COMPUTER INFORMATION SYSTEMS (CIS)

Associate in Science in Computer Information Systems

The Associate in Science in Computer Information System is designed to provide students with knowledge and skills required for a variety of positions in the field of computer information technology. The program includes foundation courses in computer information systems and a wide range of skill-builder courses in current topics of technology.

Program Learning Outcomes

- Students will analyze a problem, and identify and define the computing requirements appropriate to its solution.
- Students will apply software development techniques that use the correct syntax and semantics of a programming language to write the source code to implement and test/debug a specified design.
- Students will use current techniques, skills, and tools necessary for computing practice.

Career/Transfer Opportunities

Career opportunities include the following: computer programmer, programmer analyst, system analyst, software quality assurance analyst, and software developer.

To earn this degree, students must meet the following requirements:

a. Completion of 60 degree applicable units with an overall GPA of 2.0.

b. Completion of a minimum of 18 semester units in the major with a grade of C (or P) or better.

c. Completion of the Associate in Science graduation requirements.

Core Curriculum Courses Required:		Units
CIS 037A	Introduction to C Programming	4.0
CIS 043	Software Development With Java	4.0
CIS 044	Introduction to Data Structures Using Java	4.0

Plus two or more additional courses from the following electives (at least 8 units):		Units
CIS 040	C++ Programming	4.0
CIS 065	C# .NET Programming	4.0
CIS 086	Web Development with PHP and MySQL	3.0
CIS 045	Linux Essentials I	3.0
CIS 046	Linux Essentials II (Shell Programming)	3.0

Units Required for the Major: 20.0-22.0

Completion of General Education Requirements and electives as needed to reach 60 units.

Total Required Units: 60.0

COMPUTER INFORMATION SYSTEMS (CIS)

Certificate of Achievement in Computer Information Systems

The Certificate of Achievement in Computer Information Systems is designed to provide students with knowledge and skills required for a variety of positions in the field of computer information technology. The program includes foundation courses in programming and several specialization tracks for mobile programming, web programming, and Linux systems.

Program Learning Outcomes

- Students will analyze a problem, identify and define the computing requirements appropriate to its solution.
- Students will apply software development techniques that use the correct syntax and semantics of a programming language to write the source code to implement and test/debug a specified design.
- Students will use current techniques, skills, and tools necessary for computing practice.

Career/Transfer Opportunities

Career opportunities include the following: computer programmer, programmer analyst, system analyst, software quality assurance analyst, and software developer.

To earn this certificate, students must complete the minimum required courses with a grade of C (or P) or better.

Core Course Requirements		Units
(Two courses):		Units
CIS 043	Software Development With Java	4.0
CIS 037A	Introduction to C Programming OR	4.0
CIS 007	Python Programming	4.0

A minimum of 6 units from one of the following four combinations (tracks):		Units
CIS 044	Introduction to Data Structures Using Java	4.0
CIS 039	Introduction to Computer Systems	3.0
CIS 060	Mobile Apps Programming - iPhone AND	4.0
CIS 063	Mobile Apps Programming - Android	4.0
CIS 086	Web Development with PHP and MySQL	3.0
CAP 088A	Introduction to Javascript for the Web AND	1.0
CAP 088B	Intermediate Javascript for the Web	2.0
CIS 045	Linux Essentials I AND	3.0
CIS 046	Linux Essentials II (Shell Programming)	3.0

Plus one additional course from the tracks listed above, or one of the following courses (minimum 3 units):		Units
CIS 040	C++ Programming	4.0
CIS 044	Introduction to Data Structures Using Java	4.0
CIS 047	Linux System Administration I	4.0
CIS 048	Advanced Linux System Administration	3.0
CIS 065	C# .NET Programming	4.0

Total Required Units: 17.0-20.0

Gainful Employment Disclosure Information

In compliance with the Gainful Employment Act, Mission College provides information on costs, normal time for completion, and average debt load incurred by students for all Career Technical Education programs that offer Certificates of Achievement. The link for this information is: gainfulemployment.missioncollege.edu.

COMPUTER INFORMATION SYSTEMS (CIS)

Certificate of Proficiency in Computer Programming

The Certificate of Proficiency in Computer Programming is designed to provide students with programming knowledge and skills required for positions in the field of computer information systems. The program consists of programming courses in various languages and platforms.

Program Learning Outcomes

- Students will analyze a problem, identify, and define the computing requirements appropriate to its solution.
- Students will apply software development techniques that use the correct syntax and semantics of a programming language to write the source code to implement and test/debug a specified design.
- Students will use current techniques, skills, and tools necessary for computing practice.

Career/Transfer Opportunities

Career opportunities include the following: computer programmer, programmer analyst, system analyst, software quality assurance analyst, and software developer.

Choose a minimum of 12 units from the following:		Units
CIS 007	Python Programming	4.0
CIS 037A	Introduction to C Programming	4.0
CIS 039	Introduction to Computer Systems	3.0
CIS 040	C++ Programming	4.0
CIS 041	Advanced C++ Programming	3.0
CIS 043	Software Development With Java	4.0
CIS 044	Introduction to Data Structures Using Java	4.0
CIS 045	Linux Essentials I	3.0
CIS 046	Linux Essentials II (Shell Programming)	3.0
CIS 060	Mobile Apps Programming - IPhone	4.0
CIS 063	Mobile Apps Programming - Android	4.0
CIS 065	C# .NET Programming	4.0
CIS 086	Web Development with PHP and MySQL	3.0
Total Required Units:		12.0

COMPUTER INFORMATION SYSTEMS (CIS)

Certificate of Proficiency in Linux System Administration

The Certificate of Proficiency in Linux System Administration is designed to provide students with knowledge and skills in Linux programming and Linux Systems administration. The program consists of courses in Linux operating systems, system scripting, and system administration.

Program Learning Outcomes

- Students will demonstrate the ability to install, configure, and maintain Linux systems.
- Students will demonstrate the ability to anticipate, troubleshoot, and resolve issues that might impact the operation of a Linux based computer system.

Career/Transfer Opportunities

Career opportunities include the following: systems analyst, Linux system administrator, and information technology systems specialist.

Core Curriculum Courses Required:		Units
CIS 045	Linux Essentials I	3.0
CIS 046	Linux Essentials II (Shell Programming)	3.0
CIS 047	Linux System Administration I	4.0
CIS 048	Advanced Linux System Administration	3.0
Total Required Units:		13.0

COMPUTER INFORMATION TECHNOLOGY (CIT)

Associate in Science in Computer Networking Technology

The Associate in Science in Computer Networking Technology prepares students to design, administer, maintain, and troubleshoot networks of different sizes. Students learn a diverse array of skills, including specification preparation, network management, network design, equipment and system sales, and software development. Laboratory courses provide students with hands-on experience to demonstrate the principles of enterprise networking. Courses provide learning opportunities for students new to the field, as well as for those who are experienced professionals. Specialized courses are also among the optional electives in this program, available to help students prepare for Cisco Certified Network Associate (CCNA), Cisco Certified Network Professional (CCNP), Microsoft Certified Information Technology Professional (MCITP), Server Administrator and Enterprise Administrator certification exams.

Program Learning Outcomes

- Students will design and plan a network infrastructure to support specific user and business requirements.
- Students will implement enterprise networks with advanced routing and switching strategies.
- Students will manage and troubleshoot enterprise networks.

Career/Transfer Opportunities

Career opportunities include the following: computer technician, system administrator, network technician, and network engineer.

To earn this degree, students must meet the following requirements:

a. Completion of 60 degree applicable units with an overall GPA of 2.0.

b. Completion of a minimum of 18 semester units in the major with a grade of C (or P) or better.

c. Completion of the Associate in Science graduation requirements.

Core Curriculum Courses Required:		Units
CIT 012	Introduction to Networking	4.0
CIT 021	Cisco Network Fundamentals (Cisco-1)	4.0
CIT 022	Routing Protocols and Concepts (Cisco-2)	4.0
CIT 078	Microsoft Server Essentials 1	4.0

Plus two or more additional courses from the following electives (at least 8 units):

		Units
CIT 011	Desktop Operating Systems (A+, Part 1)	4.0
CIT 016	IT Security & Ethical Hacking	4.0
CIT 023	LAN Switching and Wireless (Cisco-3)	4.0
CIT 024	Accessing the WAN (Cisco-4)	4.0

Required Units for the Major: 24.0

Completion of General Education Requirements and electives as needed to reach 60 units.

Total Required Units: 60.0

COMPUTER INFORMATION TECHNOLOGY (CIT)

Certificate of Achievement in Cisco Certified Network Administration (CCNA)

The Certificate of Achievement in Cisco Certified Network Administration (CCNA) is designed to provide the knowledge and skills needed to install, operate, and troubleshoot a small-to-medium size enterprise branch network, which includes connecting to multiple WANs, basic security measures, and wireless extension of the network. This program prepares students for the globally-recognized Cisco CCNA certification.

Program Learning Outcomes

- Students will install, operate, and troubleshoot medium-sized routed and switched networks.
- Students will implement and troubleshoot various protocols to manage addressing, perform load balancing and authentication.
- Students will establish and troubleshoot connection to service provider over WAN.

Career/Transfer Opportunities

Career opportunities include the following: computer technician, system administrator, network technician, network engineer.

To earn this certificate, students must complete the minimum required courses with a grade of C (or P) or better.

Core Curriculum Courses Required:		Units
CIT 021	Cisco Network Fundamentals (Cisco-1)	4.0
CIT 022	Routing Protocols and Concepts (Cisco-2)	4.0
CIT 023	LAN Switching and Wireless (Cisco-3)	4.0
CIT 024	Accessing the WAN (Cisco-4)	4.0

Total Required Units: 16.0

Gainful Employment Disclosure Information

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COUNSELING (COU)

Associate in Arts in Liberal Arts

To earn this degree, students must meet the following requirements:

1. Choose option A or B or C for the General Education pattern related to your educational goal:
   a. Associate of Arts/Associate of Science General Education;
   b. California State University General Education Breadth (CSU GE-B); or
   c. Intersegmental General Education Transfer Curriculum (IGETC)
2. Complete a minimum of 18 units in one of the five Areas of Emphasis:
   a. Communication in the English Language and Critical Thinking
   b. Natural Science and Mathematics
   c. Arts and Humanities
   d. Social and Behavioral Sciences
3. For all options, complete necessary Mission College Graduation and Proficiency requirements (COM, LIB, REA).

COUNSELING (COU)

Associate in Arts in Liberal Arts: Arts and Humanities

The Associate in Arts in Liberal Arts with an emphasis in Arts and Humanities provides students the opportunity to cultivate intellect, imagination, sensibility and sensitivity. Students will respond subjectively as well as objectively to aesthetic experiences and will develop an understanding of the integrity of both emotional and intellectual responses. Students will also refine their affective, cognitive, and physical faculties through studying great works of the human imagination. Critical thinking skills and self-understanding through these courses provide a framework for lifelong study in the arts and humanities areas and offers students a breadth of knowledge that could be focused into single discipline degrees as well as applied to an interdisciplinary degree.

Program Learning Outcomes

- Students will explain or demonstrate the connections between language, communication, and culture.
- Students will create, critique or analyze key elements of artistic expression by individuals or cultures.
- Students will interpret art forms and analyze humanistic texts in their historical and social contexts.

Career/Transfer Opportunities

The program is intended for students who are considering transfer, but have not decided on a major; students who are required to complete a degree for job promotion; or students who may wish to further their education and are considering a major that is interdisciplinary in focus.

To earn this degree, students must meet the following requirements:

a. Completion of 60 degree applicable units with an overall GPA of 2.0.

b. Completion of a minimum of 18 semester units in the major with a grade of C (or P) or better.

c. Completion of the Associate in Arts graduation requirements.

Select a minimum of 18 units from the approved CSU GE-B Area C. Include courses from at least two different disciplines. These courses emphasize the study of cultural, literary, and humanistic activities as well as artistic expression of human beings.