

UNDERGRAD COURSE REQUIREMENTS for EE & EP STUDENTS 2009-2010

Lower Division Courses:

ECE	Course Title	F	W	S	Incoming Freshmen	Transfers
15	Eng. Computation	X	X		1 st year	1 st year
25	Intro to Digital Design	X	X	X	1 st year	1 st year
30	Intro to Computer Eng	X		X	1 st or 2 nd year	1 st year
35	Intro to Analog Design	X	X	X	1 st or 2 nd year	1 st year
45	Circuits and Systems	X	X	X	2 nd year	1 st year
65	Components & Circuits Lab	X		X	2 nd year	1 st year

Breadth Courses:

ECE	Course Title	F	W	S	Incoming Freshmen	Transfers
100	Linear Electronic Systems	X	X		3 rd year	2 nd year
101	Linear Systems Fundamentals	X	X		3 rd year	2 nd year
102	Intro to Active Circuit Design	X	X		3 rd year	2 nd year
103	Fundamentals of Devices and Materials	X	X		3 rd year	2 nd year
107	Electromagnetism		X	X	3 rd year	2 nd year
108	Digital Circuits		X		3 rd year	2 nd year
109	Eng. Probability and Statistics	X	X		2 nd or 3 rd year	2 nd year

Possible Depth Sequences:

Electronic Circuits and Systems ECE 163, 164, 165, Pick Two: ECE 111, 118, 161A, 161B, 161C 166	Devices and Materials ECE 135A-B, 136L, 139, 183	Controls and Systems Theory ECE 171A-B, 173, 174, 118 or 191	Machine Intelligence ECE 173, 174, 172A Pick Two: ECE 175, 161A, 187, 253A, 285, COGS 108F	Photonics ECE 181, 182 183, 184, 185	Communications Systems ECE 161A, 153, 154A-B-C	Networks ECE 153, 159A-B, 158A-B	Queuing Systems ECE 171A, 174, 159A-B, MATH 181A	SIP/DSP ECE 161A-B-C, 153, 172A or 174	Computer Design ECE 12, 21, 141 ECE 158A, 111 or 118, 165	Software Systems CSE 12, 21, 100 101, 141, 120
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Other Upper Division Courses (offerings subject to change):

ECE	Course Title	F	W	S
111	Advanced Digital Design Project	X	X	X
118	Computer Interfacing			X
120	Solar System Physics			X
123	Antenna Systems Engineering			X
134	Electronic Materials Science of Integrated Circuits		X	
135A	Semiconductor Physics	X		
135B	Electronic Devices		X	
136L	Microelectronics Laboratory	X		X
138L	Microstructuring Processing Technology Laboratory		X	
139	Semiconductor Device Design and Modeling			
145AL, BL, CL	Acoustics Laboratory			
146	Introduction to Magnetic Recording	X		
153	Probability and Random Processes for Engineers	X		X
154A	Communications Systems I	X		
154B	Communications Systems II		X	
154C	Communications Systems III			X
155A	Digital Recording Systems	X		
155B	Digital Recording Projects		X	
155C	Digital Recording Projects			X

ECE	Course Title	F	W	S
156	Sensor Networks			X
158A	Data Networks I	X		
158B	Data Networks II			X
159A	Queuing Systems: Fundamentals			
159B	Queuing Systems: Computer Systems and Data Networks			
161A	Intro to Digital Signal Processing	X		X
161B	Digital Signal Processing I		X	
161C	Digital Signal Processing II			X
163	Electronic Circuits and Systems			X
164	Analog Integrated Circuit Design	X		
165	Digital Integrated Circuit Design			X
166	Microwave Systems and Circuits	X		
171A	Linear Control System Theory			X
171B	Linear Control System Theory	X		
172A	Intro to Intelligent Systems: Robotics and Machine Intelligence	X		
173	Theory and Applications of Neural Networks and Fuzzy Logic			
174	Intro to Linear and Non-linear Optimization and Application			
175	Elements of Machine Intelligence: Pattern Recognition and Machine Learning			X

GRADUATION REQUIREMENTS:

Lower Division: Math 20A-B-C-D-E-F (68 units)
Physics 2A-B-C-D, Chem 6A
ECE 15, 25, 30, 35, 45, 65 (see left)

Breadth Courses: ECE 100, 101, 102, 103, 107, 108, 109 (see left) (28 units)

Design Course: ECE 111 or 118 or 155B or 155C or (4 units)
ECE 191 or ECE 190, or 193H (Honors Students Only)

Depth Courses: Choose a depth sequence below (20 units)
(Depths which list 6 courses only require 2 prof. electives)

Elective Courses: Three engineering, math, or physics courses (24 units)
Three professional electives (see general catalog)

Note: Course Requirements for **Engineering Physics Majors** differ as follows:

Lower division includes Physics 2DL;
Depth Courses: Phys. 110A, 130A-B, 140A, Math 110,
ECE 123 and 166; or ECE 135A and 135B; or
ECE 182 and (181 or 183)
Elective Courses: One engineering, math, or physics and
three professional electives (see general catalog)

ECE	Course Title	F	W	S
181	Physical Optics and Fourier Optics			X
182	Electromagnetic, Guided-Wave, and Fiber Optics	X		
183	Optical Electronics		X	
184	Optical Information Processing and Holography		X	
185	Lasers and Modulators			X
186L	Optical Information Systems			
187	Intro to Biomedical Imaging and Sensing	X		
191	Engineering Design Group Project		X	X
190	Engineering Design	X	X	X
193H	Honors Project	X	X	X
195	Teaching	X	X	X
197	Field Study in ECE	X	X	X
198	Directed Group Study	X	X	X
199	Independent Study for Undergraduates	X	X	X

PLEASE NOTE The official policies & requirements for the curriculums of all 4 ECE majors have changed considerably since Fall 2004. Information listed on websites and handouts are simply for convenience but do not supplant the official policy in the UCSD General Catalog.