## Features

The University's location in the South Bay area of greater Los Angeles provides direct access to many major government contractors, manufacturers, and international centers of commerce and finance. This provides excellent opportunities for work-study and early job placement.

Our highly qualified full-time faculty are supplemented by talented and dedicated part-time faculty drawn from local firms and schools. Good teaching and easy on-campus access to professional quality computing systems enhances a degree program that provides a solid core curriculum and a broad range of electives.

All courses are offered alternately day and evening so that students may complete their programs by enrolling at either time exclusively.

## Graduation with Honors

An undergrad student may be a candidate for graduation with Honors in Computer Science provided he or she meets the following criteria:

1. A minimum of 36 units in residence as CSU Dominguez Hills at least 24 of which are taken in Computer Science major;
2. A minimum GPA of 3.5 in all upper division courses in the Computer Science major completed at CSUDH;
3. Recommendation by Computer Science faculty.

Students who achieve Honors in Computer Science will have the information recorded on their transcripts and diplomas.

## Academic Advising

Faculty guidance in the development of career goals and program planning to achieve goals is available to all majors.

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**CSUDH**

CALIFORNIA STATE UNIVERSITY
DOMINGUEZ HILLS

### Department of Computer Science

College of Natural and Behavioral Sciences  Chair:
Mohsen Beheshti

NSM A-132
Phone: (310) 243-3398
http://csc.csudh.edu

## Preparation

Students entering the computer science program should have completed high school mathematics through trigonometry. Remediation is available but will delay the student's progress towards a Computer Science Degree.

This is a demanding program that places a premium on the student's initiative and effort.

## Career Possibilities

Every level position in the areas of systems analysis, systems programming, applications programming, data engineering, data communications and software engineering provide typical career opportunities for computer science graduates. Such positions are available in a wide variety of software vendors, aerospace and defense related industries, manufacturing and commercial firms, government and other public agencies. Many graduates have also gone on to graduate school. Job opportunities for computer science graduates continue to be excellent because of the continued long-term growth of the computer industry.

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**CALIFORNIA STATE UNIVERSITY
DOMINGUEZ HILLS**

**BACHELOR OF SCIENCE**

# COMPUTER SCIENCE

## Program Description

The modern electric digital computer has become an indispensable tool of government, commerce and technology because of its enormous appetite for data and its near instantaneous processing speed. Computer Science is the discipline of designing methods for solving problems by means of such computers. The subject involves a surprising amalgam of logic, mathematics, electronics, communications and ergonomics.

The curriculum is designed to provide preparation for professional careers in the areas of software design and applied computer science, as well as to give the necessary theoretical background for graduate study in the field and to allow a flexible response to a dynamic and growing profession. The required courses give students a firm foundation in the basic areas of computer science and related areas of mathematics, and a wide choice of electives allow them to tailor their program to their specific interests.

**The baccalaureate program (Bachelor of Science in Computer Science) is accredited by the Computing Accreditation Commission of ABET, http://www.abet.org.**

# Bachelor of Science in Computer Science

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 prerequisites courses listed in the catalog before advancing to the next level course in a sequence for English, Mathematics, and Science course.
4. Students must take capstone course CSC 492 at CSUDH.

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

## Major Requirements (76 units)

**Lower Division Requirements (37 units)**
CSC 121 – Intro to Comp. Sci. & Prog. I (4)
CSC 123 – Intro to Comp. Sci. & Prog. II (4)
CSC 221 – Assem. Lang. & Intro to Comp. Org. (3)
CSC 251 – Unix O/S and C (3)
MAT 191 – Calculus I (5)
MAT 193 – Calculus II (5)
CSC 281 – Discrete Mathematics (3)
PHY 130 – General Physics I (5)
PHY 132 – General Physics II (5)

**A. Upper Division Requirements (39 units)**
1. **Core Requirements (12 units)**
CSC 311 – Data Structures (3)
CSC 321 – Programming Languages (3)
CSC 331 – Computer Organization (3)
CSC 341 – Operating Systems (3)

2. **Required courses (21 units)**
CSC 300 – Software Development (3)
CSC 301 – Computer and Society (3)
CSC 401 – Analysis of Algorithms (3)
CSC 481 – Software Engineering (3)
CSC 492 – Senior Project (3)
MAT 321 – Probability and Statistics (3)
CSC 361 – Finite Automata (3)

3. **Electives: Select two courses from the following (6 units):**
CSC 395 – Special Topics (3)
CSC 411 – Artificial Intelligence (3)
CSC 421 – Advanced Programming Lang. (3)
CSC 431 – Advance Computer Organization (3)
CSC 441 – Advanced Computer Systems
CSC 451 – Computer Networks (3)
CSC 453 – Data Management (3)
CSC 455 – World Wide Web Design & Management (3)
CSC 459 – Security Engineering I (3)
CSC 461 – Computer Graphics I (3)
CSC 463 – Computer Graphics II (3)
CSC 471 – Complier Construction (3)
CSC 490 – Senior Seminar (3)
CSC 495 – Special Topics (3)

## Minor in Computer Science (36 units)

**A. Lower Division Required Courses (24 units)**
CSC 121 – Intro to Comp. Sci. & Prog. I (4)
CSC 123 – Intro to Comp. Sci. & Prog. II (4)
CSC 221 – Assem. Lang. & Intro to Comp. Org. (3)
MAT 191 – Calculus I (5)
MAT 193 – Calculus II (5)
CSC 281 – Discrete Mathematics (3)

**B. Upper Division Requirements (12 units)**
1. **Required Course (6 units)**
CSC 300 – Software Dev. (3)
CSC 311 – Data Structures (3)

2. **Electives: Select two courses from the following, one of which must have a CSC prefix (6 units)**
CSC 321 – Programming Languages (3)
CSC 331 – Computer Organization (3)
CSC 341 – Operating Systems (3)
CSC 401 – Analysis of Algorithms (3)
CSC 411 – Artificial Intelligence (3)
CSC 421 – Advanced Programming Lang. (3)

3. **Electives**
CSC 431 – Advanced Computer Programming (3)
CSC 441 – Advanced Operating Systems (3)
CSC 451 – Computer Networks (3)
CSC 453 – Data Management (3)
CSC 455 – World Wide Web Design and Management (3)
CSC 461 – Computer Graphics I (3)
CSC 463 – Computer Graphics II (3)
CSC 471 – Complier Construction (3)
CSC 490 – Senior Seminar (3)

**Electives (cont.)**
CSC 492 – Senior Design (3)
CSC 361 – Finite Automata (3)

## Certificate in Computer Science (18 units)

**A. Upper Division Requirements (18 units)**
1. **Required Courses (9 units)**
CSC 311 - Data Structures (3)
CSC 321 – Programming Language (3)
CSC 331 – Computer Organization (3)
2. **Electives: Select Three Courses from the following (9 units)**
CSC 337 – Microcomputer (3)
CSC 341 – Operating Systems (3)
CSC 353 – File Processing 3)
CSC 361 – System Programming (3)
CSC 401 – Analysis of Algorithm (3)
CSC 411 – Artificial Intelligence
CSC 421 – Advanced Programming Lang. (3)
CSC 431 – Advanced Computer Org. (3)
CSC 441 – Advanced Operating Systems (3)
CSC 451 – Computer Networks (3)
CSC 453 – Data Management (3)
CSC 455 – World Wide Web Design & Management (3)
CSC 461 – Computer Graphics I (3)
CSC 463 – Computer Graphics II (3)
CSC 471 – Complier Construction (3)
CSC 361 – Finite Automata I (3)

## Other Computer Science Programs
❖ Bachelor of Arts in Computer Technology **(BACT)**
❖ Bachelor of Science in Info. Technology **(BACT)**
❖ Master of Science in Computer Science **(MSCS)**

## Clubs and Student Organizations
▪ **Association for Computing Machinery (ACM)**
ACM@csudh.edu
▪ **Institute of Electrical and Electronics Engineers (IEEE)**
IEEE@csudh.edu
▪ **Cyber Security**
CyberSec@csudh.edu
▪ **Computing Alliance of Hispanic-Serving Institutions (CAHSI)**
CAHSI@csudh.edu