Computer/Information Systems

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Degree(s)

Transfer:
A.S.-T in Computer Science for Transfer [32492 AS.CIS.CS.OPTCAST]
(using General Education Requirements Option C)

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

Non-Transfer:
A.S. in Computer Information Systems [4395 AS.CIS.GENERAL, AS.CIS.NETWORK, AS. CIS.INTERNET, AS.CIS.PROGRAM]

(with General Education Requirements Option A)

Certificate(s)
Certificate in Internet Authoring [11474 CT.CIS.1A.98]
Certificate in Networking [11475 CT.CIS.NET.98]
Certificate in Programming [11476 CT.CIS.PROG.98]

Employment Concentration Certificate(s)
Computer Forensics [99999 ECC.AJ.CF]
Computer Hardware Specialist [99999 ECC.CIS.A+]
Cybersecurity [99999 ECC.CIS.CYB]
Internet Authoring Apprentice [99999 ECC.CIS.IAA]

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 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 Networking Technologies Apprentice or Service Desk Hardware Support

Computer Forensic Investigators - Emphasis in 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 Computer Hardware Specialist, Networking Technologies Apprentice or Service Desk Hardware Support

Certificates

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.

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.

Mt. San Jacinto College 2019-2020 Catalog

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

Computer Maintenance Technician, Help-Desk Technician, Computer Service Technician, Computer Repairer, Technical Support Specialist, Computer Support Specialist, Computer Support Technician

Cybersecurity

Security Analyst, Security Engineer, Security Architect, Security Administrator

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 (28 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	4 units
MATH-212	Analytic Geometry and Calculus II	4 units
or		
MATH-212H	Honors Analytic Geometry and Calculus II	4 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
or		
BIOL-150	General Biology I	4 units
or		
BIOL-150H	Honors General Biology I	4 units
Units for Major		**28**
CSU General Education Pattern or IGETC Pattern		**37 -39**
Possible double counting (CSU)		**9**
Possible double counting (IGETC)		**6-9**
Transferable Electives (as needed to reach 60 CSU transferable units)		
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 Internet Authoring, Programming, or Networking (18 units) as well as all MSJC General Education Option A requirements (a total of 60 units).

CERTIFICATES

Internet Authoring (18 units)

Required Courses (15 units)

CSIS-086	Developing ASP.NET Web Applications	3 units
CSIS-103	Introduction to the Internet	3 units
CSIS-114A	SQL Programming - Level 1	3 units
CSIS-115A	Web Development - Level 1	3 units

or

CSIS-116D	PHP Web Development	3 units
CSIS-125A	Web Development - Level 2	3 units

Elective Courses (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)

Networking is one of the fasted growing fields in the state. The AS degree in networking will prepare a student to become a Cisco Certified Network Associate and for a career in computer networking.

Required Courses (18 units)

CSIS-091	CCNA 2 Routing and Switching Essentials	3 units
CSIS-092	CCNA 3 Scaling Networks	3 units
CSIS-093	CCNA 4 Connecting Networks	3 units
CSIS-101	Introduction to Computers and Data Processing	3 units
CSIS-201	System Analysis and Design	3 units
CSIS-202	CCNA 1 Computer Networks	3 units

Programming (18 units)

Required Courses (6 units)

CSIS-118B	Computer Organization & Assembly Language	3 units
CSIS-201	System Analysis and Design	3 units

Programming Elective Courses (6 units)

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

CSIS-113A	C++ Programming - Level 1	3 units
and		
CSIS-123A	C++ Programming - Level 2	3 units
or		
CSIS-113B	Java Programming - Level 1	3 units
and		
CSIS-123B	Java Programming - Level 2	3 units
or		
CSIS-113C	C# Programming - Level 1	3 units
and		
CSIS-123C	C# Programming - Level 2	3 units
or		
CSIS-116E	Python Programming - Level 1	3 units
and		
CSIS-126E	Python Programming - Level 2	3 units

Additional Elective Courses (6 units)

CSIS-086	Developing ASP.NET Web Applications	3 units
CSIS-111B	Fundamentals of Computer Programming	3 units
CSIS-114A	SQL Programming - Level 1	3 units
CSIS-115A	Web Development - Level 1	3 units
CSIS-116D	PHP Web Development	3 units
CSIS-124A	SQL Programming - Level 2	3 units
CSIS-125A	Web Development - Level 2	3 units

| CSIS-211 | Introduction to Data Structures and Algorithms | 3 units |

EMPLOYMENT CONCENTRATIONS

Computer Forensics (13 units)

AJ-103	Criminal Evidence	3 units
AJ-105	Tactical Communication and Report Writing for Law Enforcement	3 units
CSIS-080	Computer Hardware – Level 1	4 units
CSIS-182	Computer Forensics	3 units

Computer Hardware Specialist Certification (7 units)

This program of study qualifies students to pass the A+ (A plus) certification given by the Computing Technology IndustryAssociation (CompTIA). The A+ certification is an entry-level computer certification for students who desire to become PC computer service technicians. The exam is designed to certify the competency of entry-level PC computer service professionals in installing, maintaining, customizing, and operating personal computers

| CSIS-080 | Computer Hardware - Level 1 | 4 units |
| CSIS-081 | OS Installation and Configuration | 3 units |

Cybersecurity (15 units)

The employment concentration in Cybersecurity is designed to provide students with the knowledge and skill to gain employment in such Cybersecurity fields such as Security Analyst, Security Specialist and Security Administrator. In addition, the course work prepares students to pass the Cisco Cybersecurity exams to become a certified associate in Security and Cyber Operation.

CSIS-091	CCNA 2 Routing and Switching Essentials	3 units
CSIS-094	Cyber Operations	3 units
CSIS-160	Information Security Systems	3 units
CSIS-164	Cybersecurity: Ethical Hacking	3 units
CSIS-202	CCNA 1 Computer Networks	3 units

Internet Authoring Apprentice (9 units)
Foundation Layer (3 units)

| CSIS-103 | Introduction to the Internet | 3 units |

or

| CSIS-111B Fundamentals of Computer Programming | 3 units |

Presentation Layer (3 units)
| CSIS-115A | Web Development - Level 1 | 3 units |

Interactive Layer (3 units)
| CSIS-125A | Web Development - Level 2 | 3 units |

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.

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[1]
*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
$6,138 for out-of-state tuition and fees
$3,942 for books and supplies
Other Costs:
Parking Permits cost $68 a year or $34 a semester
RTA Go Pass cost $12 a year or $6 a semester
SGA discount sticker (optional) - $14 a year or $7 a semester
Student representation fee (optional) - $2 a year or $1 a semester
Help a Student Fund (optional) - $4 a year or $2 a semester
Student Health Center Fee - $40 a year or $20 a semester
*For summer session fees, please see: https://www.msjc.edu/StudentServices/EnrollmentServices/Pages/What-Fees-do-I-have-to-pay.aspx
Visit website for more program cost information: /www.msjc.edu/StudentServices/EnrollmentServices/Pages/What-Fees-do-I-have-to-pay.aspx
*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
The typical graduate leaves with
N/A* in debt[3]
*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 an interest rate of **N/A***[4].
*Fewer than 10 students completed this program within normal time. This number has been withheld to preserve the confidentiality of the students.

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: http://onetonline.org/link/summary/15-1134.00

Licensure Requirements[6]
The following do not have licensure requirements for this profession:
California

Additional Information:
No additional notes provided.

Date Created: 5/14/2019
These disclosures are required by the U.S. Department of Education

Footnotes:
1. The share of students who completed the program within 100% of normal time (72 weeks).

2. The share of students who borrowed Federal, private, and/or institutional loans to help pay for college.

3. The median debt of borrowers who completed this program. This debt includes federal, private, and institutional loans.

4. The median monthly loan payment for students who completed this program if it were repaid over ten years at a NA* interest rate.

5. The median earnings of program graduates who received Federal aid.

6. Some States require students to graduate from a state approved program in order to obtain a license to practice a profession in those States.

7. State Job Placement Rate:
Name of the state this placement rate is calculated for:
N/A

Follow the link below to find out who is included in the calculation of this rate:
N/A

What types of jobs were these students placed in?
N/A

When were the former students employed?
N/A

How were completers tracked?
N/A

8. Accreditor Job Placement Rate:
Name of the accrediting agency this placement rate is calculated for:
N/A

Follow the link below to find out who is included in the calculation of this rate:
N/A

What types of jobs were these students placed in?
N/A

When were the former students employed?
N/A

How were completers tracked?
N/A

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.

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

Students graduating on time
0% of Title IV students complete the program within 72 weeks[1]

Program Costs*
$828 for in-state tuition and fees
$6,138 for out-of-state tuition and fees
$3,942 for books and supplies
Other Costs:
Parking Permits cost $68 a year or $34 a semester
RTA Go Pass cost $12 a year or $6 a semester
SGA discount sticker (optional) - $14 a year or $7 a semester
Student representation fee (optional) - $2 a year or $1 a semester
Help a Student Fund (optional) - $4 a year or $2 a semester
Student Health Center Fee - $40 a year or $20 a semester
*For summer session fees, please see: https://www.msjc.edu/StudentServices/EnrollmentServices/Pages/What-Fees-do-I-have-to-pay.aspx
Visit website for more program cost information: /www.msjc.edu/StudentServices/EnrollmentServices/Pages/What-Fees-do-I-have-to-pay.aspx
*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
The typical graduate leaves with
N/A* in debt[3]
*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 an interest rate of **N/A***[4].
*Fewer than 10 students completed this program within normal time. This number has been withheld to preserve the confidentiality of the students.

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: http://onetonline.org/link/summary/11-3021.00

Information Security Analysts: http://onetonline.org/link/summary/15-1122.00

Database Administrators: http://onetonline.org/link/summary/15-1141.00

Network and Computer Systems Administrators: http://onetonline.org/link/summary/15-1142.00

Computer Network Architects: http://onetonline.org/link/summary/15-1143.00

Telecommunications Engineering Specialists: http://onetonline.org/link/summary/15-1143.01

Computer Network Support Specialists: http://onetonline.org/link/summary/15-1152.00

Licensure Requirements[6]
The following do not have licensure requirements for this profession:
California

Additional Information:
No additional notes provided.

Date Created: 5/15/2019
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3. The median debt of borrowers who completed this program. This debt includes federal, private, and institutional loans.

4. The median monthly loan payment for students who completed this program if it were repaid over ten years at a NA* interest rate.

5. The median earnings of program graduates who received Federal aid.

6. Some States require students to graduate from a state approved program in order to obtain a license to practice a profession in those States.

7. State Job Placement Rate:
Name of the state this placement rate is calculated for:
N/A

Follow the link below to find out who is included in the calculation of this rate:
N/A

What types of jobs were these students placed in?
N/A

When were the former students employed?
N/A

How were completers tracked?
N/A

8. Accreditor Job Placement Rate:
Name of the accrediting agency this placement rate is calculated for:
N/A

Follow the link below to find out who is included in the calculation of this rate:
N/A

What types of jobs were these students placed in?
N/A

When were the former students employed?
N/A

How were completers tracked?
N/A

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.

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

Students graduating on time
0% of Title IV students complete the program within 72 weeks[1]

Program Costs*
$828 for in-state tuition and fees
$6,138 for out-of-state tuition and fees
$3,942 for books and supplies
Other Costs:
Parking Permits cost $68 a year or $34 a semester
RTA Go Pass cost $12 a year or $6 a semester
SGA discount sticker (optional) - $14 a year or $7 a semester
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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 Programmers: http://onetonline.org/link/summary/15-1131.00
Software Developers, Applications: http://onetonline.org/link/summary/15-1132.00
Software Developers, Systems Software: http://onetonline.org/link/summary/15-1133.00
Web Developers: http://onetonline.org/link/summary/15-1134.00
Computer Network Support Specialists: http://onetonline.org/link/summary/15-1152.00

Licensure Requirements[6]
The following do not have licensure requirements for this profession:
California

Additional Information:
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Date Created: 5/15/2019
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5. The median earnings of program graduates who received Federal aid.

6. Some States require students to graduate from a state approved program in order to obtain a license to practice a profession in those States.

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Name of the state this placement rate is calculated for:
N/A

Follow the link below to find out who is included in the calculation of this rate:
N/A

What types of jobs were these students placed in?
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When were the former students employed?
N/A

How were completers tracked?
N/A

8. Accreditor Job Placement Rate:
Name of the accrediting agency this placement rate is calculated for:
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Follow the link below to find out who is included in the calculation of this rate:
N/A

What types of jobs were these students placed in?
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When were the former students employed?
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How were completers tracked?
N/A

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.