COMPUTER SCIENCE, BACHELOR OF SCIENCE

Requirements

Total Course Requirements for the Bachelor's Degree

See the "Requirements for the Bachelor's Degree (https://catalog.csudh.edu/general-information/baccalaureate-degrees-undergraduate-studies/)" in the University Catalog for complete details on general degree requirements. A minimum of 40 units, including those required for the major, must be upper division.

Elective Requirements

Completion of elective courses (beyond the requirements listed below) to reach a total of a minimum of 120 units.

General Education Requirements (49 units)

See the "General Education (https://catalog.csudh.edu/general-education/)" requirements in the University Catalog or the Class Schedule for the most current information on General Education requirements and course offerings.

Graduation Writing Assessment Requirement

See the "Graduation Writing Assessment Requirement (https://catalog.csudh.edu/general-information/baccalaureate-degrees-undergraduate-studies/gwar-certifying-courses/)" in the University Catalog.

Minor Requirements

Single field major, no minor required.

Major Requirements (76 units)

Students entering the Computer Science program must complete the following.

1. Earn an overall grade point average of 2.0 or better in courses taken outside of the department.
2. Earn a grade of "C" or better in each course taken within the department.
3. Earn a grade of "C" or better in all direct and indirect prerequisite courses listed in the catalog before advancing to the next level course in a sequence for English, Mathematics, and Science courses.
4. Students must take capstone course CSC 492 Senior Design at CSUDH.

The following courses, or their approved transfer equivalents, are required of all candidates for this degree.

Code	Title	Hours
Lower Division Requirements		
CSC 121	Introduction to Computer Science and Programming I [1]	4
CSC 123	Introduction to Computer Science and Programming II	4
CSC 221	Assembly Language and Introduction to Computer Organization	3
CSC 2xx		3
MAT 191	Calculus I	5
MAT 193	Calculus II	5
MAT 271	Foundations Of Higher Math	3
MAT 281	Discrete Mathematics	3
PHY 130	General Physics I	5
PHY 132	General Physics II	5
Upper Division Requirements [2]		
Core Requirements:		
CSC 311	Data Structures	3
CSC 321	Programming Languages	3
CSC 331	Computer Organization	3
CSC 341	Operating Systems	3
Required Courses:		
CSC 301	Computers And Society	3
CSC 401	Analysis Of Algorithms	3
CSC 481	Software Engineering	3
CSC 492	Senior Design	3
MAT 321	Probability and Statistics	3
MAT 361	Finite Automata	3
Electives		
Select two courses from the following:		6
CSC 395	Sel Topics in Computer Science	
CSC 411	Artificial Intelligence	
CSC 421	Advanced Programming Languages	
CSC 431	Advanced Computer Organization	
CSC 441	Advanced Operating Systems	
CSC 451	Computer Networks	
CSC 453	Data Management	
CSC 455	WWW Design and Management	
CSC 459	Security Engineering	
CSC 461	Computer Graphics I	
CSC 463	Computer Graphics II	
CSC 471	Compiler Construction I	
CSC 490	Senior Seminar	
CSC 495	Selected Topics:	
MAT 367	Numerical Analysis I	
MAT 369	Numerical Analysis II	
Total Hours		**76**

[1] Major students may substitute this course for General Education Area A3. Please contact the CNBS Student Success Center to request the course substitution.

[2] A minimum of 18 upper division units in the major must be taken in residence at CSU Dominguez Hills.

Program Learning Outcome

Graduates of the program will have an ability to:

- Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
- Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
- Communicate effectively in a variety of professional contexts.

- Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
- Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
- Apply computer science theory and software development fundamentals to produce computing-based solutions.

4- Year Roadmap

Course	Title	Hours
First Year		
Fall		
CSC 121	Introduction to Computer Science and Programming I	4
HIS 101	History Of United States	3
GE Area A1 Oral Communication		3
GE Area A2 Written Communication		3
GE Area C1 Arts Courses		3
	Hours	**16**
Spring		
MAT 191	Calculus I (satisfies GE Area B4)	5
CSC 123	Introduction to Computer Science and Programming II	4
PHY 130	General Physics I (satisfy GE Areas B1 and B3)	5
GE Area C2 Letters Course		3
	Hours	**17**
Second Year		
Fall		
MAT 193	Calculus II	5
POL 101	American Institutions	3
PHY 132	General Physics II	5
GE Area A3 Logic/Critical Thinking		3
	Hours	**16**
Spring		
CSC 281	Discrete Structures	3
CSC 251	C Language Programming and Unix (satisfies CSC lower division elective)	3
CSC 300	Software Development	3
CSC 221	Assembly Language and Introduction to Computer Organization	3
GE Area B2 Life Science		3
	Hours	**15**
Third Year		
Fall		
CSC 301	Computers And Society (satisfies GE Area B5)	3
MAT 321	Probability and Statistics	3
CSC 311	Data Structures	3
CSC 331	Computer Organization	3
GE Area D1 Perspectives on Individuals, Groups, and Society		3
	Hours	**15**
Spring		
CSC 401	Analysis Of Algorithms	3
CSC 321	Programming Languages	3
Upper Division CSC Elective 1		3
Additional GE in Area C1 or C2		3
GE Area E Lifelong Learning and Self-Development		3
	Hours	**15**
Fourth Year		
Fall		
CSC 481	Software Engineering	3
CSC 341	Operating Systems	3
CSC 371	Finite Automata	3
ENG 350	Advanced Composition (satisfies GWAR requirement)	3
GE Area C3 Integrative Studies in the Humanities		3
GE Area D2 Global and Historical Perspectives		3
	Hours	**18**
Spring		
CSC 492	Senior Design	3
Upper Division CSC Elective 2		3
GE Area B5 Integrative Studies in Natural Sciences		3
GE Area D3 Integrative Studies in the Social Sciences		3
GE Area F Ethnic Studies		3
	Hours	**15**
	Total Hours	**127**

2-Year Roadmap (transfer students)

Course	Title	Hours
First Year		
Fall		
CSC 300	Software Development	3
CSC 301	Computers And Society (satisfies GE Area B5)	3
MAT 321	Probability and Statistics	3
CSC 311	Data Structures	3
CSC 331	Computer Organization	3
	Hours	**15**
Spring		
CSC 401	Analysis Of Algorithms	3
CSC 321	Programming Languages	3
ENG 350	Advanced Composition (satisfies GWAR requirement)	3
Upper Division CSC Elective 1		3
GE Area C3 Integrative Studies in the Humanities		3
	Hours	**15**
Second Year		
Fall		
CSC 481	Software Engineering	3
CSC 341	Operating Systems	3
CSC 371	Finite Automata	3
GE Area D3 Integrative Studies in the Social Sciences		3
Elective to meet 120 units		3
	Hours	**15**
Spring		
CSC 492	Senior Design	3
Upper Division CSC Elective 2		3
Elective to meet 120 units		3
Elective to meet 120 units		3
Elective to meet 120 units		2
	Hours	**14**
	Total Hours	**59**