COMPUTER INFORMATION SYSTEMS, A.S.

An Associate degree in CIS may be earned by completing a CIS State Certificate in Internet Authoring, Networking, or Programming (18 units) as well as all MSJC General Education Option A requirements (a total of 60 units).

AS.CIS.NETWORK, AS.CIS.INTERNET, AS.CIS.PROGRAM

Program Map
Design Your Future!

Begin by exploring MSJC program maps to find career or transfer (https://msjc.emsicc.com/?radius=&region=All%20Regions) opportunities. Program maps show the recommended course sequence that leads 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.

MSJC General Education Option A

This program provides students with focused program options. A focused program map contains courses that help students specialize in a distinct area and connects to careers. Talk to a counselor about preparing for transfer to specific schools.

Authoring Focus

Fall Semester 1		Units
ENGL-101	College Composition	3
MATH-105	College Algebra [1]	4
CSIS-101	Introduction to Computers and Data Processing	3
PS-101	Introduction to American Government and Politics	3
CSCR-100	College Success and Career Readiness	3
	Units	**16**
Spring Semester 1		
CSIS-115A	Web Development - Level 1 [2]	3
CSIS-103	Introduction to the Internet	3
CSIS-525	Web Development - Level 2 (formerly CSIS-125A) [3]	3
CSIS-111B	Fundamentals of Computer Programming	3
Select one of the following:		3
PS/ETHS-103	Ethnic Politics in America	
ETHS-112	Introduction to Chicana/o/x Studies	
ETHS/SJS-113	Introduction to Black Studies	
HIST/ETHS-160	Black History in the American Context	
LIT/ETHS-240	American Indian Literature (formerly ENGL-240)	
LIT/ETHS-275	Latinx/Chicanx Literature	
LIT/ETHS-280	Multiethnic Literature (formerly ENGL-280)	
ANTH/HIST-121	Indigenous Peoples of California	
	Units	**15**
Fall Semester 2		
CSIS-113B or CSIS-116E	Java Programming - Level 1 or Python Programming - Level 1	3
CSIS-786	Developing ASP.NET Web Applications (formerly CSIS-086) [1]	3
BIOL-100 or BIOL-115	Human Biology or Introductory Topics in Biology: Cells to Ecosystems (formerly Topics in Biology)	4
ART-100	Art Appreciation	3
ECON-201 or PSYC-101	Principles of Macroeconomics or Introduction to Psychology	3
	Units	**16**
Spring Semester 2		
CSIS-514A	SQL Programming - Level 1 (formerly CSIS-114A) [1]	3
CSIS-124A	SQL Programming - Level 2 [2]	3
CSIS-201	System Analysis and Design	3
CSIS-202	CCNA 1 Computer Networks (formerly Networks and Data Communications)	3
COMM-103	Interpersonal Communication	3
	Units	**15**
	Total Units	**62**

[1] **AREA G (Math Competency) can be demonstrated by a high school math course at or above the level of Algebra 2 with a grade of C or better.**
[2] **Take in first 8 weeks**
[3] **Take in second 8 weeks**

Networking Focus

Fall Semester 1		Units
ENGL-101	College Composition	3
MATH-105	College Algebra [1]	4
CSIS-101	Introduction to Computers and Data Processing	3
PS-101	Introduction to American Government and Politics	3
CSCR-100	College Success and Career Readiness	3
	Units	**16**
Spring Semester 1		
CSIS-202	CCNA 1 Computer Networks (formerly Networks and Data Communications)	3
COMM-103	Interpersonal Communication	3
CSIS-201	System Analysis and Design	3
ART-100	Art Appreciation	3
Select one of the following:		3
PS/ETHS-103	Ethnic Politics in America	
ETHS-112	Introduction to Chicana/o/x Studies	
ETHS/SJS-113	Introduction to Black Studies	
HIST/ETHS-160	Black History in the American Context	

LIT/ETHS-240	American Indian Literature (formerly ENGL-240)	
LIT/ETHS-275	Latinx/Chicanx Literature	
LIT/ETHS-280	Multiethnic Literature (formerly ENGL-280)	
ANTH/HIST-121	Indigenous Peoples of California	
	Units	**15**
Fall Semester 2		
CSIS-791	CCNA 2 Routing and Switching Essentials (formerly CSIS-091) [2]	3
CSIS-592	CCNA 3 Scaling Networks (formerly CSIS-092) [3]	3
BIOL-100 or BIOL-115	Human Biology or Introductory Topics in Biology: Cells to Ecosystems (formerly Topics in Biology)	4
CSIS-160	Information Security Systems	3
CSIS-580	Computer Hardware - Level 1 (formerly CSIS-080)	4
	Units	**17**
Spring Semester 2		
CSIS-581	OS Installation and Configuration (formerly CSIS-081)	3
CSIS-115A	Web Development - Level 1	3
CSIS-514A	SQL Programming - Level 1 (formerly CSIS-114A)	3
ECON-201 or PSYC-101	Principles of Macroeconomics or Introduction to Psychology	3
CSIS-164	Cybersecurity: Ethical Hacking	3
	Units	**15**
	Total Units	**63**

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Programming - General Focus

Fall Semester 1		**Units**
ENGL-101	College Composition	3
MATH-105	College Algebra [1]	4
CSIS-101	Introduction to Computers and Data Processing	3
PS-101	Introduction to American Government and Politics	3
CSCR-100	College Success and Career Readiness	3
	Units	**16**
Spring Semester 1		
CSIS-113A	C++ Programming - Level 1	3
CSIS-160	Information Security Systems	3
CSIS-201	System Analysis and Design	3
ART-100	Art Appreciation	3
Select one of the following:		3
PS/ETHS-103	Ethnic Politics in America	

ETHS-112	Introduction to Chicana/o/x Studies	
ETHS/SJS-113	Introduction to Black Studies	
HIST/ETHS-160	Black History in the American Context	
LIT/ETHS-240	American Indian Literature (formerly ENGL-240)	
LIT/ETHS-275	Latinx/Chicanx Literature	
LIT/ETHS-280	Multiethnic Literature (formerly ENGL-280)	
ANTH/HIST-121	Indigenous Peoples of California	
	Units	**15**
Fall Semester 2		
CSIS-118B	Computer Organization & Assembly Language	3
CSIS-123A	C++ Programming - Level 2	3
BIOL-100 or BIOL-115	Human Biology or Introductory Topics in Biology: Cells to Ecosystems (formerly Topics in Biology)	4
CSIS-594	Cyber Operations (formerly CSIS-094)	3
COMM-103	Interpersonal Communication	3
	Units	**16**
Spring Semester 2		
Select one of the following CSIS level 1 electives:		3
CSIS-115A	Web Development - Level 1 [2]	
CSIS-514A	SQL Programming - Level 1 (formerly CSIS-114A) [2]	
Select one of the following CSIS level 2 electives:		3
CSIS-525	Web Development - Level 2 (formerly CSIS-125A) [3]	
CSIS-211	Introduction to Data Structures and Algorithms	
CSIS-124A	SQL Programming - Level 2 [3]	
CSIS-113C	C# Programming - Level 1	3
CSIS-786	Developing ASP.NET Web Applications (formerly CSIS-086)	3
ECON-201 or PSYC-101	Principles of Macroeconomics or Introduction to Psychology	3
	Units	**15**
	Total Units	**62**

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Programming - Database Focus

Fall Semester 1		**Units**
ENGL-101	College Composition	3
MATH-105	College Algebra [1]	4
PS-101	Introduction to American Government and Politics	3
CSIS-101	Introduction to Computers and Data Processing	3

CSCR-100	College Success and Career Readiness	3
	Units	**16**
Spring Semester 1		
CSIS-116E	Python Programming - Level 1	3
COMM-103	Interpersonal Communication	3
CSIS-201	System Analysis and Design	3
ART-100	Art Appreciation	3
Select one of the following:		3
PS/ETHS-103	Ethnic Politics in America	
ETHS-112	Introduction to Chicana/o/x Studies	
ETHS/SJS-113	Introduction to Black Studies	
HIST/ETHS-160	Black History in the American Context	
LIT/ETHS-240	American Indian Literature (formerly ENGL-240)	
LIT/ETHS-275	Latinx/Chicanx Literature	
LIT/ETHS-280	Multiethnic Literature (formerly ENGL-280)	
ANTH/HIST-121	Indigenous Peoples of California	
	Units	**15**
Fall Semester 2		
CSIS-118B	Computer Organization & Assembly Language	3
CSIS-126E	Python Programming - Level 2 [2]	3
BIOL-100 or BIOL-115	Human Biology or Introductory Topics in Biology: Cells to Ecosystems (formerly Topics in Biology)	4
CSIS-160	Information Security Systems	3
ACCT-124	Financial Accounting - Principles of Accounting I	3
	Units	**16**
Spring Semester 2		
Select one of the following CSIS level 1 electives:		3
CSIS-115A	Web Development - Level 1 [2]	
CSIS-514A	SQL Programming - Level 1 (formerly CSIS-114A) [2]	
Select one of the following CSIS level 2 electives:		3
CSIS-525	Web Development - Level 2 (formerly CSIS-125A) [3]	
CSIS-124A	SQL Programming - Level 2 [3]	
CSIS-113B	Java Programming - Level 1 [2]	3
CSIS-211	Introduction to Data Structures and Algorithms [3]	3
ECON-201 or ACCT-125	Principles of Macroeconomics or Managerial Accounting - Principles of Accounting II	3
	Units	**15**
	Total Units	**62**

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Programming - Web Focus

Fall Semester 1		**Units**
ENGL-101	College Composition	3
MATH-105	College Algebra [1]	4
CSIS-101	Introduction to Computers and Data Processing	3
PS-101	Introduction to American Government and Politics	3
CSCR-100	College Success and Career Readiness	3
	Units	**16**
Spring Semester 1		
CSIS-118B	Computer Organization & Assembly Language	3
COMM-103	Interpersonal Communication	3
CSIS-201	System Analysis and Design	3
ART-100	Art Appreciation	3
Select one of the following:		3
PS/ETHS-103	Ethnic Politics in America	
ETHS-112	Introduction to Chicana/o/x Studies	
ETHS/SJS-113	Introduction to Black Studies	
HIST/ETHS-160	Black History in the American Context	
LIT/ETHS-240	American Indian Literature (formerly ENGL-240)	
LIT/ETHS-275	Latinx/Chicanx Literature	
LIT/ETHS-280	Multiethnic Literature (formerly ENGL-280)	
ANTH/HIST-121	Indigenous Peoples of California	
	Units	**15**
Fall Semester 2		
CSIS-113B	Java Programming - Level 1 [2]	3
CSIS-123B	Java Programming - Level 2 [3]	3
BIOL-100 or BIOL-115	Human Biology or Introductory Topics in Biology: Cells to Ecosystems (formerly Topics in Biology)	4
CSIS-160	Information Security Systems	3
CSIS-115A	Web Development - Level 1	3
	Units	**16**
Spring Semester 2		
CSIS-211	Introduction to Data Structures and Algorithms	3
CSIS-514A	SQL Programming - Level 1 (formerly CSIS-114A) [2]	3
CSIS-124A or CSIS-525	SQL Programming - Level 2 [3] or Web Development - Level 2 (formerly CSIS-125A)	3
CSIS-213	Discrete Structures	3
ECON-201 or PSYC-101	Principles of Macroeconomics or Introduction to Psychology	3
	Units	**15**
	Total Units	**62**

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Note: AREA G (Math Competency) can be demonstrated by a high school math course at or above the level of Algebra 2 with a grade of C or better.

Requirements

An Associate Degree in this program requires students to complete MSJC's local General Education, Option A, by fulfilling all general education areas. In addition, students must complete all major requirements and complete an overall total of 60 degree applicable units with a minimum 2.0 GPA.

Course	Title	Credits
MSJC General Education Option A (https://catalog.msjc.edu/ degrees-certificates-curricula/general-education-option-a/)		**24**
Select one of the following CIS State Certificates:		**18**
Internet Authoring		
Networking		
Programming		
Electives (as needed to reach 60 units)		

Internet Authoring

Course	Title	Credits
Required Courses		
CSIS-103	Introduction to the Internet	3
or CSIS-111B	Fundamentals of Computer Programming	
CSIS-115A	Web Development - Level 1	3
CSIS-514A	SQL Programming - Level 1 (formerly CSIS-114A)	3
CSIS-525	Web Development - Level 2 (formerly CSIS-125A)	3
CSIS-786	Developing ASP.NET Web Applications (formerly CSIS-086)	3
Select one of the following:		3
CSIS-113B	Java Programming - Level 1	
CSIS-113C	C# Programming - Level 1	
CSIS-116E	Python Programming - Level 1	
Total Units		**18**

Networking

Course	Title	Credits
Required Courses		
CSIS-101	Introduction to Computers and Data Processing	3
CSIS-201	System Analysis and Design	3
CSIS-202	CCNA 1 Computer Networks (formerly Networks and Data Communications)	3
CSIS-592	CCNA 3 Scaling Networks (formerly CSIS-092)	3
CSIS-581	OS Installation and Configuration (formerly CSIS-081)	3
CSIS-791	CCNA 2 Routing and Switching Essentials (formerly CSIS-091)	3
Total Units		**18**

Programming

Course	Title	Credits
Required Courses		
CSIS-118B	Computer Organization & Assembly Language	3
CSIS-201	System Analysis and Design	3
Programming Elective Courses		
Complete one of the following language sequences:		6
CSIS-113A & CSIS-123A	C++ Programming - Level 1 and C++ Programming - Level 2	
CSIS-113B & CSIS-123B	Java Programming - Level 1 and Java Programming - Level 2	
CSIS-116E & CSIS-126E	Python Programming - Level 1 and Python Programming - Level 2	
Additional Elective Courses		
Select six units from the following:		6
CSIS-111B	Fundamentals of Computer Programming	
CSIS-115A	Web Development - Level 1	
CSIS-124A	SQL Programming - Level 2	
CSIS-211	Introduction to Data Structures and Algorithms	
CSIS-514A	SQL Programming - Level 1 (formerly CSIS-114A)	
CSIS-525	Web Development - Level 2 (formerly CSIS-125A)	
CSIS-786	Developing ASP.NET Web Applications (formerly CSIS-086)	
Total Units		**18**

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.