

Computer Information Systems (CIS)

Program Description

Computer Information Systems (CIS) is a two-year program that leads to an Associate in Technical Arts (ATA) degree. The program offers a degree in Computer Information Systems (CIS) and four certificates: Computer Information Systems, Computer Applications Support Technician, Network Technician, and Database/Programming. The program is offered in an eLearning (online) format which is recommended for self-motivated students with strong computer skills.

The Computer Information Systems program is designed to expose students to a broad spectrum of disciplines within the field of information technology: operating systems, hardware support, network administration, application software, database design and programming. With successful completion of the program, students will have discovered the area which best fits their interest and aptitude, and be prepared to pursue entry-level positions or further education.

The opportunity to transfer this technical degree to a four-year university to complete a Bachelor's degree is currently available. Contact the CIS Department Chair for more information and alternative suggested schedules.

Career Opportunities

Business and industry require skilled workers to design, operate, manage and support their computer systems. This program is designed to prepare students for entry-level positions supporting application software, hardware, networks, installation, security, administration, programming and database design.

Work Experience in the Field

Students will participate in Cooperative Education (CIS 199), which is supervised work experience in an approved work environment. Credits and grades are based on hours worked, work performance, and completion of the learning objectives specified in the learning contract. A special project may be substituted for Cooperative Education with the approval of the Department Chair.

Entry into the Program

Please apply to the Admissions Office. Advanced standing for prior education or experience may be requested. Be advised that some courses/sequences are not offered every quarter.

It is strongly recommended that students entering the CIS program be able to read and write at college level. They should also have basic keyboarding skills, such as those included in Office

Administration and Accounting Technologies (OFTEC) 99 and basic computer literacy included in Computer Science (CS) 101. ENGL 99 and MATH 97 are prerequisites for some required courses for the degree; students should consider taking these courses before entering the degree program.

Associate in Technical Arts Degree

An Associate in Technical Arts degree (ATA) is awarded upon completion of a minimum of 90 credits in courses numbered 100 or above with an accumulated grade point average of 2.0. Courses must include completion of the technical major and related education requirements.

SUGGESTED SCHEDULE

COMPUTER INFORMATION SYSTEMS

Includes required ATA courses. Student schedule may vary based on entry point, credit load, and prerequisites. Consult with department chair or SVC counselor for scheduling options. For transfer degree options, meet with the CIS Dept. Chair for an alternate schedule. The two-year suggested schedule below is provided as only a guide for a traditional full-time student whose goal is the ATA degree. Frequent course offerings allow for individualized schedules that will ensure all student certificate and degree objectives can be met.

First Year		
1st quarter Cr	2nd quarter Cr	3rd quarter Cr
CIS 103.....5	CIS 104.....5	CIS 105.....5
CIS 146.....3	†CIS 114.....5	CIS 241.....5
*BUS& 101.....5	CIS 118.....5	CMST 125.....3
†ENGL 170.....3	CIS 147.....3	or CMST& 210.....5
		SOSC 113.....1
Total.....16	Total.....18	Total.....14+
Second Year		
4th quarter Cr	5th quarter Cr	6th quarter Cr
CIS 221.....5	CIS 222.....5	CIS 223.....5
CIS 240.....5	CIS 242.....5	CIS 243.....5
‡CIS 199.....1	‡CIS 199.....2	‡CIS 199.....2
MIT 149.....5	^PE 200.....2	CIS 233.....5
	SOSC 125.....2	
Total.....16	Total.....16	Total.....17

* BUS& 101 or BUS 241 or 5 credits of General Education (social sciences, natural sciences or humanities).

† Students who do not receive an appropriate test score will require additional coursework to develop necessary skills for entry into class. (ENGL& 101 may be substituted for ENGL 170; MATH 107 or higher may be substituted for CIS 114)

‡ CIS 199 may be taken at any time after the second quarter with Department Chair approval.

^ A valid current CPR and First aid card may be submitted in lieu of PE 200. Student must provide copies of current documents with a waiver request.

Program Certificates

COMPUTER APPLICATIONS SUPPORT TECHNICIAN CERTIFICATE (33 CREDITS)

The student must maintain a 2.0 grade point average and complete the following: Either CIS 103 or 145 and 148, along with CIS 146, 147, 199 (4 credits), CS 101, OFTEC 122, 132, 204, 210, and SOSC 113.

COMPUTER INFORMATION SYSTEMS CERTIFICATE (60 CREDITS)

The student must maintain a 2.0 grade point average and complete 60 credits of the CIS program (including 5 credits of CIS 199) and SOSC 113.

DATABASE/PROGRAMMING CERTIFICATE (20 CREDITS)

The student must maintain a 2.0 grade point average and complete the following: CIS 240, 241, 242, and 243.

NETWORK TECHNICIAN CERTIFICATE (54 CREDITS)

The student must maintain a 2.0 grade point average and complete the following: CIS 103, 104, 105, 114, 118, 146, 199 (5 credits), 221, 222, 223, 233, and SOSC 113.

Individual Technical Certificate

An Individual Technical Certificate may be developed in conjunction with other programs to meet marketable objectives and goals with Department Chair approval.

Course Descriptions

CIS 103 Introduction to Operating Systems (5)

Introduction to desktop operating systems primarily focused on command line operations. Include file, directory, and disk management. Simple customization, configuration, and network connectivity techniques explored. Prerequisite: computer literacy, familiarity with Microsoft Windows and keyboarding skills, are strongly recommended.

CIS 104 Windows Operating System In Depth (5)

Advanced desktop operating system concepts including installation, customization, configuration, device drivers, trouble-shooting, memory management, and network client configuration. Follows content from Microsoft Certification current operating system exam. Prerequisite: solid understanding of the basic concepts of file, directory and disk management, as well as proficiency in command line operation, as presented in CIS 103, are strongly recommended.

CIS 105 Introduction to Linux (5)

Introduction to the Linux operating system. Focuses on the command line interface, file and directory management, Linux tools, shell scripts and security. Prerequisite: computer literacy, file management and keyboarding skills, are strongly recommended.

CIS 114 Mathematics for Computer Specialists (5)

Includes areas of mathematics related to computer technology which may include Boolean algebra,

functions, non-decimal number systems, binary arithmetic, exponents, graphing, and algebra. Prerequisite: MATH 97

CIS 118 Computer Hardware: Troubleshooting & Repair(5)

Introduction to personal computer systems hardware and architectures which follow CompTIA's A+ certification track. This is an industry recognized certification series covering basic computer troubleshooting techniques, repair, upgrading, and terminology. Includes safety, PC architecture, memory, peripherals, upgrade and installation of operating systems, upgrade and installation of hardware components, configuration, and troubleshooting techniques. Prerequisite: solid understanding of the basic concepts of file, directory and disk management, as well as proficiency in command line operation, as presented in CIS 103, are strongly recommended.

CIS 145 Using Microsoft Windows(2)

Introduction to the use of Microsoft Windows operating system for home and office. Designed for those with very limited computer experience.

CIS 146 Introduction to Microsoft Excel (3)

Introduction to the use of Microsoft Excel spreadsheet software for home and office. Provides an understanding of spreadsheet software and a spreadsheet as a productive and useful tool. Prerequisite: computer literacy and file management skills are strongly recommended.

CIS 147 Introduction to Microsoft Access (3)

Introduction to the use of microcomputer database software for home and office. Provides an understanding of database software in general and Microsoft Access in particular, as a productive and useful tool. Prerequisite: computer literacy and file management skills are strongly recommended.

CIS 148 The Internet (2)

Overview of the Internet with hands-on instruction of electronic mail, World Wide Web, Internet browsers, basic and advanced searches, FTP and downloading, Internet communities and communication, Internet security and E-commerce. Learn about netiquette, safe surfing, and other cyberspace issues. Designed for students with basic computer skills but limited Internet experience.

CIS 199 Cooperative Education (1-15)

Supervised work experience in the field. Prerequisite: Instructor permission required.

CIS 221 Computer Networking I(5)

Introduction to computer networks. Includes study of LAN and WAN connectivity methods, physical and logical network models, network operating systems, methods for transmitting information, networking standards and standards organizations, and network client configuration. Prerequisite: proficiency in command line operation in both the Windows & Linux environments, as well as a solid understand-

ing of customization and configuration of a Windows and Linux operating system, as presented in CIS 104 & CIS 105, is essential.

CIS 222 Computer Networking II(5)

Continuation of CIS 221. Focuses on network directory services, the server software, deployment and maintenance of computer networks, router configuration, security, access control, and resource management. Includes continued study of current and emerging networking standards with emphasis on network operating system configuration. Prerequisite: solid understanding of navigating the Windows Server operating system and of basic web page design, as presented in CIS 221 and MIT 149, is essential.

CIS 223 Computer Networking III(5)

Continuation of CIS 222 and the capstone networking course. This course provides the student with the opportunity to integrate the broad spectrum of what has been learned in previous networking courses into a final project. The capstone will include discussion about professional and ethical issues related to Information Technology. New and emerging network technologies will also be explored. Prerequisite: solid understanding of the Windows Server and Linux operating systems, active directory, routing and configuration, as presented in CIS 221 and CIS 222, is essential.

CIS 233 Network Security (5)

Focuses on current topics in networking including network security, disaster recovery issues such as identifying, quantifying, planning for and managing risks, fault tolerance, disaster planning, system backups, and hands-on system recovery. Current events in networking are explored. Prerequisite: solid understanding of the Windows Server and Linux operating systems, active directory, routing and configuration, as presented in CIS 221 and CIS 222, is essential.

CIS 240 Introduction to Programming (5)

Elementary programming concepts are introduced using Visual Basic for Applications. Topics include form objects, variables, sequence, decision and iteration control structures, intrinsic functions, data structures, testing and debugging, event, sub and function procedures. Prerequisite: solid understanding of the basic concepts of database design and exposure to SQL, as presented in CIS 241, are strongly recommended.

CIS 241 Database Design and SQL(5)

Introduction to database management systems. Topics include database terminology, design objectives and procedures, normalization and relationships, and Structured Query Language. Prerequisite: working knowledge of, and experience with, Microsoft Access as presented in CIS 147 are strongly recommended.

CIS 242 Database Programming-VBA (5)

Given project specifications, use Visual Basic for applications to create custom interfaces that allow

users to view, edit, insert, update and delete data. Prerequisite: introductory programming experience in VBA as presented in CIS 240 is essential. Students should be well versed in conditionals, loops, functions, procedures and arrays.

CIS 243 Office Programming-VBA(5)

Office Programming-VBA is a capstone course that explores ways to customize and improve procedures across the office suite using various tools. Topics include macros, application customization and development, object linking and embedding and cross-application development. Prerequisite: introductory database programming experience using VBA as presented in CIS 242 is essential. Students should be comfortable with customizing Microsoft Access queries, forms and reports to respond to runtime events.