

Information Systems Technology Degrees and Certificates

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Associate of Applied Science Degree in Information Systems Technology

AREA: Information Systems Technology

DEGREE: Associate of Applied Science Degree

LENGTH: Four semesters (two-year) program

PURPOSE: The associate of applied science degree program in information systems technology (IST) is designed for students who seek employment or professional development as a generalist in the area of information technology (IT), with specific knowledge in various areas such as Web design/development, computer network design and administration and database administration.

OCCUPATIONAL OBJECTIVES: The associate of applied science degree curriculum in information systems technology prepares students for employment with business, industry and government organizations as entry-level Web applications developers, network engineers or database administrators, depending on degree specialization.

TRANSFER GUIDELINES: Transfer opportunities for associate of applied science degrees, if existing, are very specific in nature. Students enrolling in an applied science degree with plans to transfer to a four-year college or university should explore opportunities with their faculty advisor.

PROGRAM REQUIREMENTS: A student who studies topics in IT must possess general knowledge in systems analysis and design, software design and development, Web markup languages, Internet and network foundations and database fundamentals. Additionally, students must possess sound analytical and problem-solving skills, strong written and verbal communications skills and must have good interpersonal skills. These skills are an integral part of the information system technology (IST) curriculum. The curriculum includes technical courses in information technology, business-related areas, general education and electives. Instruction is centered on theoretical concepts and practical, hands-on applications key to success in the information technology field. Students are strongly encouraged to consult with their faculty advisor in planning their programs and selecting electives. Upon satisfactory completion of the program the graduate will be awarded the associate of applied science degree with a major in information system technology.

SPECIAL NOTE (BRIDGE COURSES): This program is designed for those students who have completed a variety of keyboarding and introductory computer applications courses at the high school level. A student who has not completed the recommended high school courses may enroll in the IST program by taking courses designed to bridge the gap. These courses are to be

selected by consulting with an IST advisor and may include one or more of the following:

AST 101	Keyboarding	3 credits
ITE 115	Intro to Computer Applications and Concepts	3 credits

Course#	Title	Credits
First Semester		
ENG 111	College Composition I	3
ITD 110	Web Page Design I	3
ITD 130	Database Fundamentals	3
ITN 109	Internet and Network Foundations	3
MTH 151/152	Math for Liberal Arts ¹ (or MTH 163 or 271)	3
SDV 101	Orientation to the IT Professions	1
Total		16
Second Semester		
ENG 112	College Composition II	3
ITE 120	Principles of Information Systems	3
ITN 106	Microcomputer Operating Systems	3
ITP 100	Software Design	3
MTH 151/152	Math for Liberals Arts ¹ (or MTH 271 or 272)	3
	Approved social science elective ²	3
Total		18
Third Semester		
ECO 201/202	Principles of Macro/Microeconomics	3
ENG 115	Technical Writing	3
	Approved IT elective ³	3
	Approved IT elective ⁴	3
ITP 112	Visual Basic.NET I	4
PED/HLT	Physical Education (or Health)	2
Total		18
Fourth Semester		
	Approved IT elective ⁵	3
	Approved IT elective ⁵	3
	Approved IT elective ⁵	3
ITP 251	Systems Analysis and Design	4
	Approved Humanities elective ⁶	3
Total		16
Program Total		68

¹ Students planning to transfer to a four-year college are encouraged to take MTH 163 or MTH 271/272.

² Students may select social science elective from the approved list on page 51.

³ Students may select ITD 210, ITD 132, ITN 107.

⁴ Students may select ITD 112, ITD 134 or ITN 200.

⁵ Students may select ITD 112, ITD 132, ITD 134, ITD 210, ITD 220, ITD 250, ITN 107, ITN 120, ITN 170, ITN 200, ITN 201, ITN 224, ITN 260, ITN 261, ITP 120, ITP 132, ITP 136, ITP 160, ITP 225.

⁶ Students may select humanities elective from the approved list located on page 50.

Associate of Applied Science Degree in Information Systems Technology: Database and Software Development Specialization

AREA: Information Systems Technology:
Database and Software Development

DEGREE: Associate of Applied Science Degree

LENGTH: Four semesters (two-year) program

PURPOSE: This curriculum is designed to provide skills to students in designing, implementing, troubleshooting, and maintaining databases as well as software design and development skills.

OCCUPATIONAL OBJECTIVES: The associate of applied science degree curriculum in information systems technology with a database and software development specialization is designed for students who wish to seek full-time employment as a database specialist, database analyst or software developer.

TRANSFER GUIDELINES: Transfer opportunities for associate of applied science degrees, if existing, are very specific in nature. Students enrolling in an applied science degree with plans to transfer to a four-year college or university should explore opportunities with their faculty advisor.

PROGRAM REQUIREMENTS. A database analyst or software developer must possess detailed knowledge of one or more database systems, strong analytical and problem-solving skills, and good interpersonal and communications skills. These skills are an integral part of the information systems technology (IST) curriculum. The curriculum includes technical courses in information technology, business-related areas, general education and electives. Instruction is centered on theoretical concepts and practical, hands-on applications key to success in the database administration and software development fields. Students are strongly encouraged to consult with their faculty advisor in planning their programs and selecting electives. Upon satisfactory completion of the program the graduate will be awarded the associate of applied science degree with a major in information system technology with a database and software development specialization.

SPECIAL NOTE (BRIDGE COURSES): This program is designed for those students who have completed a variety of keyboarding and introductory computer applications courses at the high school level. A student who has not completed the recommended high school courses may enroll in the IST program by taking courses designed to bridge the gap. These courses are to be selected by consulting with an IST advisor and may include one or more of the following:

AST 101	Keyboarding I	3 credits
ITE 115	Intro to Computer Applications and Concepts	3 credits

Course#	Title	Credits
First Semester		
ENG 111	College Composition I	3
ITD 110	Web Page Design I	3
ITD 130	Database Fundamentals	3
ITN 109	Internet and Network Foundations	3
MTH 151/152	Math for Liberal Arts ¹ (or MTH 163 or 271)	3
SDV 101	Orientation to the IT Professions	1
	Total	16
Second Semester		
ENG 112	College Composition II	3
ITE 120	Principles of Information Systems	3
ITN 106	Microcomputer Operating Systems	3
ITP 100	Software Design	3
MTH 151/152	Math for Liberal Arts ¹ (or MTH 271 or 272)	3
	Approved social science elective ²	3
	Total	18
ITE 120	Principles of Information Systems	3
ITN 106	Microcomputer Operating Systems	3
ITP 100	Software Design	3
MTH 151/152	Math for Liberal Arts ¹ (or MTH 271 or 272)	3
	Approved social science elective ²	3
	Total	18
Third Semester		
ECO 201/202	Principles of Macro/Microeconomics	3
ENG 115	Technical Writing	3
ITD 132	Structured Query Language	3
ITP 112	Visual Basic.NET I	4
PED/HLT	Physical Education (or Health)	2
	Approved ITP/ITD elective ³	3
	Total	18
Fourth Semester		
ITP 120	Java Programming	4
ITP 251	Systems Analysis and Design	4
	Approved humanities elective ⁴	3
	Approved ITP/ITD elective ³	3
	Approved ITP/ITD elective ³	3
	Total	17
	Program Total	69

¹ Students planning to transfer to a four-year college are encouraged to take MTH 163 or MTH 271/272.

² Students may select social science elective from the approved list on page 51.

³ Students may select from ITD 112, ITD 134, ITD 210, ITD 220, ITD 250, ITP 132, ITP 160, ITP 212, ITP 220, ITP 225

⁴ Students may select humanities elective from the approved list on page 50.

Associate of Applied Science Degree in Information Systems Technology: Network Engineering Specialization

AREA: Information Systems Technology:
Network Engineering Specialization

DEGREE: Associate of Applied Science Degree

LENGTH: Four semesters (two-year) program

PURPOSE: This curriculum is designed to provide skills to students in understanding advanced concepts of designing, installing, administering and repairing computer networks.

OCCUPATIONAL OBJECTIVES: The associate of applied science degree curriculum in information systems technology with a network engineering specialization is designed for students who wish to seek full-time employment as a network administrator, analyst, designer or technician.

TRANSFER GUIDELINES: Transfer opportunities for associate of applied science degrees, if existing, are very specific in nature. Students enrolling in an applied science degree with plans to transfer to a four-year college or university should explore opportunities with their faculty advisor.

RELATED CERTIFICATIONS: In addition to providing a foundation in network engineering, this degree prepares students to obtain entry-level certifications and eventually seek advanced certification in a number of networking technologies. Related entry-level certifications include CompTIA A+ and CompTIA Network+.

PROGRAM REQUIREMENTS. A network engineer must possess detailed knowledge of one or more networking technologies, strong analytical and problem-solving skills and good interpersonal and communications skills. These skills are an integral part of the information systems technology (IST) curriculum. The curriculum includes technical courses in information technology, business-related areas, general education and electives. Instruction is centered on theoretical concepts and practical, hands-on applications key to success in the networking field. Students are strongly encouraged to consult with their faculty advisor in planning their programs and selecting electives. Upon satisfactory completion of the program the graduate will be awarded the associate of applied science degree in information system technology with a network engineering specialization.

SPECIAL NOTE (BRIDGE COURSES): This program is designed for those students who have completed a variety of keyboarding and introductory computer applications courses at the high school level. A student who has not completed the recommended high school courses may enroll in the IST Program by taking courses designed

to bridge the gap. These courses are to be selected by consulting with an IST advisor and may include one or more of the following:

AST 101	Keyboarding I	3 credits
ITE 115	Intro to Computer Applications and Concepts	3 credits

Course#	Title	Credits
First Semester		
ENG 111	College Composition I	3
ITD 110	Web Page Design	3
ITD 130	Database Fundamentals	3
ITN 109	Internet and Network Foundations	3
MTH 151/152	Math for Liberal Arts ¹ (or MTH 163 or 271)	3
SDV 101	Orientation to the IT Professions	1
Total		16
Second Semester		
ENG 112	College Composition II	3
ITE 120	Principles of Information Systems	3
ITN 106	Microcomputer Operating Systems	3
ITP 100	Software Design	3
MTH 151/152	Math for Liberal Arts ¹ (or MTH 271 or 272)	3
	Approved social science elective ²	3
Total		18
Third Semester		
ECO 201/202	Principles of Macro/Microeconomics	3
ENG 115	Technical Writing	3
ITN 107	Personal Computer Hardware and Troubleshooting	3
ITN 200	Admin of Network Resources	3
ITN 260	Network Security Basics	3
PED/HLT	Physical Education (or Health)	2
Total		17
Fourth Semester		
ITN 170	Linux System Administration	3
ITN 201	Admin and Management of Network Infrastructures	3
ITP 251	Systems Analysis and Design	4
	Approved humanities elective ³	3
	Approved ITN/ITP elective ⁴	3
Total		16
Program Total		67

¹ Students planning to transfer to a four-year college are encouraged to take MTH 163 or MTH 271/272.

² Students may select social science elective from the approved list located on page 51.

³ Student may select humanities elective from the approved list located on page 50.

⁴ Students may select from ITN 120, ITN 224, ITN 261, ITN 263, ITP 112, ITP 120, ITP 132, ITP 160.

Associate of Applied Science Degree in Information Systems Technology: Web Applications Development Specialization

AREA: Information Systems Technology:
Web Applications Development Specialization

DEGREE: Associate of Applied Science Degree

LENGTH: Four semesters (two-year) program

PURPOSE: This curriculum is designed to provide skills to students in designing, building, testing and maintaining Web pages, links and interfaces to Web-enabled applications.

OCCUPATIONAL OBJECTIVES: The associate of applied science degree curriculum in information systems technology with a Web applications development specialization is designed for students who wish to seek full-time employment as a Web page designer and/or Web site developer. Tasks may include designing, building, testing and maintaining Web pages/applications interfaces and links; updating Web content and ensuring that site functions and design are not disrupted; building a Web site's interactive components; incorporating video, audio and animation into Web pages; providing documentation for maintenance, installation and troubleshooting; and/or compiling statistics related to utilization of a Web site.

TRANSFER GUIDELINES: Transfer opportunities for associate of applied science degrees, if existing, are very specific in nature. Students enrolling in an applied science degree with plans to transfer to a four-year college or university should explore opportunities with their faculty advisor.

RELATED CERTIFICATIONS: In addition to providing a foundation in Web design and development, this degree prepares students to obtain entry-level certifications such as the CIW Associate, Master CIW Designer and Master CIW Web Site Manager.

PROGRAM REQUIREMENTS: A Web applications developer must possess detailed knowledge of markup languages and different Web scripting languages, knowledge of graphics art packages, good written and verbal communications skills, familiarity with database operation, strong analytical and problem-solving skills and good interpersonal skills. These skills are an integral part of the information systems technology (IST) curriculum. The curriculum includes technical courses in information technology, business-related areas, general education and electives. Instruction is centered on theoretical concepts and practical, hands-on applications key to success in the Web application development field. Students are strongly encouraged to consult with their faculty advisor in planning their programs and selecting electives. Upon satisfactory completion of the program the graduate will be awarded the associate of applied science degree with a major information system technology with a Web applications development specialization.

SPECIAL NOTE (BRIDGE COURSES): This program

is designed for those students who have completed a variety of keyboarding and introductory computer applications courses at the high school level. A student who has not completed the recommended high school courses may enroll in the IST program by taking courses designed to bridge the gap. These courses are to be selected by consulting with an IST advisor and may include one or more of the following:

AST 101	Keyboarding	3 credits
ITE 115	Intro to Computer Applications and Concepts	3 credits

Course#	Title	Credits
First Semester		
ENG 111	College Composition I	3
ITD 110	Web Page Design I	3
ITD 130	Database Fundamentals	3
ITN 109	Internet and Network Foundations	3
MTH 151/152	Math for Liberal Arts ¹ (or MTH 163 or 271)	3
SDV 101	Orientation to the IT Professions	1
Total		16
Second Semester		
ENG 112	College Composition II	3
ITE 120	Principles of Information Systems	3
ITN 106	Microcomputer Operating Systems	3
ITP 100	Software Design	3
MTH 151/152	Math for Liberals Arts ¹ (or MTH 271 or 272)	3
	Approved social science elective ²	3
Total		18
Third Semester		
ECO 201/202	Principles of Macro/Microeconomics	3
ENG 115	Technical Writing	3
ITD 112	Designing Web Page Graphics	3
ITD 220	e-Commerce Administration	3
PED/HLT	Physical Education (or Health)	2
	Approved ITP ³	3-4
Total		17-18
Fourth Semester		
ITD 210	Web Page Design II	3
ITN 224	Web Server Management	3
ITP 225	Web Scripting Languages	3
ITP 251	Systems Analysis and Design	4
	Approved humanities elective ⁴	3
Total		16
Program Total		67-68

¹ Students planning to transfer to a four-year college are encouraged to take MTH 163 or MTH 271/272.

² Students may select social science elective from the approved list on page 51.

³ Student may select humanities elective from the approved list on page 50.

⁴ Students may select from ITN 120, ITN 224, ITN 261, ITN 262, ITP 112, ITP 120, ITP 132, ITP 160.

Career Studies Certificates

The IST Program consists of a number of career studies options that focus on a specific career field in information technology (IT). These programs are best suited for individuals who already hold a degree and want to change careers or who seek advancement in their current field.

The career studies certificates listed here provide students with opportunities to gain skills in designing, building, testing and maintaining Web pages, links and interfaces to Web-enabled applications; designing, implementing, troubleshooting and maintaining databases; and/or designing, installing, administering and repairing computer networks.

Before entering a career studies program, students should have a strong foundation in using computer applications (ITE 115 course description in the back of this catalog). Students should also have a strong foundation in computer concepts to include database fundamentals, Internet and networking fundamentals, operating systems, software design and computer hardware troubleshooting prior to beginning the program. This foundation can be obtained by completing the core IT courses which include ITD 110, ITD 130, ITE 120, ITN 106, ITN 109 and ITP 100 (see course descriptions in the back of catalog).

Database Administration Specialist

ITD	130	Database Fundamentals	3
ITD	132	Structured Query Language	3
ITD	134	PL/SQL Programming	3
ITD	250	Database Architecture and Administration	3
ITP	100	Software Design	3
Total			15

Information Technology Foundations

ITE	120	Principles of Information Systems	3
ITP	100	Software Design	3
ITD	130	Database Fundamentals	3
ITN	109	Internet & Network Foundations	3
ITD	110	Web Page Design I	3
ITN	106	Microcomputer Operation Systems	3
ITP	160	Introduction to Game Design and Development	3
Total			21

Networking Engineering Professional*

ITN	120	Wireless Network Administration	3
ITN	170	Linux System Administration	3
ITN	201	Network Infrastructure Administration, Management and Planning	3
Total			9

*NOTE: Students should complete the course work in the networking specialist career studies certificate or have equivalent job-related experience before entering into the networking engineering professional career studies certificate program.

Networking Specialist

ITN	106	Microcomputer Operating Systems	3
ITN	107	Personal Computer Hardware and Troubleshooting	3
ITN	109	Internet and Network Foundations	3
ITN	200	Administration of Network Resources	3
ITN	260	Network Security Basics	3
Total			15

Web Applications Development Professional*

ITD	132	Structured Query Language	3
ITD	220	E-Commerce Administration	3
ITN	224	Web Server Management	3
ITN	260	Network Security Basics	3
ITP	225	Web Scripting Languages	4
Total			16

*NOTE: Students should complete the course work in the web design specialist career studies certificate or have equivalent job-related experience before entering into the Web application development professional career studies certificate program.

Web Design Specialist

ITD	110	Web Page Design I	3
ITD	112	Designing Web Page Graphics	3
ITD	130	Database Fundamentals	3
ITD	210	Web Page Design II	3
ITN	109	Internet and Network Foundations	3
Total			15