Bachelor of Science in Electrical Engineering
Student Planning Guide: Fall 2020

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 Intro to Eng. (2 units)	ELEN 20 Emerging Areas in Electrical Engineering	ELEN 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
ELEN 50 Circuits I	ELEN 100 Circuits II	ELEN 115 Electronics
COEN 10 Intro to Programming	COEN 11 Advanced Programming	COEN 12 Data Structures
MATH 14 Calculus IV	AMTH 106 Differential Equations	ELEN 110 Linear Systems
PHYS 33 Physics for Engineers III	PHYS 34 Physics for Engineers IV/ Math 51 Discrete Math	University Core

JUNIOR

Fall	Winter	Spring
ELEN 104 Electromagnetics	MECH 121 Thermodynamics	ELEN 192 Intro to Sr. Design (2 units)
ELEN 120 Microprocessor System Design	Math Science Elective (Note 1)	AMTH 108 Probability and Statistics
ELEN Elective 1 (Note 2)	ELEN Elective 2 (Note 2)	ELEN Elective 3 (Note 2)
University Core	ENGL 181 Eng. Comm. (4 units)	Professional Development (Note 3)

SENIOR

Fall	Winter	Spring
ELEN 194 Design Project I (2 units)	ELEN 195 Design Project II (2 units)	ELEN 196 Design Project III (1 unit)
ELEN Elective 4 (Note 2)	ELEN Elective 5 (Note 2)	Optional Elective or BS/MS option (Note 4)
Optional Elective or BS/MS option (Note 4)	Optional Elective or BS/MS option (Note 4)	Optional Elective or BS/MS option (Note 4)
University Core	University Core	University Core

Humanities & Social Science	Math & Science	Major	Technical Electives

If a **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.**

4/21/20

Note 1: Math Science Elective may be one of the following:
CHEM 12, BIOL 1A, PHYS 113, PHYS 121, MATH 53, MATH 105, or MATH 123
Note 2: 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	Semiconductor Devices
152	Integrated Circuit Fabrication Technology
153	Digital Integrated Circuit Design
156	Introduction to Nanotechnology

Systems (S)	
118	Fundamentals of Computer Aided Circuit Simulation
130	Control Systems
133	Digital Signal Processing
134	Applications of Signal Processing
160	Chaos Theory, Metamathematics and the Limits of Knowledge
161	Information Theory and Quantum Computing
167	Medical Imaging Systems

Digital and Embedded Systems (D)	
121	Real-time Embedded Systems
122	Computer Architecture
123	Mechatronics
124	Introduction to Hardware Security and Trust
127	Advanced Logic Design

Note 3: 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, ELEN 199
Cooperative education experience with enrollment in ELEN 188 and ELEN 189.
Completion of 10 or more units in the combined bachelor of science and master of science program
Note 4: Optional Elective or BS/MS Option
These slots will be given as extra credits to be used in the 5 year BS/MS program.