

PROGRAMS OF STUDY

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Information Technology



PROGRAMS OF STUDY

INFORMATION TECHNOLOGY

COMPUTER INFORMATION SYSTEMS 011

Associate in Applied Science degree (A.A.S.)

60 Credit Hours (CH)

The study of basic business and technical principles used in programming and operating personal computers. The A.A.S. can lead to entry-level jobs as computer programmer, programmer analyst, systems analyst, operations manager, network administrator, or unit supervisor in private and public firms or organizations. Advances in technology have increased the computer's application in the factory, the office and the telecommunications industry. As computer use grows, so will the need for workers who are able to cope with change and adapt to new technologies.

General Education

15 CH

Students should meet with a college Academic Advisor for selection of specific course requirements for the 15.0 credit hour minimum general education portion of the A.A.S. degree.

See page 51 for A.A.S. general education degree requirements.

Required Program Core

24 CH

CIS (032)

101 Introduction to Computer Information Systems	3
120 Introduction to Microcomputers	3
250 Introduction to Systems	3

Business (030)

111 Introduction to Business	3
181 Financial Accounting	4
182 Managerial Accounting	4

Math (045)

118 General Education Math <u>OR</u> any Math course 118 or above	4
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Additional CIS Required Courses

12 CH

Select four courses from the following:

CIS (032)

103 Introduction to Basic Language (3)	
122 Introduction to Word Processing on Microcomputers (3)	
142 Introduction to C or C++ Language (3)	
144 Introduction to JAVA Programming Language (3)	
145 Introduction to Database on Microcomputers (3)	
158 Beginning Internet (3)	
181 Web Development I/Basic Web Technology (3)	
182 Web Development II/Client Side Script (3)	
244 Advanced JAVA Programming Language (3)	
258 Advanced Internet (3)	

Electives

9 CH

Students should meet with a college Academic Advisor for selection of elective courses.

TOTAL PROGRAM MINIMUM CREDIT HOURS 60 CH

COMPUTER INFORMATION SYSTEMS 013

(Advanced Certificate (A.C.) 30 Credit Hours)

Required Program Core

14 CH

CIS (032)

101 Introduction to Computer Information Systems	3
250 Introduction to Systems	3

Business (030)

181 Financial Accounting	4
182 Managerial Accounting	4

Additional CIS Required Courses

9 CH

Select three courses from the following CIS discipline or other recommended courses by a college Academic Advisor:

CIS (032)

103 Introduction to Basic Language (3)	
120 Introduction to Microcomputers (3)	
122 Introduction to Word Processing on Microcomputers (3)	
142 Introduction to C or C++ Language (3)	
144 JAVA I (3)	
145 Introduction to Database on Microcomputers (3)	
158 Beginning Internet (3)	
181 Web Development I (3)	
182 Web Development II (3)	
235 Advanced COBOL Programming (3)	
244 JAVA II (3)	
258 Advanced Internet (3)	

Electives

7 CH

Students should meet with a college Academic Advisor for selection of elective courses.

TOTAL PROGRAM MINIMUM CREDIT HOURS 30 CH

COMPUTER INFORMATION SYSTEMS 012

Basic Certificate (B.C.) 12 Credit Hours (CH)

Required Program Core

6 CH

CIS (032)

101 Introduction to Computer Information Systems	3
120 Introduction to Microcomputers	3

CIS Electives

6 CH

Select two courses from the following or other recommended courses by a college Academic Advisor:

CIS (032)

103 Introduction to Basic Language (3)	
122 Introduction to Word Processing on Microcomputers (3)	
142 Introduction to C or C++ Language (3)	
144 JAVA I (3)	
145 Introduction to Database on Microcomputers (3)	
158 Beginning Internet (3)	
181 Web Development I/Basic Web Technology (3)	
182 Web Development II/Client Side Script (3)	
244 Advanced JAVA Programming Language (3)	
258 Advanced Internet (3)	

TOTAL PROGRAM MINIMUM CREDIT HOURS 12 CH

PROGRAMS OF STUDY

INFORMATION TECHNOLOGY

COMPUTER SECURITY AND FORENSIC INVESTIGATION 297

Basic Certificate (B.C.) 20 Credit Hours (CH)

The Computer Security and Forensic Investigation (CSFI) program comprises two tracks: (1) Information Security and (2) Computer Forensic Law Enforcement. CSFI includes a required program core group of courses, expands on the forensic concentration of the FCI program, and adds an Information Security component. All students are required to complete the core course group prior to selecting the one track that fits their objective.

1) The Information Security track focuses on design, implementation and management of information security in the corporate environment. Students will be prepared for the nationally recognized Certified Information Systems Security Professional (CISSP) Exam. CISSP designation can provide career enhancement, increase marketability, and ensure prospective employers of a certain level of information security knowledge.

2) The Computer Forensic/Law Enforcement track focuses on computer forensic investigation and provides law enforcement personnel, criminal justice majors, and other interested parties with the procedures and methodology for investigation of computer crimes, and handling electronic evidence as it relates to criminal procedures.

Required Program Core (minimum) **20 CH**
Computer Security & Forensic Investigation (162)

101 General Technology Essentials*	4
102 Introduction to Information Security	4
202 Introduction to Cybercrime	3

Information Security Track (1)**

213 Information Security Technology	3
214 Information Security Systems Analysis	4
215 Information Security Domains	3
216 Information Security Program Management	3

OR

Computer Forensic/Law Enforcement Track (2)**

203 Financial Cybercrime	3
204 Introduction to Computer Forensics & Law	3
205 Computer Forensic Technology	3
206 Internet Vulnerabilities, Criminal Activities & Investigative Procedures	4

TOTAL PROGRAM MINIMUM CREDIT HOURS 20 CH

*Students may opt to test out of CSFI 101-General Technology Essentials if they have extensive computer and networking education/experience.

**Upon completion of the core courses, students may pursue either or both tracks.

ENVIRONMENTAL GIS 264

Basic Certificate (B.C.) 21 credit hours (CH)

The Environmental GIS (Geographic Information Systems) program introduces the fundamental concepts of GIS and real world representation, using GIS vector and raster technology via spatial data input, topology, cartographic projections, and coordinate systems. The program prepares students with background information and technological skills to explore, capture, manage, analyze, model, perform spatial operations, and to find trends and patterns on landscape.

General Education 13 CH

English (035)	
101 Composition	3
CIS (032)	
120 Introduction to Microcomputers	3
Geography (084)	
201 Physical Geography <u>OR</u>	3
Geology (075)	
201 Physical Geology	
Mathematics (045)	
125 Intro to Statistics	4

Required Program Core 8 CH

Physical Science (076)	
201 Fundamental Vector GIS	4
202 Raster GIS & Remote Sensing	4

TOTAL PROGRAM MINIMUM CREDIT HOURS 21 CH

INFORMATION PROCESSING 719

Basic Certificate (B.C.) 26 Credit Hours (CH)

The program develops skills in information technology, emphasizing software applications and modern office procedures. Courses are designed to provide instruction in computer keyboarding, computer literacy, word processing, spreadsheets, databases, business writing, and use of the Internet and electronic mail. Students also receive training in desktop publishing and apply their skills to office settings through their practicum experience.

Required Program Core 26 CH

330BSCM	
503 Business Writing	3
508 Practicum	1
525 Introduction to Office Systems	2
526 Introduction to Personal Computers	2
540 Business Math	3
543 Keyboarding for Microcomputers I	2
544 Keyboarding for Microcomputers II	2
550 Word Processing Applications	2
551 Spreadsheet Applications	2
552 Database Applications	2
553 Desktop Publishing Applications	2
568 Language Skills I	3

TOTAL PROGRAM MINIMUM CREDIT HOURS 26 CH

PROGRAMS OF STUDY

INFORMATION TECHNOLOGY

NETWORK SECURITY AND FORENSICS (ADVANCED) 384

Advanced Certificate (A.C) 31 Credit Hours (CH)

This comprehensive certificate program provides extensive study to combine computer programming, emergency management and network security into one entire entity. It furthers the study in the Homeland Security industry to develop the emergency recovery plan in computer information systems from natural disaster and terrorist attack.

Required Program Core 19 CH

Computer Security & Forensic Investigation (162)

103 Intro to Network Security	4
109 Network Systems Security	4
200 Network Emergency Management	3
209 Network Defense	4
221 Network Forensics	4

Microcomputer Concentration 3 CH

Select one course from the following:

CIS (032)

101 Intro to Computer Information System (3)	
120 Intro to Microcomputers (3)	
122 Intro to Word Processing on Microcomputers (3)	
123 Intro Spreadsheet on Microcomputers (3)	
250 Introduction to Systems (3)	

Program Language Concentration 9 CH

Select three courses from the following:

CIS (032)

103 Intro to Basic Language (3)	
142 Intro to C or C++ Language (3)	
145 Intro to Database on Microcomputers (3)	
158 Beginning Internet (3)	
258 Advanced Internet (3)	

TOTAL PROGRAM MINIMUM CREDIT HOURS 31 CH

NETWORK SECURITY AND FORENSICS (BASIC) 383

Basic Certificate (B.C) 18 Credit Hours (CH)

This Basic Certificate program provides specialized study for those students with an interest in network security, security management, cryptography, information forensics and related areas. The program targets novice students in network security and forensics and in related areas such as public and private security agencies, computer companies and consultancies, police forces, the military services, and other government agencies.

Required Program Core (minimum) 15 CH

Select four from the following:

Computer Security & Forensic Investigation (162)

103 Intro to Network Security (4)	
109 Network Systems Security (4)	
200 Network Emergency Management (3)	
209 Network Defense (4)	
221 Network Forensics (4)	

Concentration 3 CH

Select one course from the following:

CIS (032)

101 Intro to Computer Information Systems (3)	
120 Intro to Microcomputers (3)	

TOTAL PROGRAM MINIMUM CREDIT HOURS 18 CH

NETWORKING SYSTEMS AND TECHNOLOGY 141

*Associate in Applied Science degree (A.A.S.)
(60 Credit Hours)*

A student chooses to major in one of two tracks:

(1) Networking or **(2) Hardware/Software Support**, depending on the career goals. The Networking Track is for individuals interested in maintaining network equipment and software such as servers, hubs, switches and routers. The Hardware/Software Support track prepares individuals for PC hardware and software maintenance and support. Both tracks also prepare students for a variety of computer industry certifications: A+, Network, CNA, MCP, MOUS, CCNA.

General Education 18 CH

Students should meet with a college Academic Advisor for selection of specific course requirements for the general education portion of the A.A.S. degree.

See page 51 for A.A.S. general education degree requirements.

PROGRAMS OF STUDY

INFORMATION TECHNOLOGY

Required Program Core (minimum) 42 CH (Track 1 or Track 2)

Select one of the following two tracks:

Networking Track (1)

CIS (032)

101 Intro to Computer Information Systems 3

116 Introduction to Operating Systems 3

120 Introduction to Microcomputers 3

Networking Technologies (165)

121 Internetworking I 3

122 Internetworking II 3

221 Internetworking III 3

222 Internetworking IV 3

21 CH

*Students should meet with a college Academic Advisor for selection of a **minimum 21 credit hours** from the additional core courses shown below:*

Note: For students who do not have any equivalent professional experience, at least three credit hours of an internship is required.

Business (030)

111 Intro to Business (3)

CIS (032)

158 Beginning Internet (3)

258 Advanced Internet (3)

260 CIS Field Project (3) OR

299 Special Topics in CIS (3-4)

Cooperative Work Experience (008)

106 Commercial-Data Processing CWE (3-6)

108 Engineering & Industrial Tech CWE (3-6)

206 Commercial Data Processing CWE (3-6)

208 Engineering & Industrial Tech CWE (3-6)

OR

Hardware/Software Support Track (2)

CIS (032)

101 Intro to Computer Information Systems 3

116 Introduction to Operating Systems 3

120 Introduction to Microcomputers 3

122 Introduction to Word Processing on Microcomputers 3

123 Introduction to Spreadsheets on Microcomputers 3

145 Introduction to Data Base on Microcomputers 3

Networking Technologies (165)

121 Internetworking I 3

21 CH

*Students should meet with a college Academic Advisor for selection of a **minimum 21 credit hours** from the additional core courses shown below:*

21 CH

Note: For students who do not have any equivalent professional experience, at least three credit hours of an internship is required.

Business (030)

111 Intro to Business (3)

CIS (032)

158 Beginning Internet (3)

258 Advanced Internet (3)

260 CIS Field Project (3) OR

265 CIS Internship (3)

Cooperative Work Experience (008)

106 Commercial-Data Processing CWE (3-6)

108 Engineering & Industrial Tech CWE (3-6)

206 Commercial Data Processing CWE (3-6)

208 Engineering & Industrial Technologies (3-6)

NETWORKING SYSTEMS AND TECHNOLOGY 142

Advanced Certificate (A.C.) 30 Credit Hours (CH)

Required Program Core 6 CH

CIS (032)

101 Introduction to Computer Information Systems 3

116 Introduction to Operating Systems 3

Additional Core Courses 24 CH

Networking Track (1)

Networking Technologies (165)

121 Internetworking I 3

122 Internetworking II 3

221 Internetworking III 3

222 Internetworking IV 3

Hardware/Software Support Track (2)

CIS (032)

120 Introduction to Microcomputers 3

122 Introduction to Word Processing 3

on Microcomputers

123 Introduction to Spreadsheets 3

on Microcomputer

145 Introduction to Data Base on Microcomputers 3

TOTAL PROGRAM MINIMUM CREDIT HOURS 30 CH

PROGRAMS OF STUDY

INFORMATION TECHNOLOGY

NETWORKING SYSTEMS AND TECHNOLOGY 143

Basic Certificate (B.C.) 18 Credit Hours (CH)

Required Program Core **6 CH**

CIS (032)		
101 Introduction to Computer Information Systems	3	
116 Introduction to Operating Systems	3	

Additional Core Courses **12 CH**

Select one of the following two tracks:

Networking Track (1)

Networking Technologies (165)

121 Internetworking I		3
122 Internetworking II		3
221 Internetworking III		3
222 Internetworking IV		3

OR

Hardware/Software Support Track (2)

CIS (032)

120 Introduction to Microcomputers		3
122 Introduction to Word Processing on Microcomputers		3
123 Introduction to Spreadsheets		3
145 Introduction to Data Base on Microcomputers		3

TOTAL PROGRAM MINIMUM CREDIT HOURS **18 CH**

WEB DEVELOPMENT 155

Advanced Certificate (A.C.) 31 Credit Hours (CH)

The Web Development Advanced Certificate program prepares students for entry-level positions as Web site editors, developers, or designers. Students acquire an understanding of programming principles and languages incorporated in Web pages, and become proficient in HTML and related technologies. This program will also be useful to individuals whose job duties have expanded to include web site responsibilities or who wish to develop web pages for their businesses.

Required Program Core **13 CH**

CIS (032)		
181 Web Development I	3	
182 Web Development II	3	
281 Web Development III	3	
282 Web Development IV	4	

Electives

Select six courses from the following:

CIS (032)

101 Intro to Computer Information Systems (3)		
103 Intro to BASIC Language (3)		
116 Intro to Operating Systems (3)		
120 Intro to Microcomputers (3)		
122 Intro to Word Processing (3)		
123 Intro to Spreadsheets (3)		
144 JAVA I (3)		
145 Intro to Database (3)		
203 Advanced BASIC Programming (3)		
244 JAVA II (3)		
250 Intro to Systems (3)		

TOTAL PROGRAM MINIMUM CREDIT HOURS **31 CH**

WEB DEVELOPMENT 152

Basic Certificate (B.C.) 16 Credit Hours (CH)

Required Program Core **13 CH**

CIS (032)

181 Web Development I/Basic Web Tech.		3
182 Web Development II/Client Side Script.		3
281 Web Development III/Server Side Program		3
282 Web Development IV/Web Database Integr.		4

Electives **3 CH**

Select one course from the following:

CIS (032)

101 Intro to Computer Information Systems (3)		
103 Intro to BASIC Language (3)		
116 Intro to Operating Systems (3)		
120 Intro to Microcomputers (3)		
122 Intro to Word Processing on Micro (3)		
123 Intro Spreadsheet on Microcomputer (3)		
144 Intro to JAVA Programming Language (3)		
145 Intro to Database on Microcomputer (3)		
203 Advanced BASIC Programming (3)		
244 Advanced JAVA Programming Language (3)		
250 Intro to Systems (3)		

TOTAL PROGRAM MINIMUM CREDIT HOURS **16 CH**