



Curriculum for B.S. Degree in Electrical Engineering (122 units)

CALIFORNIA STATE UNIVERSITY, LOS ANGELES

(Effective Fall 2026) revised 9/01/2025

General Education (20 units)

Lower Division General Education Requirements (21 units)

- Area 1A- Oral Communication (3)
- Area 1C -Written Communication (3)
- United States History (3) *
- United States Constitution and State/Local Government (3)
- Area 3A – Arts
- Area 6 – Ethnic Studies
- Select 1 course (3) *
- Select 1 course (3) *
- Introduction to Higher Education First-time freshmen need to take ENGR 1500 Introduction to Engineering and Technology (2);

Upper Division General Education Requirements (0 units)

*Students need to select the *US History, Areas 3A, and 6* courses to fulfill the requirement of one race/ethnicity (*re*) and one diversity (*d*) course, or two (*re*) courses.

Lower Division Major Requirements (44 units)

CHEM 1040	General Chemistry for Engineers (4)
EE/ME 1070	Introductory Mathematics for Engineering Applications <i>Prerequisites:</i> MATH 1040 or MATH 1083 or MATH 2110; or with department consent
EE 1079	Introductory Mathematics for Engineering Applications Laboratory <i>Pre/Co-requisites:</i> EE/ME 1070
EE 2040	Circuit Analysis I (3) <i>Prerequisites:</i> EE 1070, EE 1079
EE 2049	Electrical Measurements and Circuits Laboratory (1) <i>Prerequisites:</i> EE 2040
EE 2440	Digital Engineering (3) <i>Prerequisites:</i> None
EE 2449	Digital Logic Laboratory (1) <i>Pre/Co-requisites:</i> EE 2440
EE 2450	Embedded System Programming I (3) <i>Pre/Co-requisites:</i> ENGR 1500
MATH 2110	Calculus I (4) <i>Prerequisites:</i> Graded C or better in either MATH 1040 or (MATH 1081 and MATH 1083) or (MATH 1082 and MATH 1083) or (ESM 1082 and MATH 1083); or scored satisfactorily on a math placement examination. Corequisite(s): MATH 2111 if any of the listed prerequisites is graded less than B-.
MATH 2120	Calculus II (4) <i>Prerequisites:</i> MATH 2110 with a minimum C grade; students with a grade of less than B- in MATH 2110 must enroll concurrently in MATH 2121.
MATH 2130	Calculus III (3) <i>Prerequisites:</i> MATH 2120 with a minimum C grade; students with a grade of less than B- in MATH 2120 must enroll concurrently in MATH 2131
MATH 2150	Differential Equations (3) <i>Prerequisites:</i> MATH 2130
PHYS 2100	General Physics I, Mechanics (4) <i>Prerequisites:</i> EE/ME 1070 or MATH 2110 with a minimum C grade
PHYS 2200	General Physics II, Electromagnetism and Circuits (4) <i>Prerequisites:</i> PHYS 2100 with a minimum C grade
ENGL 2030	Introduction to Technical Writing (3) <i>Prerequisites:</i> ENGL 1010

Upper Division Major Requirements (42 units)

EE/ME/CE 3000	Economics for Engineers (3) <i>Prerequisites:</i> Junior or Senior Standing
ENGR 3010	Ethics and Professionalism in Engineering (3) <i>Prerequisites:</i> Junior or Senior Standing
EE 3003	Linear Algebra and Numerical Analysis in Electrical and Computer Engineering (3) <i>Prerequisites:</i> EE 2450. <i>Pre/Co-req:</i> EE 2040
EE 3020	Signals and Systems (3) <i>Prerequisites:</i> EE 2040, <i>Pre/Co-req:</i> EE 3003, MATH 2150
EE 3030	Circuit Analysis II (3) <i>Prerequisites:</i> EE 3020
EE 3040	Probability, Random Variable, and Random Processes (3) <i>Pre/Co-requisites:</i> MATH 2130
EE 3050	Electric and Magnetic Fields (3) <i>Prerequisites:</i> EE 2040, PHYS 2200
EE 3200	Analog Communication Systems (3) <i>Prerequisites:</i> EE 3020
EE 3300	Electric Machines (3) <i>Prerequisites:</i> EE 2040, <i>Pre/Co-requisite:</i> PHYS 2200
EE 3450	Embedded Systems Programming II (3) <i>Prerequisites:</i> EE 2450
EE 3600	Control Systems I (3) <i>Prerequisites:</i> EE 3020

EE 3810	Sensors, Data Acquisition, & Instrumentation w/ App. in Biomedical Engr. (3) Prerequisites: EE 2440, Pre/Co-requisite: EE 2049
EE 4961	Senior Design I (3) Prerequisites: Completion of Blocks A1 and A2, ENGR 3010, EE/ME/CE 3000, EE 3020, EE 3450, and EE3810
EE 4962	Senior Design II (3) Prerequisites: EE 4961 with grade of C or higher

Upper Division Technical Electives (16 units)

Select 5 lecture courses and 1 lab from the following. (3 lecture and 1 lab courses in one specialty with advisor's approval.)

Lecture Electives (15 units):

EE/ME/CS 3420	Introduction to Autonomous Robotic Systems (3) Prerequisites: EE 2450
EE 3700	Electronics I (3) Prerequisites: EE 2040
EE 3710	Electronics II (3) Prerequisites: EE 3700
EE 3720	Digital Electronics (3) Prerequisites: EE 2440, EE 3700
EE 4130	Systems Engineering (3) Prerequisites: EE 3600
EE 4200	Digital Communication Systems (3) Prerequisites: EE 3200, EE 3040
EE 4210	Coding for Communications (3) Prerequisites: EE 3200
EE 4220	Digital Signal Processing (3) Prerequisites: EE 3200
EE 4230	Antennas (3) Pre/Co-requisites: EE 3050
EE 4240	Fiber Optics (3) Prerequisites: EE 3200
EE 4250	Digital Image Processing (3) Prerequisites: EE 3200
EE 4300	Introduction to Power Systems Engineering (3) Prerequisites: EE 3300
EE 4310	Power Systems Analysis (3) Prerequisites: EE 4300
EE 4320	Electric Power Distribution (3) Pre/Co-requisites: EE 4300
EE 4330	Power Electronics (3) Prerequisites: EE 3030
EE 4340	Electromagnetic Energy Conversion (3) Prerequisites: EE 3300
EE 4400	Data Communications and Networking (3) Prerequisites: EE 3200
EE 4420	Multimedia Networking (3) Prerequisites: EE 4400, Knowledge of MATLAB
EE 4440	Computer Organization (3) Prerequisites: EE 3450
EE 4450	Embedded Architectures (3) Prerequisites: EE 3450
EE 4480	Advanced Digital Design (3) Prerequisites or Co-requisites: EE 4440
EE 4600	Applied Control System Design and Simulation (3) Prerequisites: EE 3600
EE 4610	Digital Control Systems (3) Prerequisites: EE 3600
EE 4620	Modern Control Systems (3) Prerequisites: EE 3020
EE 4630	Machine Learning Principles and Applications (3) Prerequisites: EE 3020, EE 3040
EE 4710	Analog Integrated Circuits (3) Prerequisites: EE 3700
EE 4720	CMOS VLSI Design (3) Prerequisites: EE 3720
EE 4730	Optoelectronics (3) Prerequisites: EE 3700
EE 4810	Biomedical Devices (3) Prerequisites: EE 2040
EE 4820	Biomedical Signal Processing (3) Prerequisites: EE 3020

Laboratory Electives (1 unit):

EE 3209	Communications Laboratory (1) Prerequisites: EE 3200
EE 3309	Electromagnetic Energy Conversion Laboratory (1) Prerequisites: EE 3300, EE 2049
EE 3709	Electronics Laboratory (1) Pre/Co-requisites: EE 3710
EE 4229	Digital Signal Processing Laboratory (1) Pre/Co-requisites: EE 4220
EE 4459	Systems Design Tools and Implementation Laboratory (1) Prerequisite: EE 2450
EE 4689	Control Systems Laboratory (1) Pre/Co-requisites: EE 3600

Additional Courses That May Count Towards Major with Department Approval:

EE 3540	Special Topics in Electrical Engineering (1-3) Prerequisites: Department Permission
EE 4009	Professional Engineering Practice (1) Prerequisites: Department Permission under the conditions: acceptance by the corresponding worksite; junior, senior, or graduate standing; min 2.5 GPA for undergraduates and 3.0 for graduates.
EE 4540	Special Topics in Electrical Engineering (1-3) Prerequisites: Senior standing or graduate standing in EE, enrollment subject to approval of instructor in charge. Permission needed by the EE Department.
EE 4990	Undergraduate Directed Study (1-3) Prerequisites: Department Permission