Degree(s)

Transfer:
- A.S.-T in Computer Science for Transfer (using General Education Requirements Option C)

See: also
A.A. in Liberal Arts - Business & Technology Emphasis

Non-Transfer:
- A.S. in Computer Information Systems (with General Education Requirements Option A)

Certificate(s)
- Certificate in General Track
- Certificate in Internet Authoring
- Certificate in Networking
- Certificate in Programming
- Employment Concentration Certificate(s)
- Computer Forensics
- Computer Hardware Specialist
- Internet Authoring Apprentice

**Program Description**
Computer Information Systems are the tools that facilitate the effective and efficient transformation of data into information. MSJC’s CIS program is designed to provide students with the knowledge and skills required to gain entry level employment as computer programmers, and/or software/system administration technicians.

The requirement and knowledge and hands-on experience in microcomputer applications, programming, operating systems, and networking. The program in Computer Information Systems offers students an opportunity to earn a transfer degree in Computer Science, a non-transfer CIS Associate degree, State Approved Certificate, or locally approved Employment Concentration. The program offers students the choice of pursuing a transfer degree in Computer Science, an Associate in Science (A.S.) degree in Computer Information Systems or certificate(s) with emphasis in General Track, Internet Authoring, Networking and Programming. The program also offers a transfer preparation. The courses offered will transfer to California State University/University of California systems, and other four-year colleges.

These programs offer students a well-equipped technical environment for instruction and lab. CIS courses are taught in computer equipped classrooms, allowing hands-on experience in the use of industry-standard hardware, application software, operating systems, networking, and programming tools.

**Career Opportunities**
All career opportunities listed are representative careers in each field. There are no guaranteed positions for students completing these programs. (See: www.onetonline.org)

**Transfer Degree**
For any BA/BS careers, please see your transfer institution.

**Non-Transfer A.S. Degree**
Computer and Information Systems Manager - Emphasis in General Track: Networking Technologies Apprentice or Service Desk Hardware Support
Computer Forensic Investigators - Emphasis in General Track: Computer Forensics
Information Researcher - Emphasis in Internet Authoring: Internet and Web Technologies
Network Control Technician - Emphasis in Programming: C++ Programming, Java Programming, SQL Programming, Database Programming or Database Developer
Office and Administrative Support Supervisors and Managers - Emphasis in General Track: Computer Hardware Specialist, Networking Technologies Apprentice or Service Desk Hardware Support

**Certificates**

**General Track**
This Certificate is a viable program of study for working professionals who are looking to improve their standing in the workplace by 1) gaining a better understanding of information technologies or 2) by the acquisition of specific job skills.

**Internet Authoring**
This Certificate is a viable program of study for working professionals who are looking to improve their standing in the workplace by 1) gaining a better understanding of information technologies or 2) by the acquisition of specific job skills.
**Institutional Programs**

Web Developer, Internet Developer, Web Designer, Web Publisher, Web Technologies, Application Developer, Software Application Developer

**Networking**

This Certificate is a viable program of study for working professionals who are looking to improve their standing in the workplace by 1) gaining a better understanding of information technologies or 2) by the acquisition of specific job skills.

Computer Forensic Investigator, Software Engineer, System Architect, Computer Systems Analyst, System Designer

**Programming**

This Certificate is a viable program of study for working professionals who are looking to improve their standing in the workplace by 1) gaining a better understanding of information technologies or 2) by the acquisition of specific job skills.

**Employment Concentrations**

Students who are interested in obtaining an advanced degree in one of the Computing & Information Technology disciplines are encouraged to supplement their bachelors/masters programs with a program of study that may be pertinent to their career interest.

**Computer Forensics**

Private Detective, Investigator

**Computer Hardware Specialist**


**Internet Authoring Apprentice**

Web Developer, Internet Developer, Web Designer, Web Publisher, Web Technologies, Application Developer, Software Application Developer

**Transfer Preparation**

**Computer Science**

MSJC offers a range of course work to prepare students to transfer to four-year colleges and universities. All four-year institutions prescribe their own standards for course evaluation and admissions. Prospective transfer students are advised to research careers, degrees and majors in the Career/Transfer Center, access www.assist.org, review the MSJC catalog and meet with a counselor to expedite their transfer plan.

**Computer Information Systems**

MSJC offers a range of course work to prepare students to transfer to four-year colleges and universities. Courses that fulfill major requirements for an associate degree in this program might not be the same as those required for transfer into the major at a four-year university. All four-year institutions prescribe their own standards for course evaluation and admissions. Prospective transfer students are advised to research careers, degrees and majors in the Career/Transfer Center, access www.assist.org, review the MSJC catalog and meet with a counselor to expedite their transfer plan.

**Learning Outcomes**

- Recognize that a system consists of people, procedures, hardware, software, and data within a global environment.
- Apply systems concepts in the investigation, evaluation, and resolution of information technology problems.
- Recognize how the very large amounts of data collected by modern organizations can be used to review, redesign, and improve processes.
- Employ applications software and software tools in the application of information technologies to help individuals, groups, and organizations achieve their goals.
- Analyze existing processes based on interviewing, observation, documentation, analysis and other similar methods.
- Research and apply industry reference models and best practices in order to improve process designs.
- Assess, manage, and control IT risks.
- Demonstrate working effectively as a member of the team to accomplish common goals.
- Analyze technical information, as well as listen effectively to, communicate orally with, and prepare memos, reports and documentation for a wide range of audiences.
- Investigate and assess new sources of information and learning opportunities to stay abreast of emerging information and computing technologies.
- List career paths related to the program of study, as well as any qualifications and/or professional certifications that may be associated with those careers.

**Degrees**

**Transfer A.S.-T Degree**

**Computer Science**

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.

The major required for an A.S.-T in Computer Science for Transfer may be met by:

- Completion of 60 semester units or 90 quarter units that are eligible for transfer to the California State University.
- The Intersegmental General Education Transfer Curriculum (IGETC).
- A minimum of 18 semester units or 27 quarter units in a major or area of emphasis, as determined by the community college district.
• Obtainment of a minimum grade point average of 2.0.
ADT also requires that students must 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. (30 units)

A.S.-T in Computer Science for Transfer (30 units)

CSIS-113A C++ Programming - Level 1 3 units
or
CSIS-113B Java Programming - Level 1 3 units
CSIS-118B Computer Organization & Assembly Language 3 units
CSIS-211 Introduction to Data Structures and Algorithms 3 units
CSIS-213 Discrete Structures 3 units
MATH-211 Analytic Geometry and Calculus I 5 units
MATH-212 Analytic Geometry and Calculus II 5 units
or
MATH-212H Honors Analytic Geometry and Calculus II 5 units
PHY-201 Mechanics and Wave Motion 4 units
PHY-202 Electricity and Magnetism 4 units
or
PHY-202H Honors Electricity and Magnetism 4 units

Units for Major 30
IGETC General Education Pattern 37
Possible double counting 7
Transferable Electives (as needed to reach 60 CSU transferable units) 3

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

This Associate in Science in Computer Science for Transfer degree is intended for students who plan to complete a bachelor's degree in a similar major at a CSU campus. A student completing this degree is guaranteed admission to the CSU system, but not a particular campus or major. Students should meet with a counselor to develop an educational plan and receive university admission and transfer requirements.

Non-Transfer Degree

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

CERTIFICATES

General Track (18 units)

Required Courses (15 units)

CSIS-101 Introduction to Computers and Data Processing 3 units
CSIS-103 Introduction to the Internet 3 units
CSIS-201 System Analysis and Design 3 units
CSIS-202 Networks and Data Communications 3 units

CSIS-214 Principles of Database Management Systems 3 units

Elective Courses (3 units)

CAPP-122 Using Microsoft Excel 3 units
CAPP-123 Using Microsoft Access – Level 1 3 units
CAPP-098 Using Microsoft Project 3 units

Internet Authoring (18 units)

Required Courses (15 units)

CSIS-103 Introduction to the Internet 3 units
or
CSIS-105A Application Development Fundamentals 3 units
CSIS-114A SQL Programming - Level 1 3 units
CSIS-115A Web Development - Level 1 3 units
CSIS-116B Developing ASP.NET Web Applications 3 units
or
CSIS-116D PHP Web Development 3 units
CSIS-125A Web Development - Level 2 3 units

Elective Courses (3 units)

CSIS-104 Introduction to E-Commerce Infrastructure 3 units
CSIS-113B Java Programming - Level 1 3 units
CSIS113C C# Programming - Level 1 3 units
CSIS-116E Python Programming - Level 1 3 units
CSIS-124A SQL Programming - Level 2 3 units

Networking (18 units)

Required Courses (9 units)

CSIS-101 Introduction to Computers and Data Processing 3 units
CSIS-201 System Analysis and Design 3 units
CSIS-202 Networks and Data Communications 3 units
or
NET-100 Network Fundamentals 3 units

Elective Path (9 units)

Select a Path:
Cisco Path
NET-101 Routing Protocols and Concepts 3 units
NET-102 LAN Switching and Wireless 3 units
NET-103 Accessing the WAN 3 units

Unix/Linux Path
CSIS-153 Using Unix-Based Operating Systems 3 units
CSIS-223A Linux System Administration - Level 1 3 units
CSIS-233A Linux System Administration - Level 2 3 units

Windows Path
CSIS-151 Using the OS Command Line Interface 3 units
CSIS-154 Using and Configuring Windows Operating Systems 3 units

Mt. San Jacinto College 2017-2018 Catalog

Note: Every effort has been made to keep program information current. Please use this information as a guide and consult with the chair of the department/program or an MSJC counselor.
Programming (18 units)

Required Courses (6 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSIS-118B</td>
<td>Computer Organization &amp; Assembly Language</td>
<td>3</td>
</tr>
<tr>
<td>CSIS-201</td>
<td>System Analysis and Design</td>
<td>3</td>
</tr>
</tbody>
</table>

Programming Elective Courses (6 units)

Select a Level 1 & Level 2 course from the same language

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSIS-113A</td>
<td>C++ Programming - Level 1</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>CSIS-123A C++ Programming - Level 2</td>
<td>3</td>
</tr>
<tr>
<td>CSIS-113B</td>
<td>Java Programming - Level 1</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>CSIS-123B Java Programming - Level 2</td>
<td>3</td>
</tr>
<tr>
<td>CSIS-113C</td>
<td>C# Programming - Level 1</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>CSIS-123C C# Programming - Level 2</td>
<td>3</td>
</tr>
<tr>
<td>CSIS-116E</td>
<td>Python Programming - Level 1</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>CSIS-126E Python Programming - Level 2</td>
<td>3</td>
</tr>
</tbody>
</table>

Additional Elective Courses (6 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSIS-111B</td>
<td>Fundamentals of Computer Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSIS-114A</td>
<td>SQL Programming - Level 1</td>
<td>3</td>
</tr>
<tr>
<td>CSIS-115A</td>
<td>Web Development - Level 1</td>
<td>3</td>
</tr>
<tr>
<td>CSIS-116B</td>
<td>Developing ASP.NET Web Applications</td>
<td>3</td>
</tr>
<tr>
<td>CSIS-116D</td>
<td>PHP Web Development</td>
<td>3</td>
</tr>
<tr>
<td>CSIS-124A</td>
<td>SQL Programming - Level 2</td>
<td>3</td>
</tr>
<tr>
<td>CSIS-125A</td>
<td>Web Development - Level 2</td>
<td>3</td>
</tr>
<tr>
<td>CSIS-211</td>
<td>Introduction to Data Structures and Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>CSIS-214</td>
<td>Principles of Database Management Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Employment Concentrations

Computer Forensics (16 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AJ-103</td>
<td>Criminal Evidence</td>
<td>3</td>
</tr>
<tr>
<td>AJ-105</td>
<td>Public Safety Report Writing</td>
<td>3</td>
</tr>
<tr>
<td>AJ-108</td>
<td>Criminal Investigation</td>
<td>3</td>
</tr>
<tr>
<td>CSIS-181</td>
<td>Computer Hardware – Level 1</td>
<td>4</td>
</tr>
<tr>
<td>CSIS-182</td>
<td>Computer Forensics</td>
<td>3</td>
</tr>
</tbody>
</table>

Computer Hardware Specialist Certification (10 units)

This program of study prepares students for A+ industry certification. In order to obtain that certificate students must take the CompTIA exam. Students can register for these exams at http://www.2test.com and testing facilities are available on campus.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSIS-151</td>
<td>Using the OS Command Line Interface</td>
<td>3</td>
</tr>
<tr>
<td>CSIS-154</td>
<td>Using and Configuring Windows Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CSIS-181</td>
<td>Computer Hardware – Level 1</td>
<td>4</td>
</tr>
</tbody>
</table>

Internet Authoring Apprentice (9 units)

Foundation Layer (3 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSIS-103</td>
<td>Introduction to the Internet</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>CSIS-105A Application Development Fundamentals</td>
<td>3</td>
</tr>
</tbody>
</table>

Presentation Layer (3 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSIS-115A</td>
<td>Web Development - Level 1</td>
<td>3</td>
</tr>
</tbody>
</table>

Interactive Layer (3 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSIS-125A</td>
<td>Web Development - Level 2</td>
<td>3</td>
</tr>
</tbody>
</table>
Undergraduate certificate in Computer Information Systems - General Track

Program Length: 72 weeks

Students graduating on time

0% of Title IV students complete the program within 72 weeks

Program Costs*

<table>
<thead>
<tr>
<th>Cost</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>in-state tuition and fees</td>
<td>$828</td>
</tr>
<tr>
<td>out-of-state tuition and fees</td>
<td>$4,950</td>
</tr>
<tr>
<td>books and supplies</td>
<td>$3,584</td>
</tr>
<tr>
<td>off-campus room and board</td>
<td>$24,984</td>
</tr>
</tbody>
</table>

Other Costs

Visit website for more program cost information

*The amounts shown above include costs for the entire program, assuming normal time to completion. Note that this information is subject to change.

Students Borrowing Money

0% of students who attend this program borrow money to pay for it

The typical graduate leaves with

N/A* in debt

*Fewer than 10 students completed this program within normal time. This number has been withheld to preserve the confidentiality of the students.

The typical monthly loan payment

N/A* per month in student loans with N/A* interest rate.

*Fewer than 10 students completed this program within normal time. This number has been withheld to preserve the confidentiality of the students.

The typical graduate earns

not provided per year after leaving this program

Graduates who got jobs

N/A* of program graduates got jobs

*We are not currently required to calculate a job placement rate for program completers.

Program graduates are employed in the following fields:

- Computer and Information Systems Managers
- Computer and Information Research Scientists
- Computer Systems Analysts
- Information Security Analysts
- Software Developers, Applications
- Software Developers, Systems Software
- Computer Network Architects
- Telecommunications Engineering Specialists

Licensure Requirements

*Program has no licensure requirements in any state.

Additional Information

Date Created 3/20/2017

These disclosures are required by the U.S. Department of Education
Mt. San Jacinto College
Undergraduate certificate in Computer Information Systems - Internet Authoring
Program Length: 72 weeks

Students graduating on time
N/A* of Title IV students complete the program within 72 weeks
*Fewer than 10 students enrolled in this program. This number has been withheld to preserve the confidentiality of the students.

Program Costs*
$828 for in-state tuition and fees
$4,950 for out-of-state tuition and fees
$3,584 for books and supplies
$24,984 for off-campus room and board

Other Costs
Visit website for more program cost information

*The amounts shown above include costs for the entire program, assuming normal time to completion. Note that this information is subject to change.

Students Borrowing Money
N/A* of students who attend this program borrow money to pay for it
*Fewer than 10 students enrolled in this program. This number has been withheld to preserve the confidentiality of the students.

The typical graduate leaves with
N/A* in debt
*Fewer than 10 students completed this program within normal time. This number has been withheld to preserve the confidentiality of the students.

The typical monthly loan payment
N/A* per month in student loans with N/A* interest rate.
*Fewer than 10 students completed this program within normal time. This number has been withheld to preserve the confidentiality of the students.

The typical graduate earns
not provided per year after leaving this program

Graduates who got jobs
N/A* of program graduates got jobs
*We are not currently required to calculate a job placement rate for program completers.

Program graduates are employed in the following fields: Web Developers

Licensure Requirements
*Program has no licensure requirements in any state.

Additional Information
Date Created 3/20/2017
These disclosures are required by the U.S. Department of Education
Undergraduate certificate in Computer Information Systems - Networking
Program Length: 72 weeks

Students graduating on time
N/A* of Title IV students complete the program within 72 weeks
*Fewer than 10 students enrolled in this program. This number has been withheld to preserve the confidentiality of the students.

Program Costs*
$828 for in-state tuition and fees
$4,950 for out-of-state tuition and fees
$3,584 for books and supplies
$24,984 for off-campus room and board

Visit website for more program cost information
*The amounts shown above include costs for the entire program, assuming normal time to completion.
Note that this information is subject to change.

Students Borrowing Money
0% of students who attend this program borrow money to pay for it

The typical graduate leaves with
N/A* in debt
*Fewer than 10 students completed this program within normal time. This number has been withheld to preserve the confidentiality of the students.

The typical monthly loan payment
N/A* per month in student loans with N/A* interest rate.
*Fewer than 10 students completed this program within normal time. This number has been withheld to preserve the confidentiality of the students.

The typical graduate earns
not provided per year after leaving this program

Graduates who got jobs
N/A* of program graduates got jobs
*We are not currently required to calculate a job placement rate for program completers.

Program graduates are employed in the following fields:
- Computer and Information Systems Managers
- Information Security Analysts
- Database Administrators
- Network and Computer Systems Administrators
- Computer Network Architects
- Telecommunications Engineering Specialists
- Computer Network Support Specialists

Licensure Requirements
Program has no licensure requirements in any state.

Additional Information
Date Created 3/20/2017
These disclosures are required by the U.S. Department of Education

Note: Every effort has been made to keep program information current.
Please use this information as a guide and consult with the chair of the department/program or an MSJC counselor.
Instructional Programs

Mt. San Jacinto College
Undergraduate certificate in Computer Information Systems - Programming
Program Length: 72 weeks

Students graduating on time
12% of Title IV students complete the program within 72 weeks

Program Costs*
$828 for in-state tuition and fees
$4,950 for out-of-state tuition and fees
$3,584 for books and supplies
$24,984 for off-campus room and board
Visit website for more program cost information

Students Borrowing Money
0% of students who attend this program borrow money to pay for it

The typical graduate leaves with
N/A* in debt

The typical monthly loan payment
N/A* per month in student loans with N/A* interest rate

The typical graduate earns
not provided per year after leaving this program

Graduates who got jobs
N/A* of program graduates got jobs

Program graduates are employed in the following fields:
Computer Programmers
Software Developers, Applications
Software Developers, Systems Software
Web Developers
Computer Network Support Specialists
Computer Science Teachers, Postsecondary

Licensure Requirements

*Program has no licensure requirements in any state.

Additional Information
Date Created 3/20/2017
These disclosures are required by the U.S. Department of Education

Note: Every effort has been made to keep program information current.
Please use this information as a guide and consult with the chair of the department/program or an MSJC counselor.