



UC Santa Barbara

Computer Science

Computer Science, B.A. and B.S.

Major Description

The **Bachelor of Arts** in Computer Science is offered in the College of Letters and Science. This interdisciplinary program integrates a solid foundation in computer science with an emphasis in one of the following: biology, economics or geography.

The **Bachelor of Science** in Computer Science is offered in the College of Engineering, preparing computer professionals for long-term careers in research, technical development and a broad spectrum of applications. The emphasis is on program design, analysis and implementation, with both a strong theoretical foundation and a strong practical component, covering most aspects of computing and computer communications.

The **College of Creative Studies'** Computer Science program is aimed at highly creative students with a demonstrated talent in computer science who are interested in exploring and contributing to the field. Collaboration with the Computer Science Department in the College of Engineering offers a stimulating and supportive environment and provides access to a number of laboratories and powerful computing platforms.

Starting Your Computer Science Degree

Lower-Division Major Requirements in Computer Science

From UC's perspective, community college is where you begin working on the first two years of your bachelor's degree. This includes taking lower-division coursework specifically related to your field of study that may be applied toward graduation in your major.

Listed below are the lower-division requirements for **Computer Science, B.A. and B.S.** that may be satisfied with approved community college courses unless otherwise noted. To find out which of these requirements are shared by other UC campuses, see the UC Statewide Transfer Preparation Path in Computer Science.

- Calculus (full sequence)
- Multivariable Calculus
- Linear Algebra
- Differential Equations
- Discrete Mathematics

!!! IMPORTANT !!!
All of these requirements do not necessarily have to be completed **before** you transfer. See the next section of this path for what you must do to be competitive for admission.

FIND YOUR COURSES
Every course at your community college that can be used to meet any of the lower-division major requirements is listed at www.assist.org

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- Calculus-based Physics (full sequence including Mechanics of Solids and Fluids, Electricity and Magnetism, Heat, Light, and Modern Physics; not required for the Computer Science, B.A. degree)
- Introduction to Computer Programming in Java (preferred), C/C++ accepted
- Introduction to C/C++ and Unix
- Additional course in Programming Methods in Java (preferred), C++ accepted

Additional requirements for **Computer Science, B.S.**

- Computer Organization and Architecture
- Programming Project

Becoming Competitive for Admission to Computer Science

Selection Requirements

Below are the lower-division requirements that this campus advises applicants to complete—and by when and with what GPA—to be competitive for admission to the major. It is important to note that meeting these requirements does not necessarily guarantee admission to the campus or major. The stronger your major preparation, the more competitive you will be.

- You **must** complete the following lower-division courses with a cumulative GPA of 3.0 or higher: Calculus (full sequence), Linear Algebra, Differential Equations, Calculus-based Physics (full sequence), Introduction to Computer Programming (Java preferred; C/C++ accepted) and an additional course in Programming Methods in Java (preferred, C++ accepted).
- You are **strongly** advised to complete as many of the following advanced lower-division courses as possible with a cumulative GPA of 3.0 or higher: Multivariable Calculus (first term), Introduction to Computer Systems (not required for the Computer Science, B.A. degree).
- Students are admitted to pre-major status until all prerequisites are fulfilled.
- A supplemental application is required for the College of Creative Studies' Computer Science, B.A. program.

Satisfying General Education in Computer Science

General Education Requirements

While all UC campuses urge you to focus on your lower-division major requirements while in community college, it is important to remember that general education (GE), or “breadth,” requirements for your bachelor’s degree may also be met with approved community college courses. In fact, some majors require completion of lower-division GE coursework as part of your preparation prior to transfer. The good news is you may be able to double-count some of your lower-division major coursework for related GE requirements.

The Intersegmental General Education Transfer Curriculum (IGETC) is a series of courses at California community colleges that students may complete to satisfy GE requirements. Certain students, however, may not be well served by following this GE option. Specific information about satisfying GE requirements as a Computer Science major is listed below.

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- You are advised to focus on completing lower-division major-preparation requirements. If time permits, you may also take courses to fulfill either UCSB's GE requirements or IGETC. If you will not complete IGETC prior to transfer, refer to the College of Engineering GE articulation agreement (available on ASSIST). UCSB's GE requirements do not have to be completed prior to transfer. However, students who choose to follow College of Engineering GE should complete two or three GE courses prior to transfer.
- IGETC is not recommended for the Computer Science, B.S. degree.

Related Majors

Preparation for the following majors may be similar to the Computer Science majors described above (consult the campus catalog and www.assist.org).

- Computer Engineering, B.S.
- Electrical Engineering, B.S.