE 140	Computer Visualization (4)
EE 144	Introduction to Robotics (4)
EE 152	Image Processing (4)
EE 128	Data Acquis., Instrum., & Process Ctrl (4)
CS 122A	Intermediate Embedded and Real-time Systems (5)
CS 130	Computer Graphics (4)
ENGR 160	Intro to Engineering Optimization Techniques (4)

Nanotechnology, Advanced Materials, and Devices (NMDC)

**EE 133*	*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 160	Fiber Optic Communication Systems (4)
EE 123	Power Electronics (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)

Communications, Signal Processing and Networking (CSPN)

**EE 150*	*Digital Communications (4)*
EE 117	Electromagnetics II (4)
EE 128	Data Acquis., Instrum., & Process Ctrl (4)
EE 152	Image Processing (4)
EE 160	Fiber Optic Communication Systems (4)
CS/EE 168	Introduction to VLSI Design (5)
CS 122A	Intermediate Embedded and Real-time Systems (5)
ENGR 160	Intro to Engineering Optimization Techniques (4)

Control and Robotics (CR)

**EE 151*	*Introduction to Digital Control (4)*
EE 123	Power Electronics (4)
EE 128	Data Acquis., Instrum., & Process Ctrl (4)
EE 144	Introduction to Robotics (4)
EE/ME 145	Robotic Planning & Kinematics (4)
EE 146	Computer Vision (4)
EE 152	Image Processing (4)
EE 153	Electric Drives (4)
CS 122A	Intermediate Embedded and Real-time Systems (5)
ENGR 160	Intro to Engineering Optimization Techniques (4)

VLSI Design and Systems (VLSI)

**CS/EE 168*	*Introduction to VLSI Design (5)*
EE 123	Power Electronics (4)
EE 128	Data Acquis., Instrum., & Process Ctrl (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	Intro to Semiconductor Optoelectronic Devices (4)
EE 165	Design for Reliability of Integrated Circuits and Sys. (4)
CS 161	Design and Architecture of Computer Systems (4)
CS 122A	Intermediate Embedded and Real-time Systems (5)
ENGR 160	Intro to Engineering Optimization Techniques (4)

Power Engineering (PE)

**EE 155*	*Power System Analysis (4)*
EE 117	Electromagnetics II (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 course for the Focus Area