

# 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 (43 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 (3 Units)

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

### Statutory Requirements: United States History, Constitution and American Ideals (6 Units)

See the "University Graduation Requirements (<https://catalog.csudh.edu/general-information/baccalaureate-degrees-undergraduate-studies/university-graduation-requirements/>)" section in the University Catalog.

### Minor Requirements

Single field major, no minor required.

### Major Requirements (75 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
<b>Lower Division Requirements (37 units)</b>		
CSC 121	Introduction to Computer Science and Programming I <sup>1</sup>	4
CSC 123	Introduction to Computer Science and Programming II	4

CSC 221	Assembly Language and Introduction to Computer Organization	3
or MAT 281	Discrete Mathematics	
CSC 2xx	Lower Division Computer Science Elective	3
MAT 191	Calculus I	5
MAT 193	Calculus II	5
PHY 130	General Physics I	5
PHY 132	General Physics II	5
<b>Upper Division Requirements (38 units) <sup>2</sup></b>		
Core Requirements (15 units)		
CSC 300	Software Development	3
CSC 311	Data Structures	3
CSC 321	Programming Languages	3
CSC 331	Computer Organization	3
CSC 341	Operating Systems	3
Required Courses (18 units)		
CSC 301	Computers and Society	3
CSC 371	Finite Automata	3
CSC 401	Analysis of Algorithms	3
CSC 481	Software Engineering	3
CSC 492	Senior Design	3
MAT 321	Probability and Statistics	3
<b>Electives (6 units)</b>		
Select two courses from the following:		
CSC 395	Self-Topics in Computer Science	6
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	

<sup>1</sup> Major students may substitute this course for General Education Area A3. Please contact the CNBS Student Success Center to request the course substitution.

<sup>2</sup> A minimum of 18 upper division units in the major must be taken in residence at CSU Dominguez Hills.

## Program Learning Outcome

### 4- Year Roadmap

First Year		Hours
Fall		
CSC 121	Introduction to Computer Science and Programming I (satisfies GE Area 1B)	4

HIS 101	History Of United States	3
GE Area 1C Oral Communication		3
GE Area 1A English Composition		3
GE Area 3A Arts Courses		3
<b>Hours</b>		<b>16</b>
<b>Spring</b>		
MAT 191	Calculus I (satisfies GE Area 2)	5
CSC 123	Introduction to Computer Science and Programming II	4
PHY 130	General Physics I (satisfy GE Areas 5A and 5C)	5
GE Area 3B Humanities		3
<b>Hours</b>		<b>17</b>
<b>Second Year</b>		
<b>Fall</b>		
MAT 193	Calculus II	5
POL 101	American Institutions	3
PHY 132	General Physics II	5
Elective to meet 120		3
<b>Hours</b>		<b>16</b>
<b>Spring</b>		
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 5B Life Science		3
<b>Hours</b>		<b>15</b>
<b>Third Year</b>		
<b>Fall</b>		
CSC 301	Computers and Society (satisfies GE Area 5UD)	3
MAT 321	Probability and Statistics	3
CSC 311	Data Structures	3
CSC 331	Computer Organization	3
GE Area 4A Perspectives on Individuals, Groups, and Society		3
<b>Hours</b>		<b>15</b>
<b>Spring</b>		
CSC 401	Analysis of Algorithms	3
CSC 321	Programming Languages	3
Upper Division CSC Elective 1		3
GE Area 4UD Integrative Studies in the Social and Behavioral Sciences		3
<b>Hours</b>		<b>12</b>
<b>Fourth Year</b>		
<b>Fall</b>		
CSC 481	Software Engineering	3
CSC 341	Operating Systems	3
CSC 371	Finite Automata	3
ENG 350	Advanced Composition (satisfies GVAR requirement)	3
GE Area 3UD Integrative Studies in the Humanities		3
GE Area 4B Global and Historical Perspectives		3
<b>Hours</b>		<b>18</b>
<b>Spring</b>		
CSC 492	Senior Design	3
Upper Division CSC Elective 2		2
ITC 300	Security in a Digital Society (Meets GE Area 4UD)	3
GE Area 6 Ethnic Studies		3
<b>Hours</b>		<b>11</b>
<b>Total Hours</b>		<b>120</b>

**2-Year Roadmap (transfer students)**

<b>First Year</b>		
<b>Fall</b>		
CSC 300	Software Development	3
CSC 301	Computers and Society (satisfies GE Area 5UD)	3
MAT 321	Probability and Statistics	3
CSC 311	Data Structures	3
CSC 331	Computer Organization	3
<b>Hours</b>		<b>15</b>
<b>Spring</b>		
CSC 401	Analysis of Algorithms	3
CSC 321	Programming Languages	3
ENG 350	Advanced Composition (satisfies GVAR requirement)	3
Upper Division CSC Elective 1		3
GE Area 3UD Integrative Studies in the Humanities		3
<b>Hours</b>		<b>15</b>
<b>Second Year</b>		
<b>Fall</b>		
CSC 481	Software Engineering	3
CSC 341	Operating Systems	3
CSC 371	Finite Automata	3
GE Area 4UD Integrative Studies in the Social Sciences		3
Elective to meet 120 units		3
<b>Hours</b>		<b>15</b>
<b>Spring</b>		
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		3
<b>Hours</b>		<b>15</b>
<b>Total Hours</b>		<b>60</b>