

# COMPUTER SCIENCE

The Associate in Science in Computer Science for Transfer (AS-T) degree prepares students for seamless transfer to a CSU. The Computer Science program prepares students for employment in careers in Computer Science and Information Technology (such as computer programming) and for transfer to baccalaureate institutions in order to pursue an advanced degree. Transfer students need to focus on integrating theory and hands-on skills using current tools and technologies.

To be awarded the Associate in Science in Computer Science for Transfer degree, students must:

(1) Complete 60 semester units or 90 quarter units which are eligible for transfer to the California State University (CSU) system, including both of the following:

- (A) The Intersegmental General Education Transfer Curriculum (IGETC).  
 (B) A minimum of 18 semester units or 27 quarter units in a major or area of emphasis, as determined by the community college district.

(2) Obtain a minimum grade point average of 2.0.

While a minimum of 2.0 is required for admission, some majors may require a higher GPA. Please consult with a counselor for more information.

Associate Degrees for Transfer (ADTs) also require that students must earn a "C" or better in all courses required for the major or area of emphasis. A 'P' (Pass) grade is an acceptable grade for courses in the major if the course is taken on a "pass/no pass" basis.

- Demonstrate the principles of structured programming and be able to describe, design, implement, and test structured programs using currently accepted methodology.
- Use an object-oriented programming language to implement, test, and debug algorithms for solving simple problems.
- Implement, test, and debug simple recursive functions and procedures, including searches (linear and binary), sorting (selection, insertion, bubble, merge, quick, and heap), and recursion (factorial, Fibonacci and Towers of Hanoi).
- Demonstrate how fundamental high-level programming constructs are implemented at the machine-language level.
- Formulate elementary mathematical proofs, including proofs by contradiction and proofs using mathematical induction.
- Solve problems and conduct experiments in mathematics and science.

## Program Requirements

Course	Title	Credits
CIS 024C	Python Programming	
	or CIS 054 C/C++ Programming	
	or CIS 084 Java Programming	
CIS 055	Data Structures: Programming	3
CIS 087	Computer Systems, Architecture, and Organization	3
MATH 080	Discrete Structures for Computer Science	3
MATH 071	Calculus I With Analytic Geometry	

or MATH 071 Honors Calculus I With Analytic Geometry

MATH 072	Calculus II with Analytic Geometry	5
PHYS 004A	General Physics	5
BIOL 004A	General Principles and Cell Biology	5

## A.S.-T Degree Requirements

Course	Title	Credits
Major Requirements		32
IGETC		37
Transferable Electives		1
Total Units		60