

COMPUTER SCIENCE A.S.-T

The curriculum in Computer Science is designed to provide the transfer student the opportunity to earn an Associate in Science in Computer Science for Transfer degree. Computer Science is the study of computers, their design, and their uses for computation, data processing, and systems control, including design and development of computer hardware and software, and programming. Computer Science provides a foundation of knowledge for students with career objectives in a wide range of computing and computer-related professions.

AS.CIS.CS.OPTB.AST or AS.CIS.CS.OPTCAST

Program Map Design Your Future!

Begin by exploring MSJC program maps to find a career or transfer (<https://msjc.emsicc.com/?radius=®ion=All%20Regions>) opportunities. Program maps show the recommended sequence of courses that lead to graduation or transfer. The maps were developed by program experts to give you the skills and knowledge you need to succeed.

- **Starting in Spring?** Choose Fall Semester 1 courses.
- **Are you a part-time student?** Start Fall Semester 1 courses and follow the course sequence.

CSU: General Education Option B

Fall Semester 1		Units
CSIS-113A	C++ Programming - Level 1	3
MATH-211	Analytic Geometry and Calculus I	4
ENGL-101	College Composition (formerly Freshman Composition)	4
BIOL-150	General Biology I	4

Units 15

Spring Semester 1		Units
CSIS-211	Introduction to Data Structures and Algorithms	3
MATH-212	Analytic Geometry and Calculus II	4
ENGL-103	Critical Thinking and Writing	3
PS-101	Introduction to American Government and Politics	3
COMM-100	Public Speaking	3

Units 16

Fall Semester 2		Units
CSIS-118B	Computer Organization & Assembly Language	3
ANTH-145	Introduction to Linguistic Anthropology (formerly Introduction to Language and Linguistics)	3
PHY-201	Mechanics and Wave Motion	4
HIST-112	U.S. History Since 1865	3
ART-100	Art Appreciation	3

Units 16

Spring Semester 2		Units
CSIS-213	Discrete Structures	3
PHY-202	Electricity and Magnetism	4

PHIL-101	Introduction to Philosophy I	3
PSYC-101	Introduction to Psychology	3
Select one of the following:		3
HIST-160	Black History in the American Context	
LIT-275	Latinx/Chicanx Literature	
LIT-280	Multiethnic Literature (formerly ENGL-280)	
PS-103	Ethnic Politics in America	
Units		16
Total Units		63

Recommended: Students should take courses the summer before the Fall start of the semester.

CSU: General Education Option C

Fall Semester 1		Units
CSIS-113A	C++ Programming - Level 1	3
MATH-211	Analytic Geometry and Calculus I	4
ENGL-101	College Composition (formerly Freshman Composition)	4
BIOL-150	General Biology I	4
Units		15

Spring Semester 1		Units
CSIS-211	Introduction to Data Structures and Algorithms	3
MATH-212	Analytic Geometry and Calculus II	4
ENGL-103	Critical Thinking and Writing	3
PS-101	Introduction to American Government and Politics	3
COMM-100	Public Speaking	3
Units		16

Fall Semester 2		Units
CSIS-118B	Computer Organization & Assembly Language	3
ANTH-145	Introduction to Linguistic Anthropology (formerly Introduction to Language and Linguistics)	3
PHY-201	Mechanics and Wave Motion	4
HIST-112	U.S. History Since 1865	3
ART-100	Art Appreciation	3
Units		16

Spring Semester 2		Units
CSIS-213	Discrete Structures	3
PHY-202	Electricity and Magnetism	4
PHIL-101	Introduction to Philosophy I	3
PSYC-101	Introduction to Psychology	3
Units		13
Total Units		60

Recommended: Students should take courses the summer before the Fall start of the semester.

CSUSM: General Education Option B

Fall Semester 1		Units
CSIS-113A	C++ Programming - Level 1	3
MATH-211	Analytic Geometry and Calculus I	4
ENGL-101	College Composition (formerly Freshman Composition)	4
BIOL-100 or BIOL-150	Human Biology or General Biology I	4
PSYC-101	Introduction to Psychology	3
Units		18
Spring Semester 1		Units
CSIS-211	Introduction to Data Structures and Algorithms	3
MATH-212	Analytic Geometry and Calculus II	4
ENGL-103	Critical Thinking and Writing	3
CSIS-123A	C++ Programming - Level 2	3
COMM-100	Public Speaking	3
Units		16
Summer 1		Units
Select one of the following:		3
HIST-160	Black History in the American Context	
LIT-275	Latinx/Chicanx Literature	
LIT-280	Multiethnic Literature (formerly ENGL-280)	
PS-103	Ethnic Politics in America	
Units		3
Fall Semester 2		Units
CSIS-118B	Computer Organization & Assembly Language	3
ANTH-145	Introduction to Linguistic Anthropology (formerly Introduction to Language and Linguistics)	3
PHY-201	Mechanics and Wave Motion	4
HIST-112	U.S. History Since 1865	3
MATH-218	Linear Algebra	3
Units		16
Spring Semester 2		Units
CSIS-213	Discrete Structures	3
PHY-202	Electricity and Magnetism	4
PHIL-101	Introduction to Philosophy I	3
ART-100	Art Appreciation	3
PS-101	Introduction to American Government and Politics	3
Units		16
Total Units		69

Recommended: Students should take courses the summer before the Fall start of the semester.

CSUSM: General Education Option C

Fall Semester 1		Units
CSIS-113A	C++ Programming - Level 1	3
MATH-211	Analytic Geometry and Calculus I	4

ENGL-101	College Composition (formerly Freshman Composition)	4
BIOL-100 or BIOL-150	Human Biology or General Biology I	4
PSYC-101	Introduction to Psychology	3
Units		18
Spring Semester 1		Units
CSIS-211	Introduction to Data Structures and Algorithms	3
MATH-212	Analytic Geometry and Calculus II	4
ENGL-103	Critical Thinking and Writing	3
CSIS-123A	C++ Programming - Level 2	3
COMM-100	Public Speaking	3
Units		16
Fall Semester 2		Units
CSIS-118B	Computer Organization & Assembly Language	3
ANTH-145	Introduction to Linguistic Anthropology (formerly Introduction to Language and Linguistics)	3
PHY-201	Mechanics and Wave Motion	4
HIST-112	U.S. History Since 1865	3
MATH-218	Linear Algebra	3
Units		16
Spring Semester 2		Units
CSIS-213	Discrete Structures	3
PHY-202	Electricity and Magnetism	4
PHIL-101	Introduction to Philosophy I	3
ART-100	Art Appreciation	3
PS-101	Introduction to American Government and Politics	3
Units		16
Total Units		66

Recommended: Students should take courses the summer before the Fall start of the semester.

UC: General Education Option C

Fall Semester 1		Units
CSIS-113A	C++ Programming - Level 1	3
MATH-211	Analytic Geometry and Calculus I	4
ENGL-101	College Composition (formerly Freshman Composition)	4
BIOL-100 or BIOL-150	Human Biology or General Biology I	4
PSYC-101	Introduction to Psychology	3
Units		18
Spring Semester 1		Units
CSIS-211	Introduction to Data Structures and Algorithms	3
MATH-212	Analytic Geometry and Calculus II	4
ENGL-103	Critical Thinking and Writing	3
PS-101	Introduction to American Government and Politics	3

COMM-100	Public Speaking	3
Units		16
Fall Semester 2		
CSIS-118B	Computer Organization & Assembly Language	3
ANTH-145	Introduction to Linguistic Anthropology (formerly Introduction to Language and Linguistics)	3
PHY-201	Mechanics and Wave Motion	4
HIST-112	U.S. History Since 1865	3
ART-100	Art Appreciation	3
Units		16
Spring Semester 2		
CSIS-213	Discrete Structures	3
PHY-202	Electricity and Magnetism	4
PHIL-101	Introduction to Philosophy I	3
Select one of the following:		4
SPAN-101	Elementary Spanish I	
FREN-101	Elementary French I	
ASL-100	American Sign Language I	
Units		14
Total Units		64

Recommended: Students should take courses the summer before the Fall start of the semester.

NOTE: For students who did not meet the LOTE requirement in high school, they may fulfill Area 6 by demonstrating proficiency by completing ASL-100 American Sign Language I, FREN-101 Elementary French I or SPAN-101 Elementary Spanish I with a grade C or better. Languages other than English for Native Speakers are also acceptable for meeting this requirement.

Requirements

Course	Title	Credits
Required Core Courses		
CSIS-113A or CSIS-113B	C++ Programming - Level 1 Java Programming - Level 1	3
CSIS-118B	Computer Organization & Assembly Language	3
CSIS-211	Introduction to Data Structures and Algorithms	3
CSIS-213	Discrete Structures	3
MATH-211	Analytic Geometry and Calculus I	4
MATH-212 or MATH-212H	Analytic Geometry and Calculus II Honors Analytic Geometry and Calculus II	4
PHY-201	Mechanics and Wave Motion	4
Select one of the following:		4
PHY-202	Electricity and Magnetism	
PHY-202H	Honors Electricity and Magnetism	
BIOL-150	General Biology I	
BIOL-150H	Honors General Biology I	
Total Units		28

Course	Title	Credits
Units for Major		28
CSU General Education Pattern or IGETC Pattern		37-39

Possible double counting (CSU): 9 units

Possible double counting (IGETC): 6-9 units

Transferable Electives (as needed to reach 60 CSU transferable units)

Total Units for A.S.-T Degree: 60 units

The overall requirements for this Associates Degree for Transfer (ADT) can be met by:

- Completion of 60 semester units or 90 quarter units that are eligible for transfer to the California State University (CSU) or University of California (UC).
- Completion of California State University General Education-Breadth Requirements (CSUGE) or the Intersegmental General Education Transfer Curriculum (IGETC).
- Completion of a minimum of 18 semester units or 27 quarter units in a major or area of emphasis, as determined by the community college district.
- Completion of a minimum grade point average of 2.0.

ADTs also require that students earn a C or better in all courses required for the major or area of emphasis. A "P" (Pass) grade is acceptable if pass is defined as a grade of C or better. ADTs are intended for students who plan to complete a bachelor's degree in a similar major at a CSU campus. A student completing an ADT is guaranteed admission to the CSU system, but not a particular campus or major. Students should meet with a counselor to develop a comprehensive educational plan to further understand university and transfer requirements.

Career Exploration

Discover information about careers that interest you!

1. Take a Career Quiz (<https://msjc.emsicc.com/assessment/>) to learn about yourself and receive career suggestions based on your interests.
2. Search available in-demand jobs (<https://msjc.emsicc.com/browse-careers/>) in your career areas of interest and find up-to-date salaries and education requirements.
3. Find the MSJC Program (<https://msjc.emsicc.com/browse-programs/>) that connects your interests to a career.

Note: There are no guaranteed positions for students completing these programs. Education and work experience required will vary by employer. The salary and benefits for specific occupations will be dependent on work experience, education, background, and employer.