



PROGRAM DESCRIPTION

As the leader in practical, hands-on electrical engineering education, Cal Poly develops industry-ready talent that advances the technical world by innovating from fundamentals to advanced technologies. The Electrical Engineering Department is fully committed to a Learn by Doing educational experience.

First-year students study computer programming and electric circuit analysis. Sophomore students learn about analog and digital circuit design and build their own computer and interface hardware using FPGAs. Integrated circuit designs, microprocessor applications, control systems, communication systems and signal processing highlight the junior year. Seniors take technical electives such as utility power networks, alternative energy systems, power electronics, electronic communication systems, advanced computer design and interfacing, digital control systems, digital signal and image processing, high-frequency electronic design, photonics and biomedical applications.



EE



U.S. News and World Report ranked Cal Poly electrical engineering as the No. 2 undergraduate program in the nation among all non-Ph.D.-granting universities in 2020.

ASSOCIATED CLUBS

- **Amateur Radio Club** — w6bhz.org
- **Audio Engineering Society** — calpolyaudio.club
- **Cal Poly Club Services Page (Engineering)** — clubs.calpoly.edu
- **Cal Poly Robotics Club** — calpolyrobotics.com
- **Electric Vehicle Engineering Club** — evect.calpoly.edu
- **Eta Kappa Nu** — web.calpoly.edu/~hkn
- **IEEE Consumer Electronics Society** — ieeusa.org
- **IEEE Student Branch** — calpolyieee.com
- **Power Engineering Society** — web.calpoly.edu/~pesclub
- **Renewable Energy Club** — web.calpoly.edu/~recclub
- **Society of Women Engineers** — swe.calpoly.edu
- **Women Involved in Software & Hardware (WISH)** — calpoly.edu/~wish

738
undergraduate
students

enrolled in
electrical
engineering

35+
graduate
students

enrolled in the
blended B.S. and M.S.
programs

ELECTRICAL ENGINEERING GRADUATES

Electrical engineering graduates work for a variety of industries, including electrical components and computer equipment manufacturers; medical and scientific instruments; transportation, communication, and computer-related sectors; the federal government; electric utility companies; and engineering consulting firms.



B.S. IN ELECTRICAL ENGINEERING

Suggested Four-year Academic Flowchart • 2022-2026 Catalog

Updated 5/11/2022

FRESHMAN			SOPHOMORE			JUNIOR			SENIOR		
Fall	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring
Introduction to Electrical Engineering & Lab EE 111 (1) & EE 151 (1)	Fundamentals of Computer Science CSC/CPE 101 (4)	Choose One: ⁴ EE 113 (3) & EE 143 (1) OR EE 112 (2) & IME 156 (2)	Electric Circuit Analysis & Lab II EE 211 (3) & EE 241 (1) <small>(EE 112 or EE 113; EE 151; MATH 244† or PHYS 143†)</small>	Electric Circuit Analysis & Lab III EE 212 (3) & EE 242 (1) <small>(MATH 244; EE 211; 241)</small>	Energy Conversion Electromagnetics & Lab EE 255 (3) & EE 295 (1) <small>(EE 212 & 242; or EE 201 & 251; or EE 215 & 245)</small>	Semiconductor Device Electronics & Lab EE 306 (3) & EE 346 (1) <small>(CHEM 124; EE 212 & 242; EE 143 or IME 156 or IME 458; PHYS 211; Recom: ENGL 134)</small>	Digital Electronics & Integrated Circuits & Lab EE 307 (3) & EE 347 (1) <small>(CPE/EE 133; EE 306; 346; CPE/EE 233†)</small>	Analog Electronics & Integrated Circuits & Lab EE 308 (3) & EE 348 (1) <small>(EE 302 & 342; 307 & 347)</small>	Electronic Design & Lab EE 409 (3) & EE 449 (1) <small>(EE 308 & 348; CPE/EE 328 & 368; or CPE 327 & 367; CPE/EE 329 or 336 or CPE 316)</small>	Choose One Series ¹ : Senior Project I & II EE 461 (2) (EE 409; 449; 460) EE 462 (2) (EE 461) OR Senior Project Design Lab I & II EE 463 (2) (EE 409; 449; 460) EE 464 (2) (EE 463)	
Calculus I MATH 141 (4) * [B4]	Calculus II MATH 142 (4) <small>(MATH 141 w/min C- or Instr. Consent)</small> [B4]	Calculus III MATH 143 (4) <small>(MATH 142 w/min C- or Instr. Consent)</small> [Area B Elective]	Digital Design CPE/EE 133 (4) <small>EE 111 & 151; CPE/CSC 101</small>	Computer Design & Assembly Language Programming CPE/EE 233 (4) <small>(CPE/EE 133)</small>	Continuous-Time Signals & Systems EE 228 (4) <small>(BMED 355; or EE 212 & 242; Recom: MATH 241)</small>	Discrete Time Signals & Systems & Lab EE 328 (3) & EE 368 (1) <small>(BMED 355 or EE 228)</small>	Classical Control Systems & Lab EE 302 (3) & EE 342 (1) <small>(EE 215 or 228; Recom: EE 368; CPE 327 & 367)</small>	Choose one: Microcontroller-Based Systems Design EE/CPE 329 (4)* OR Microprocessor System Design EE 336 (4)*	Senior Project Preparation EE 460 (2) ¹ <small>(EE 314; 335; EE 409† & 449†)</small>	General Curriculum Technical Elective (4) ² ***	General Curriculum Technical Elective (3) ² ***
General Chemistry for Physical Science & Engineering I CHEM 124 (4) * [B1 & B3]	General Physics I PHYS 141 (4) <small>(MATH 141 w/min C-; MATH 142† or 182†)</small> [Area B Elective]	General Physics III PHYS 143 (4) <small>(PHYS 141; MATH 142; Recom: MATH 241)</small>	General Physics II PHYS 142 (4) <small>(PHYS 141; MATH 142 or 182)</small>	Take concurrently: Life Science for Engin. BIO 213 (2) & Bioengineering Fundamentals BMED 213 (2) <small>(MATH 142 Recom: CHEM 124)</small> [B2]	Choose EE or GE Options ³ : Electromag. Fields & Trans. & Lab EE 335 (4) & EE 375 (1) ³ <small>(EE 212, 242; MATH 241)</small> OR GE (4) **	Choose EE or GE Options ³ : Electromagnetic Waves EE 402 (4) <small>(EE 335)</small> OR GE (4) **	Choose EE or GE Options ³ : Electromag. Fields & Trans. & Lab EE 335 (4) & EE 375 (1) ³ <small>(EE 212, 242; MATH 241)</small> OR GE (4) **		Choose EE or GE Options ³ : Electromagnetic Waves EE 402 (4) <small>(EE 335)</small> OR GE (4) **	General Curriculum Approved Engineering Electives (3) ² ***	General Curriculum Approved Engineering Electives (3) ² ***
			Linear Analysis I MATH 244 (4) <small>(MATH 143)</small>	Calculus IV MATH 241 (4) <small>(MATH 143)</small>	Modern Physics I PHYS 211 (4) <small>(PHYS 142; 143; MATH 241; Recom: MATH 242 or 244)</small>	Probability and Random Processes for Engineers STAT 350 (4) * [Upper-Division B]	Introduction to Communication Systems EE 314 (3) <small>(EE 228 or CPE 327; Coreq: STAT 350; EE 306 or 315)</small>		General Curriculum Technical Elective (4) ² ***		
Oral Communication COMS 101 or 102 (4)** [A1] <small>Can be taken anytime during Freshman Year</small>											
Expository Writing ENGL 133 or 134 (4)** [A2] <small>Can be taken anytime during Freshman Year</small>											
			Reasoning, Argumentation, & Writing [A3] COMS 126, 145, ENGL 145, 147, ES 145, PHIL 126, or WGQS 145 (4)** <small>(Completion of GE A2 with a C- or better) Can be taken anytime between Winter of Freshman and Winter of Sophomore Years.</small>			Graduation Writing Requirement GWR* <small>(Students can attempt to fulfill the requirement after 90 earned units; students should complete the requirement before senior year)</small>					
14	16	16	16	16	16-17	16	15	16-17	17	17	16
										TOTAL:	192

Notes:

MOST GENERAL EDUCATION COURSES CAN BE TAKEN IN ANY ORDER AS LONG AS PREREQUISITES ARE MET

* Refer to current catalog for prerequisites.

** One course from each of the following GE areas must be completed: A1, A2, A3, C1, C2, Lower-Division C Elective, Upper-Division C, D1, Area D Elective, Lower-Division E, and F. Upper-Division C should be taken only after Junior standing is reached (90 units).

*** Refer to current catalog for course selection.

Refer to online catalog for GE course selection, United States Cultural Pluralism (USCP) and Graduation Writing Requirement (GWR).

USCP requirement can be satisfied by some (but not all) courses within GE categories: C1, Upper-Division C, D1, D2, Upper-Division D, or E.

MAJOR COURSES SHOULD BE TAKEN IN QUARTERS DESIGNATED ON THIS EE FLOWCHART

† Course can be taken previously or concurrently.

¹ Either the ENGR 459, ENGR 460, and ENGR 461 (6) series or the ENGR 463, ENGR 464, and ENGR 465 (6) series may substitute for the EE 460, EE 461, and EE 462 (6) series or the EE 460, EE 463, and EE 464 (6) series.

² See catalog for course options. Consultation with advisor is recommended prior to selecting Technical Electives or Approved Electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals. No course credits may be used simultaneously to satisfy both Approved Engineering Elective and Technical Elective requirements.

³ EE 335/375 and EE 402 may be taken spring/fall of soph/junior or junior/senior years.

⁴ Transfer students take EE 112 (2) & IME 156(2) or EE 112 (2) & EE 143 (1) & one additional unit of Free Elective.

UNLESS A CONCENTRATION IS DECLARED, THE DEFAULT WILL BE GENERAL CURRICULUM IN ELECTRICAL ENGINEERING.

Legend:

Course Title Course # (Units) <small>(Prerequisite)</small>	Major (96)
[GE Area]	Support (52)
	General Ed. (44)