



COMPUTER SCIENCE

PROGRAM DESCRIPTION

Computer science plays a pivotal role in tackling every national and global challenge. Mobile computing, artificial intelligence, natural language processing, cybersecurity, big data, cloud computing, social networks, bioinformatics, sustainable computing, human computer interaction, robotics, wearable computing, game design/development, interactive entertainment and the Internet of Things are just a few examples of how computer science is shaping our society and directly helping the human race.

OUR MISSION

Cal Poly computer science educates students using our signature Learn by Doing paradigm allowing 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.



CSC

687
undergraduate
students

enrolled in
computer science

30
graduate
students

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



- related minors:
- Bioinformatics
 - Computing for Interactive Arts
 - Cross-Disciplinary Studies in Data Science

ASSOCIATED CLUBS

- **Cal Poly App Development Club** — polyappdev.club
- **Cal Poly Game Development Club (CPGD)** — cpgd.org/
- **Cal Poly Linux Users Group (CPLUG)** — cplug.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

CONCENTRATIONS

The interactive entertainment concentration prepares students for technical-oriented careers relating to computer graphics, digital animation, video games and interactive experiences. While not formal concentrations, the computer science major offers a wide choice of technical electives that allow you to focus on particular areas of computer science, including databases, distributed computing, software engineering, programming languages, graphical user interfaces, operating systems, computer networks and artificial intelligence.



B.S. IN COMPUTER SCIENCE

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)⁵ <small>(Basic computer literacy)</small>	Fundamentals of Computer Science CSC/CPE 101 (4) *	Data Structures CSC/CPE 202 (4) <small>(CPE/CSC 101 w/min C- or Instr. Consent)</small>	Proj-Based Object-Oriented Programming & Design CSC/CPE 203 (4) <small>(CSC/CPE 202 w/min C- or Instr. Consent)</small>	Discrete Structures CSC 248 (4) <small>(CSC/CPE 202 & 203 w/min C- or Instr. Consent)</small>	Design & Analysis of Algorithms CSC 349 (4) <small>(CPE/CSC 102 & 103 or 202 & 203; MATH 142; & CSC 248, 348, or MATH 248)</small>	Intro to Database Systems CSC 365 (4) <small>(CSC 248 or 348; or CPE/CSC 102 & 103 & MATH 248; or CPE/CSC 202 & 203 & MATH 248)</small>	Programming Languages CSC 430 (4) <small>(CSC 349)</small>		Introduction to Operating Systems CSC/CPE 453 (4) <small>(CSC/CPE 357; 225 or CPE/EE 229 or 233)</small>			
			Introduction to Computer Organization CSC 300 (4) <small>(CSC/CPE 202)</small>			Professional Responsibilities CSC 300 (4) <small>(Area A3; CSC/CPE 357; Jr Standing)</small>		Ethics, Science & Tech PHIL 323 (4) *		Choose One Series: Senior Project Lab I & II CSC 491 (2) (CSC 307 or 309; Instr. Consent) OR CSC 492 (2) (CSC 491; Instr. Consent)		
		Life Science Support Elective (4)^{1,9} [B2]	Additional Science Support Elective (4)^{2,9} [Area B Elective]	Systems Programming CSC/CPE 357 (4) <small>(C- or better in CSC/CPE 102 & 103, or 202 & 203, or Instr. Consent; CSC 225 or CPE/EE 229 or 233)</small>			Choose one:⁷ CSC 321(4) CSC 323 (4) CSC 325 (4) *		General Curriculum Technical Elective (4)⁴ *			
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]	Choose one: Linear Math MATH 206 (4) <small>(MATH 143)</small> OR MATH 244 (4) <small>(MATH 143)</small>			Choose One Series: Intro Software Engineering & Elective CSC 307 (4) <small>(CSC 248 or 348; CPE/CSC 357)</small> OR General Curriculum Technical Elective (4)⁴ *		General Curriculum Technical Elective (4)⁴ *		General Curriculum MATH/STAT Support Elective (4)³ *		
Oral Communication COMS 101/102 (4)** [A1]			Physical Science Support Electives (12 units)⁹ General Physics I, II, & III PHYS 141 (4)* PHYS 142 (4)* PHYS 143 (4)* <small>[B1 & B3]</small> OR Chemistry I, II, & III CHEM 124 (4)* CHEM 125 (4)* CHEM 126 (4)* <small>[B1 & B3]</small>			Software Engineering I & II CSC 308 (4) <small>(CSC 248 or CSC 348)</small> OR General Curriculum Technical Elective CPE 309 (4)⁶ <small>(CSC 308; CSC/CPE 357)</small>		STAT 312 (4) * [Upper-Division B]			General Curriculum Technical Elective (4)⁴ *	
Expository Writing ENGL 133/134 (4)** [A2]			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)</small> Can be taken anytime between Winter of Freshman and Winter of Sophomore Years.			Choose one: Philosophical Classics PHIL 230 or PHIL 231 (4) [C2] <small>(Completion of GE Area A w/ min C-)</small>		Choose one: Ethnic Studies/Women, Gender & Queer Studies ES/WGQS 350 or 351 (4) *		General Curriculum Technical Elective CPE 464 (4) <small>(CSC/CPE 357, Recom: STAT 312/321/350)</small> OR General Curriculum Technical Elective CPE 469 (4)⁸ <small>(CSC/CPE 357)</small>		
GE (4) **	GE (4) **					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>		GE (4) **	GE (4) **	GE (4) **	GE (4) **	
16	16	16	16	12	16	16	12	16	16	14	14	
										TOTAL:	180	

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-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 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.

*** Refer to current catalog for course selection.

^ Cannot double count units.

† Course can be taken previously or concurrently.

¹ Select 4 units from the following "Life Science" Support Electives: BIO 111, 161, 213 & BMED 213; BOT 121; MCRO 221.

² Select 4 units from the following "Additional Science" Support Electives: BIO 111, 161; BOT 121; CHEM 124; MCRO 221; PHYS 141.

³ Select 4 units from the following "MATH/STAT Support Electives": MATH 241, 248, 306, 334, 335, 437, 470; STAT 323, 324, 330, 331, 334, 416, 418, 419, 434.

⁴ Select 20 units from the Technical Electives Guidelines in the online catalog.

⁵ Although new students are strongly encouraged to take CSC/CPE 123, an additional 4 units of CPE/CSC Technical Electives within your selected concentration or, if not selected, the General Curriculum may substitute for CSC/CPE 123.

⁶ CSC 309 counts as a Technical Elective. Students in the Artificial Intelligence and Machine Learning concentration or the Privacy and Security concentration are advised to take CSC 307 instead of CSC 308 and CSC 309.

⁷ Students in the Privacy and Security Concentration must take CSC 321.

⁸ CPE 469 counts as a Technical Elective for the General Curriculum, and the following concentrations: Graphics, Privacy and Security, and Data Engineering.

⁹ No double-counting is allowed between Additional Science Support Elective and Life Science Support Elective or Physical Science Support Elective.

¹⁰ 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)	 Major (92)
	 Support (48)
	 General Ed. (40) ¹⁰
[GE Area]	