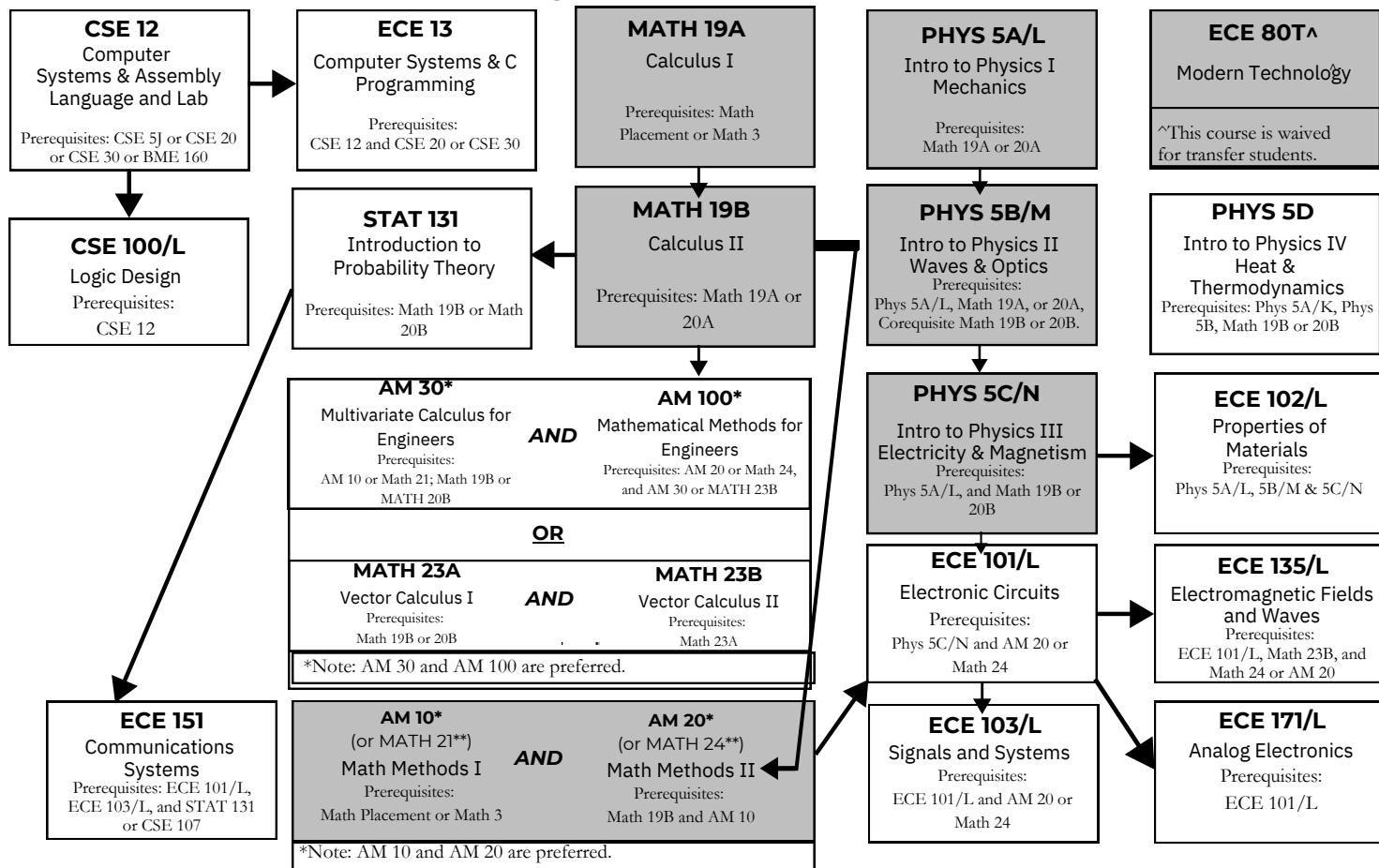


Electrical Engineering B.S. Degree 2023-2024 Curriculum



Elective Requirements:

In addition to the above, Electrical Engineering majors must complete 4 additional upper-division courses (minimum of 3 courses from one track). Unlisted graduate-level courses may be used to fulfill an elective requirement with prior department approval. **Most elective courses have additional prerequisites. They are subject to change frequently. Please visit <https://catalog.ucsc.edu/current/General-Catalog/Courses/ECE-Electricaland-Computer-Engineering> to ensure you have met them.** Design Elective: One of the four concentration courses chosen must include at least one of the following design electives: ECE 118, ECE 157/L, ECE 121, or ECE 173. *The design elective must be taken before ECE 129A.*

Communications, Signals, & Systems	Electronics / Optics
<p>ECE 118 Intro to MechatronicsΩ ECE 130/L /230 Intro to Optoelectronics & Photonics~ ECE 136 Engineering Electromagnetics ECE 141/241 Feedback Control Systems~ ECE 152/252 Intro to Wireless Communications~ ECE 153/250 Digital Signal Processing~ ECE 163 Introduction to Small-Scale UAV Theory and Practice ECE 237 Image Processing and Reconstruction ECE 243 System Identification ECE 244 Digital Control ECE 245 Estimation and Introduction to Control of Stochastic Processes ECE 250 Digital Signal Processing ECE 251 Principles of Digital Communications ECE 253 Introduction to Information Theory ECE 255 Error Control Coding ECE 256 Statistical Signal Processing CSE 150 Intro Computer Networks</p> <p>~ ECE 130 and ECE 230, ECE 152 and ECE 252, ECE 141 and ECE 241, and ECE 153 and ECE 250 are undergraduate and graduate courses taught in conjunction, and only one can be taken for this program.</p> <p>Lecture/lab combinations count as one course.</p>	<p>ECE 104 Bioelectronics ECE 115 Introduction to Solid Mechanics ECE 118 Intro to MechatronicsΩ ECE 121 Microcontroller System Design ECE 130/L/230 Intro to Optoelectronics & Photonics~ ECE 136 Engineering Electromagnetics ECE 141/241 Feedback Control Systems~ ECE 157/L RF Hardware Design/Lab ECE 163 Introduction to Small-Scale UAV Theory and Practice ECE 167 Sensing and Sensor Technologies ECE 172/221 Advanced Analog Circuits~ ECE 173 High Speed Digital Design ECE 175/L Energy Generation and Control/ Lab*** ECE 176/L Energy Conversion and Control/Lab*** ECE 177/L Power Electronics / Lab*** ECE 178 Device Electronics ECE 180J Advanced Renewable Energy Sources ECE 185 Introduction to the US Electricity Industry ECE 201 Introduction to Nanotechnology ECE 203 Nanocharacterization of Materials ECE 221 Advanced Analog Integrated Circuits ECE 230 Optical Fiber Communication ECE 231 Optical Electronics ECE 275 Energy Market, Policy, and Modeling</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>~ECE 130 and ECE 230, ECE 141 and ECE 241, and ECE 172 and ECE 221 are undergraduate and graduate courses taught in conjunction, and only one can be taken for this program.</p> <p>Lecture/lab combinations count as one course.</p> </div>
Comprehensive Requirement (ECE129ABC or ECE 129A & ECE 195):	
ECE 129A Capstone Project I Prerequisites: ECE171/L, CSE 100/L, and at least one design elective.	Exit Requirements: 1. Exit Survey 2. Exit Interview 3. Maintain a 2.5 cumulative GPA in all required and elective courses for the major, OR submit a portfolio for department review, OR submit a senior thesis with department approval.
ECE 129B Capstone Project II • Prerequisites: ECE 129A	
ECE 129C Capstone Project III • Prerequisites: ECE 129B	
ECE 195 (10 units) Senior Thesis Prerequisites: ECE 129A	

Electrical Engineering B.S. Degree 2023-2024 Curriculum

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

Key Legend:
 ** Requires additional pre-requisites
 Ω ECE 118 is a 10-unit course. Students are recommended not to pair this course with another major requirement.
 ***Three classes intended to introduce the discipline of modern power engineering. ECE175: *Power systems* treat the generation, transmission and regulation of AC and DC power, both at the grid and micro-grid levels. ECE176: *Electric Drives* combine the modern use of traditional and advanced electric motors with sophisticated mixed-signal feedback control systems to solve modern energy conversion and control problems. ECE177: *Power Electronics* deals principally with the application of modern high power non-linear switching devices to the engineering design of power systems.

Student Name: _____

Staff Advisor: _____