CAL POLY
Computer Science & Software Engineering
COLLEGE OF ENGINEERING

SOFTWARE ENGINEERING

Building 14, Room 254
805-756-2824
csc.calpoly.edu

PROGRAM DESCRIPTION

Software engineering is essential to a wide range of industries and organizations, and Cal Poly software engineers are among the university's most in-demand graduates. The Software Engineering program shares courses with computer science, and students in the two programs take many of the same core computing classes and technical electives. Software engineers expand beyond computer science in areas such as requirements engineering, software architecture and design, user-interface design, software quality assurance, and software deployment and maintenance.

OUR MISSION

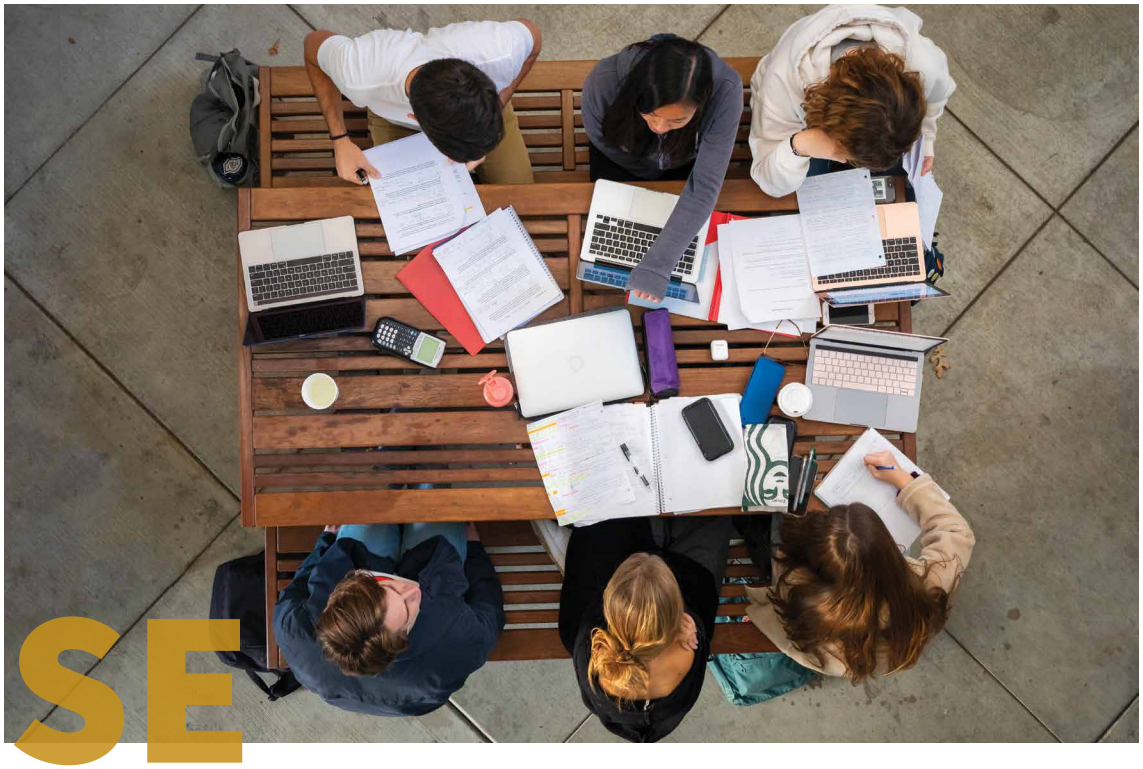
The Computer Science and Software Engineering Department educates students with a Learn by Doing paradigm that allows students to apply their education to solve practical problems in a socially responsible way. Our graduates are fully prepared for entry into industry, government, graduate school and private enterprise.

266 undergraduate students

enrolled in software engineering

25+ graduate students

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



LEARN BY DOING

From programming artificial intelligence problems to designing and developing their own software, students will learn to apply their knowledge to create innovative solutions to real-world problems. Students can explore robotics by building underwater autonomous vehicles or make systems more secure by engaging in ethical hacking practices. With a wide range of electives, clubs and industry projects, students are able to focus on the areas that interest them the most.

ASSOCIATED CLUBS

- **Cal Poly App Development Club** — polyappdev.club
- **Cal Poly Game Development Club (CPGD)** — cpgd.org/
- **Cal Poly Robotics Club** — calpolyrobotics.com
- **Color Coded (Diversity in Tech)** — www.colorcoded.cc
- **SLOHacks** — slohacks.com
- **Society of Women Engineers** — swe.calpoly.edu
- **White Hat** — thewhitehat.club
- **Women Involved in Software & Hardware (WISH)** — calpoly.edu/~wish

SOFTWARE ENGINEERING GRADUATES

Software engineering graduates find significant opportunities in software development and management, software engineering and marketing in California and throughout the world. Graduates are highly recruited by industry, including Google, Microsoft, Apple, Yahoo, IBM, SUN, Intel, Intuit, Amgen, Adobe, Salesforce, DreamWorks, Disney, Electronic Arts (and other game companies), Raytheon, Boeing, Cisco, HP, JPL, Saint Jude Medical, Lawrence Livermore National Labs and many more.

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B.S. IN SOFTWARE ENGINEERING

Suggested Four-year Academic Flowchart • 2022-2026 Catalog

Updated 7/14/2022

FRESHMAN			SOPHOMORE			JUNIOR			SENIOR		
Fall	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring
Introduction to Computing **CPE/CSC 123 (4)[3]** (Basic computer literacy)	*Fundamentals of Computer Science* **CSC/CPE 101 (4)** *	*Data Structures* **CSC/CPE 202 (4)** (CPE/CSC 101 w/min C-; or Instr. Consent)	*Proj-Based Object-Oriented Programming & Design* **CSC/CPE 203 (4)** (CSC/CPE 202 w/min C- or Instr. Consent)	*Systems Programming* **CSC/CPE 357 (4)** (CSC/CPE 102 & 103 or 202 & 203 w/min C- or Instr. Consent; & CSC 225 or CPE/EE 229 or 233)		**CHOOSE ONE** *Professional Responsibilities* **CSC 300 (4)** * OR *Ethics, Science & Tech* **PHIL 323 (4)** *					
		General Psychology **PSY 201/202 (4)** [E]	*Introduction to Computer Organization* **CSC 225 (4)** (CSC/CPE 202)	*Discrete Structures* **CSC 248 (4)** (CSC/CPE 202 & CSC/CPE 203 w/min C- or Instr. Consent)	**Choose one:** **IME 314 (3) OR IME 315 (3)** *	*Software Engineering I* **CSC 308 (4)** (CSC 248 or 348)	*Software Engineering II* **CSC 309 (4)** (CSC 308; CSC/CPE 357)	*Programming Languages* **CSC 430 (4)** (CSC 349)	*Software Requirements Engineering* **CSC 402 (4)** (CSC 307 or 309)	*Software Construction* **CSC 405 (4)** (CSC 305 & 402)	*Senior Project - Software Deployment* **CSC 406 (4)** (CSC 405)
Calculus I **MATH 141 (4)** * [B4]	*Calculus II* **MATH 142 (4)** (MATH 141 w/min C- or Instr. Consent) [B4]	*Calculus III* **MATH 143 (4)** (MATH 142 w/min C- or Instr. Consent) [Area B Elective]	*Calculus IV* **MATH 241 (4)** (MATH 143)	*Linear Analysis I* **MATH 244 (4)** (MATH 143)	*Statistical Methods For Engineers* **STAT 312 (4)** * [Upper-Division B]	*Design & Analysis of Algorithms* **CSC 349 (4)** (CPE/CSC 102 & 103 or 202 & 203; MATH 142; CSC 248, 348, or MATH 248)	*User-Centered Interface Design & Development* **CSC 484 (4)** (CSC 307 or 308; Jr Standing)	Approved Technical Elective **(4)[1]** ***	Approved Technical Elective **(4)[1]** ***	Approved Technical Elective **(4)[1]** ***	
						Introduction to Database Systems **CSC 365 (4)** (CSC 248 or 348; or CSC/CPE 102 & 103 & MATH 248; or CSC/CPE 202 & 203 & MATH 248)	*Individual Software Design & Development* **CSC 305 (4)** (CSC/CPE 203)		Approved Technical Elective **(4)[1]** ***		
Oral Communication **COMS 101/102 (4)**** [A1]			**Physical Science Support Electives (12 units)** *General Physics I, II, & III* **PHYS 141 (4)*** **PHYS 142 (4)*** **PHYS 143 (4)*** [B1 & B3] **OR** *General Chemistry I, II, & III* **CHEM 124 (4)*** **CHEM 125 (4)*** **CHEM 126 (4)*** [B1 & B3]								
Expository Writing **ENGL 133/134 (4)**** [A2]						**Choose one:** *Teamwork* **PSY 350 (4)** (PSY 201 or 202) OR *Small Grp Comm* **COMS 217 (4)** (GE A1 w/min C-)			Math Elective (Choose one): **MATH 248, 334, 335, or 451 (4)** *		Life Science Support Elective **(4-5)[2]** [B2]
GE (4) **	**GE (4)** **			**Choose one:** **PHIL 230 OR PHIL 231 (4)** [C2] (Completion of GE Area A w/ min C-)			**GE (4)** **	**GE (4)** **		**GE (4)** **	**GE (4)** **
	Reasoning, Argumentation, & Writing [A3] **COMS 126, 145, ENGL 145, 147, ES 145, PHIL 126, or WGQS 145 (4)**** (Completion of GE A2 with a C- or better) Can be taken anytime between Winter of Freshman and Winter of Sophomore Years.					**Graduation Writing Requirement GWR*** (Students can attempt to fulfill the requirement after 90 earned units; students should complete the requirement before senior year)					
16	16	16	16	16	15	16	16	16	16	12	12-13

TOTAL: 183-184

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, Lower-Divison C Elective, Upper-Division C, D1, Area D Elective, and F. Upper-Division C should be taken only after Junior standing is reached (90 units).

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, or Upper-Division D.

*** Refer to current catalog for course selection.

† Course can be taken previously or concurrently.

[1] A total of 16 Technical Elective units selected from upper-division and graduate CSC and CPE courses open to those in the major and not otherwise required by the major. See catalog for Technical Electives Guidelines. Consultation with advisor is recommended prior to selecting Technical Electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals. An additional 4 units of CPE/CSC Technical Electives is needed if CSC/CPE 123 is not taken.

[2] Select one Life Science Support Elective from the following: BIO 111, BIO 161, BIO 213 & BMED 213, BOT 121, MCRO 221, or MCRO 224.

[3] An additional 4 units of CPE/CSC technical electives may substitute for CSC/CPE 123, although new students are strongly encouraged to take CSC/CPE 123.

[4] If a General Education (GE) course is used to satisfy a Major or Support requirement, additional units of Free Electives may be needed to complete the total units required for the degree.

Legend:

Course Title
Course # (Units)
(Prerequisite)
[GE Area]

Major (88)
Support (59-60)
General Ed. (36)