



# UC San Diego

## Computer Science

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

## Major Description

The **Computer Science, Bachelor of Arts (B.A.)** program allows you flexibility in designing your course of study. Although there are fewer courses required than for the **Computer Science, Bachelor of Science (B.S.)** program, the Computer Science, B.A. program provides a strong foundation in mathematics, physics, programming methodology and skills, computer organization, theory and design of algorithms, hardware and software. You can gain additional breadth and/or depth in computer science and engineering by an appropriate selection of technical electives. By requiring fewer technical electives, the Computer Science, B.A. program serves those students desiring more time for undergraduate studies outside their major subject.

## 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 for Science and Engineering majors)
- Multivariable Calculus
- Linear Algebra
- Differential Equations
- Discrete Mathematics
- Calculus-based Physics (full sequence for Science and Engineering majors)
- Mathematics for Algorithm and Systems
- Introduction to Computer Science and Object-Oriented Programming: Java
- Basic Data Structures and Object-oriented Design
- Computer Organization and Systems Programming (Assembly Language)

#### !!! 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](http://www.assist.org)

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- Perspectives in Computer Science and Engineering (**must** be taken at UCSD)
- Software Engineering
- Software Tools and Techniques Lab

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

- Introduction to Electronic Digital Circuits

## 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, 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, at minimum, prior to transfer: a computer science programming course such as Java, C, or C++; Introduction to Computer Science (Advanced Placement [AP] in Computer Science is accepted); Calculus (full sequence for Science and Engineering majors); Differential Equations; Linear Algebra; Calculus-based Physics (full sequence for Science and Engineering majors).
- Complete as many lower-division major-preparation courses as possible prior to transfer. Doing so will help you move efficiently toward graduation.

## 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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- While completing your major-preparation courses, you should also be working toward completion of IGETC or UCSD GE courses. If it appears you may not complete IGETC prior to transfer, you should satisfy as many UCSD GE requirements as possible. IGETC is accepted at John Muir, Earl Warren, Thurgood Marshall and Sixth colleges only. Students completing IGETC are welcomed at Eleanor Roosevelt and Revelle colleges; however, they must also fulfill the specific GE requirements of those colleges. At UCSD, all majors are available to students in each college, so students who choose IGETC will not be restricted in their choice of major.

## 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](http://www.assist.org)).

- Computer Engineering, B.S.
- Computer Science with Specialization in Bioinformatics, B.S.
- Electrical Engineering, B.S.