

Bachelor of Science in Electrical Engineering

Student Planning Guide

FIRST YEAR	Fall	Winter	Spring
	MATH 11 Calculus I	MATH 12 Calculus II	MATH 13 Calculus III
	CHEM 11 Chemistry I	PHYS 31 Physics for Engineers I	PHYS 32 Physics for Engineers II
	ENGR 1/1L Intro to Eng. (1unit/1unit)	ECEN 20 Emerging Areas in Electrical Engineering	ECEN 21 Introduction to Logic Design
	Critical Thinking and Writing I	Critical Thinking and Writing II	University Core
	Culture and Ideas I	Culture and Ideas II	
SOPHOMORE	Fall	Winter	Spring
	ECEN 50 Circuits I	ECEN 100 Circuits II	ECEN 115 Electronics Circuits I
	CSEN 10 Intro to Programming	CSEN 11 Advanced Programming	CSEN 12 Data Structures
	MATH 14 Calculus IV	AMTH 106 Differential Equations	ECEN 110 Linear Systems
	PHYS 33 Physics for Engineers III	PHYS 34 Physics for Engineers IV/ Math 51 Discrete Math	University Core - RTC 1 (Note 1)
JUNIOR	Fall	Winter	Spring
	ECEN 104 Electromagnetics I	MECH 121 Thermodynamics	ECEN 192 Intro to Sr. Design (1 unit) ECEN 192L- Lab (1 unit)
	ECEN 120 Microprocessor System Design	Math Science Elective (Note 2)	AMTH 108 Probability and Statistics
	ECEN Elective 1 (Note 3)	ECEN Elective 2 (Note 3)	ECEN Elective 3 (Note 3)
	University Core - Ethics (Note 1)	ENGL 181 Eng. Comm. (4 units)	Professional Development (Note 4)
SENIOR	Fall	Winter	Spring
	ECEN 194 Design Project I (2 units)	ECEN 195 Design Project II (2 units)	ECEN 196 Design Project III (1 unit)
	ECEN Elective 4 (Note 3)	ECEN Elective 5 (Note 3)	Optional Elective or BS/MS option (Note 5)
	Optional Elective or BS/MS option (Note 5)	Optional Elective or BS/MS option (Note 5)	Optional Elective or BS/MS option (Note 5)
	University Core	University Core	University Core

Humanities & Social Science
 Math & Science
 Major
 Technical Electives

If **study abroad** or **COOP** experience is selected in the junior year, courses may be moved to senior year.

Minimum requirement of units for Electrical Engineering Degree is **190 units**.

Note 1: ENGR 16 and ENGR 19 are recommended for engineering students as a way to satisfy the RTC 1 and Ethics requirements in the Core curriculum

Note 2: Math Science Elective may be one of the following:

BIOL 1A, CHEM 12, PHYS 113, PHYS 121, MATH 53, MATH 105, or MATH 123

Note 3: Five 100-level electives: One elective must be selected from at least four of the following five areas.

RF and Communications (C)	
105	Electromagnetics II
141	Communication Systems
142	Communications and Networking
144	Microwave Circuit Analysis and Design
Power Systems (P)	
164	Introduction to Power Electronics
183	Power Systems Analysis
184	Power System Stability and Control
IC Design (I)	
116	Analog Integrated Circuit Design
151	Device Electronics for IC Design
152	Integrated Circuit Fabrication Process Technology
153	Digital Integrated Circuit Design
156	Introduction to Nanotechnology
Systems (S)	
130	Control Systems
132	Design of Assistive Technologies
133	Digital Signal Processing
158	Introduction to Neuromorphic computing
160	Chaos Theory, Metamathematics, and the Limits of Science
161	The Beauty of Nature and the Nature of Beauty
167	Medical Imaging Systems
Digital and Embedded Systems (D)	
121	Real-Time Embedded Systems
122	Computer Architecture
123	Mechatronics
127	Advanced Logic Design
131	Introduction to Robotics
162	Quantum and Parallel Algorithms for Scientific Computing

Note 4: Professional Development

Four or more units in study abroad program that does not duplicate other coursework.

Two units in ENGR 110.

Preparation for graduate study in electrical engineering with completion of two or more additional units of upper-division or graduate-level courses.

Completion of an approved minor or second major in any field of engineering or science.

Two units of Peer education experience.

Two units of undergraduate research, ECEN 199

Cooperative education experience with enrollment in ECEN 188 and ECEN 189.

Completion of 10 or more units in the combined bachelor of science and master of science program

Note 5: Optional Elective or BS/MS Option

These slots will be given as extra credits to be used in the 5 year BS/MS program.