Computer Information Systems

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Degree(s)

Transfer:

A.S.-T in Computer Science for Transfer 32492 AS.CIS.CS.OPTBAST
or 32492 AS.CIS.CS.OPTCAST

(using General Education Requirements Option B or 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 General Track 22128CT.CIS.GEN.98
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+
Data Analysis and Modeling 99999 ECC.CIS.DAAM
Internet Authoring Apprentice 99999 ECC.CIS.IAA
Internet and Web Technologies 99999 ECC.CIS.I+

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(s)

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

General Track Certificate

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

Internet Authoring Certificate

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

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.

Networking Certificate

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 Certificate

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

General Track 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

Data Analysis and Modeling

Administrative Assistant, Computer Specialist, Computer Support Technician, Data Entry and Information Processing Worker, Help-Desk Technician, Statistical Assistant

Internet Authoring 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.

Internet Authoring Apprentice

Web Developer, Internet Developer, Web Designer, Web Developer, Web Publisher, Web Technologies

Internet and Web Technologies

Electronic Publishing, Web 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

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) or the California State University General Education-Breadth Requirements.
- 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.

A.S.-T in Computer Science for Transfer (28 units)

Required Core (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	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**
CSU General Education or IGETC Pattern		**37**
Possible double counting		**7**
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.

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.

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-135	Using Microsoft Project	3 units

Internet Authoring (18 units)

Required Courses (15 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
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-115B	XML Design - Level 1	3 units
CSIS-116E	Python Programming - Level 1	3 units
CSIS-117D	Using Microsoft Expression Web - 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-150	Using Microsoft Windows	3 units
CSIS-151	Using the OS Command Line Interface	3 units
CSIS-154	Using and Configuring Windows Operating Systems	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
CSIS-113B	Java Programming - Level 1	3 units
CSIS-116E	Python Programming - Level 1	3 units
CSIS-123A	C++ Programming - Level 2	3 units
CSIS-123B	Java Programming - Level 2	3 units
CSIS-126E	Python Programming - Level 2	3 units

Additional Elective Courses (6 units)

CSIS-111B	Fundamentals of Computer Programming	3 units
CSIS-113C	C# Programming - Level 1	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
CSIS-116D	PHP Web Development	3 units

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CSIS-118A	Embedded Systems Programming	3 units
CSIS-123C	C# Programming - Level 2	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
CSIS-214	Principles of Database Management Systems	3 units

EMPLOYMENT CONCENTRATIONS

Computer Forensics (16 units)

AJ-103	Criminal Evidence	3 units
AJ-105	Public Safety Report Writing	3 units
AJ-108	Criminal Investigation	3 units
CSIS-181	Computer Hardware – Level 1	4 units
CSIS-182	Computer Forensics	3 units

Computer Hardware Specialist Certification (12 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.

CSIS-151	Using the OS Command Line Interface	3 units
CSIS-154	Using and Configuring Windows Operating Systems	3 units
CSIS-181	Computer Hardware – Level 1	4 units
CSIS-183	Green Computing	2 units

Data Analysis and Modeling (9 units)

CAPP-122	Using Microsoft Excel	3 units
CAPP-123	Using Microsoft Access – Level 1	3 units
CAPP-143	Using Microsoft Access – Level 2	3 units

Internet Authoring Apprentice (9 units)

Note: A cumulative GPA of 2.0 or higher is required for these courses.

Foundation Layer (3 units)

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

Presentation Layer (3 units)

CSIS-115A	Web Development - Level 1	3 units
or		
CSIS-117D	Using Microsoft Expression Web - Level 1	3 units

Interactive Layer (3 units)

CSIS-119A	ActionScript Programming - Level 1	3 units
or		
CSIS-125A	Web Development - Level 2	3 units

Internet and Web Technologies (15 units)

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

CSIS-103	Introduction to the Internet	3 units
CSIS-104	Introduction to E-Commerce Infrastructure	3 units
CSIS-115A	Web Development – Level 1	3 units
CSIS-125A	Web Development - Level 2	3 units
CSIS-202	Networks and Data Communications	3 units

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