CAL STATE LA | Computer Science

Curriculum for B.S. Degree in Computer Science

120 units (Effective Fall 2025 Semester Term)

General Education (21 units)

Lower Division General Education Requirements (21 units out of 34 units; 13 units met in major)

Area 1 English Communication			
	1A English Composition	ENGL 1010	3
	1B Critical Thinking	*Met in major by multiple courses*	
	1C Oral Communication	COMM 1100	3
Area 2 Mathematical Concepts and Quantitative Reasoning		*Met in major (Math 2110)*	
Area 3 Arts and Humanities			
	3A Arts	Arts	3
	3B Humanities	*Met in major (CS 3801)*	
Area 4 Social and Behavioral Sciences			
	Social & Behavioral Sciences	Social & Behavioral Sciences	3
	American Institutions	US Constitution & State/Local Government	3
Area 5 Physical and Biological Sciences			
	5A Physical Sciences	*Met in major (PHYS 2100)*	
	5B Biological Sciences	Biological Science	3
	5C Laboratory	*Met in major (PHYS 2100 lab)*	
Area 6 Ethic Studies			3

Upper Division General Education Requirements (9 units met in major)

These requirements are met in major by CS 3112, CS 3186, CS 4961, and CS 4962.

University Requirements (6 units)

American Institutions	US History	3
Introduction to Higer Education (IHE)	CS 1010	3

Major Requirements (93 units)

Lower Division Major Requirements (43 units)

CS 1222	Introduction to Relational Databases	*Prerequisites: CS 1010, Computer Literacy*	3
CS 2011	Introduction to Programming I	*Prerequisites: CS 1010 and MATH 1040; or consent of the instructor*	4
CS 2012	Introduction to Programming II	*Prerequisites: CS 2011 with a grade of C or better; Recommended: MATH 2110*	4
CS 2013	Programming with Data Structures	*Prerequisites: CS 2012 with a C or better grade; Recommended: MATH 2120*	4
CS 2148	Discrete Structures	*Prerequisites: CS 2011 and MATH 2110, all graded C or better*	4
CS 2445	Introduction to Computer Systems	*Prerequisites: CS 2011*	3
CS 2470	Fundamentals of Network Systems and Cybersecurity	*Prerequisites: CS 2010 or CS 2011*	3
ENGL 2030	Introduction to Technical Writing	*Prerequisites: ENGL 1010*	3
MATH 2110	Calculus I	*Prerequisites: 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.*	4
MATH 2120	Calculus II	*Prerequisites: Graded C or higher in MATH 2110; Corequisite(s): MATH 2121 if MATH 2110 is graded less than B-.*	4
MATH 2740	Introduction to Data Science and Statistics	*Prerequisites: ESM 1082, MATH 1040, MATH 1081 or MATH 1082*	3
PHYS 2100	General Physics I: Mechanics	*Prerequisites: MATH 2110 with a grade of C or better. Corequisite(s): PHYS 2101 if MATH 2110 grade is less than B-.*	4

Upper Division Major Requirements (32 units)

CS 3035	Programming Paradigms	*Prerequisites: CS 2013 with a grade C or better*	3
CS 3112	Analysis of Algorithms	*Prerequisites: CS 2013, CS 2148, and Math2740 all graded C or better*	3
CS 3186	Introduction to Automata Theory	*Prerequisites: CS 2013 and CS 2148, all graded C or better*	3
CS 3220	Web and Internet Programming	*Prerequisites: CS 1222 and CS 2013, all with a grade C or better*	4
CS 3337	Software Engineering	*Prerequisites: CS 2013 with a grade C or better*	3
CS 3338	Software Engineering Tools	*Prerequisites: CS 2013*	1
CS 3801	Societal and Ethical Issues in Computing	*Prerequisites: CS 2013 with a grade C or better,or Consent of the instructor*	3
CS 4440	Introduction to Operating Systems	*Prerequisites: CS 2013 and CS 2445 and CS 2470, all graded C or better*	3
CS 4961	Software Design Laboratory I	*Prerequisites: Completion of a course each from Lower Division GE Blocks: A1, A2, B, C and D; and obtained a garde of C or better on all these 8 courses: CS 3035, CS 3112, CS 3186, CS 3220, CS 3337, CS 3338, CS 3801, and CS 4440.*	3
CS 4962	Software Design Laboratory II	*Prerequisites: CS 4961*	3
CS 4963	Computer Science Recapitulation	*Prerequisites: PHYS 2100 Pre/Co-requisite(s): CS 4962*	3

Major Electives (18 units)

CS 4075	Concurrent and Distributed Programming	*Prerequisites: CS 3112, CS 3035*	3
CS 4188	Compilers	*Prerequisites: CS 3035, CS 3112, CS 3186*	3
CS 4220	Current Trends in Web Design and Development	*Prerequisites: CS 3112, CS 3220*	3
CS 4222	Principles of Data Base Systems	*Prerequisites: CS 1222, CS 3112*	3
CS 4470	Computer Networking Protocols	*Prerequisites: CS 2013 and CS 2470*	3
CS 4471	Computer Networks Configuration and Management	*Prerequisites: CS 2013 and CS 2470*	3
CS 4472	Computer and Cyber Security	*Prerequisites: CS 2470 and CS 3112*	3
CS 4540	Topics in Advanced Computer Science	*Prerequisites: As needed for specific topic*	3
CS 4550	Computer Graphics	*Prerequisites: CS 3112*	3
CS 4551	Multimedia Software Systems	*Prerequisites: CS 3112*	3
CS 4555	Introduction to 3D Computer Game Programming	*Prerequisites: CS 3112*	3
CS 4635	Modeling and Simulation	*Prerequisites: CS 3112*	3
CS 4660	Artificial Intelligence	*Prerequisites: CS 3112*	3
CS 4661	Introduction to Data Science	*Prerequisites: CS 3112*	3
CS 4662	Advanced Machine Learning and Deep Learning	*Prerequisites: CS 4661*	3
CS 4665	Introduction to Data Visualization	*Prerequisites: CS 3112*	3
CS 4780	Cryptography and Information Security	*Prerequisites: CS 3112*	3
CS 4875	Human Centered Computing	*Prerequisites: CS 3112*	3
EE 3445	Computer Organization	*Prerequisites: CS 2013 or permission of the instructor*	3