

# SCIENCE, MATH & ENGINEERING PATHWAY PROGRAM MAP: CATALOG YEAR: 2023-24



## *Computer Information Systems: Programming Certificate* *Focus: General & Engineering*

Computers are ubiquitous. They are in our hospitals, our educational institutions, our businesses, and our homes. In CIS you will explore how digital solutions are analyzed, developed, and implemented into artifacts that humans use every day.

**Please see a Pathways Counselor:** Create an education plan customized to meet your needs. [Contact a Counselor](#)

### **Transfer Majors/Award Focus**

- Computer Science, A.S.-T CSU, CSUSM, UC
- Computer Information Systems, A.S., Focus: Authoring, Networking, Programming: General, Database, Web
- Internet Authoring, Networking, Programming Certificate

### **GE Pattern/Units**

- GE Pattern: n/a
- Total Units: 21

**Program maps** indicate the major coursework and recommended general education courses to fulfill your degree in 2 years (approximately 15 units/semester or 30 units/year). If you are a part-time student, start Semester 1 courses and follow the course sequence. Some of the courses listed may be substituted by another course. Please view these options in the official course [catalog](#).

### **Semester 1**

**9 Units**

	COURSE	TITLE	UNIT
<input type="checkbox"/>	CSIS-113A	C++ Programming - Level 1	3
<input type="checkbox"/>	CSIS-123A	C++ Programming - Level 2 <sup>1</sup>	3
<input type="checkbox"/>	CSIS-101	Introduction to Computers and Data Processing	3

### **Semester 2**

**12 Units**

	COURSE	TITLE	UNIT
<input type="checkbox"/>	CSIS-201	System Analysis and Design	3
<input type="checkbox"/>	CSIS-118B	Computer Organization & Assembly Language	3
<input type="checkbox"/>	CSIS-111B	Fundamentals of Computer Programming	3
<input type="checkbox"/>	CSIS-211	Introduction to Data Structures and Algorithms	3

### **Notes:**

<sup>1</sup>Take second 8 weeks.

### **Work Experience**

Sign up for a special project or internship opportunity. Gain [work experience](#) and earn credits.

### **Career Options**

Networking & IT Administration (A, B)  
Web Development, Programming (A, B)

Find more careers: [msjc.emsicc.com](https://msjc.emsicc.com)

Required Education: SM: some college; C: Certificate; A: Associate,  
B: Bachelor's, M: Master's; D: Doctorate

### **Financial Aid**

Financial aid is determined by the number of credit hours you take in a semester. Maximize your financial aid by taking 12-15 units per semester.