

# Information Technologies

Students majoring in the information technologies may pursue associate of applied science degrees in computer science, computer networking and telecommunications, and interactive media technology as well as associate of applied business degrees in the areas of computer technology, e-commerce and database administrator technology.

The associate of applied science degree has a greater focus on math and science where the associate of applied business degree is less math intensive and incorporates general business and accounting courses into the curriculum. All information technology programs cover the latest technologies and skills and were designed with the assistance of advisory committees composed of representatives of local employers.

Information technology graduates work in positions such as webmasters, network engineers, computer programmers, technical support advisors, database administrators, help desk staff, software support specialists and software developers.

**Bachelor's degree:** In most of the associate degree programs, all or nearly all courses may be applied toward a bachelor's degree in technology. Bachelor's degree requirements and course transferability are controlled by the institution to which the student plans to transfer and students are urged to discuss transferability of credits with the college or university to which they plan to transfer.

## **Bachelor of Science in Computer Science and Engineering Technology from the University of Toledo**

The University of Toledo and Stark State College of Technology have formed a partnership to offer a bachelor of science degree completion program in computer science and engineering technology. All University of Toledo courses will be offered on the campus of Stark State College.

Participation in the program is for students who have completed either Stark State's computer science and engineering technology degree or the computer networking and telecommunications engineering technology degree.

## **Bachelor of Science from Franklin University**

Franklin University and Stark State College of Technology have formed a partnership to offer a bachelor of science degree completion program in computer science, management information systems and digital communication. All Franklin University courses are offered online and can be taken on the campus of Stark State College.

Students interested in the four-year University of Toledo or Franklin University program offered on the Stark State College campus should talk to their Stark State advisors for more details and application information.

In addition to these programs, the information technology division offers a number of career enhancement certificates designed to enhance specific sets of skills.

For more information, please call Stark State's Office of Admissions/Student Services at 330-966-5450.



# Computer Network Administration and Security Technology

This program provides students with information on computer network administration, from basic PC hardware and software to the latest network operating systems. Students gain an understanding of Microsoft, Novell Netware and Unix-based operating systems and how they are used in today's marketplace. This is an ever-growing and rapidly changing field that requires graduates to work across many platforms and this option provides the appropriate training.

When hundreds of new software applications hit the market, graduates with this program option will already have the ability to take full competitive advantage above the rest. This course of study provides graduates with the technical information to get the task accomplished and be successful in the field of network administration.

## SUGGESTED COURSE SEQUENCE

			Credit Hours
<b>Semester I</b>			
ECA	122	Computer Applications for Technical Professionals	3
EET	131	PC Upgrading and Maintenance	3
EET	141	Introduction to Computer Networking	3
MTH	121	College Algebra and Trigonometry I	4
ENG	124	College Composition †	3
			16
<b>Semester II</b>			
ECA	131	Microsoft Windows 2000 Professional	3
EET	257	UNIX/LINUX Operating Environment	3
CAP	136	Netware Administration	3
MTH	122	College Algebra and Trigonometry II	3
ECA	127	Programming Logic and Problem Solving	3
SPH	122	Inter-group Communications	3
			18
<b>Semester III</b>			
ECA	244	MS Windows 2000 Server and Network Infrastructure	3
EET	242	MS SQL Server Administration	3
EET	251	UNIX/LINUX Network Administration	3
ACC	130	Business Law and Ethics	3
PHY	121	Physics I	4
CAP	138	iSeries Operating Environment*	3
CAP	251	Advanced Netware Administration*	3
EET	250	UNIX/LINUX System Administration*	3
			19
<b>Semester IV</b>			
ECA	245	Designing a Microsoft Windows 2000 Network and Windows 2000 Security	3
EET	259	Web Server Administration	3
BUS	122	Basic Economics	3
ECA	246	Implementing, Administering and Designing Microsoft Windows 2000 Directory Services	3
ENG	221	Technical Report Writing	3
EET	258	Data Encryption and Firewall Technology	3
			18

### 71 TOTAL CREDIT HOURS

\* Select from 3 credit hours of electives.

† Based on SSCT placement score.

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# Computer Network Administration and Security Technology

## Security and Forensics Option

### SUGGESTED COURSE SEQUENCE

			Credit Hours
<b>Semester I</b>			
ECA	122	Computer Applications for Technical Professionals	3
EET	127	Programming Logic and Problem Solving	3
EET	131	PC Upgrading and Maintenance	3
EET	141	Introduction to Computer Networking	3
ENG	124	College Composition †	3
			15
<b>Semester II</b>			
ECA	131	Microsoft Windows 2000 Professional	3
ECA	130	Software Vulnerabilities	3
ECA	228	Internet/Intranet Design and Development	3
EET	260	Computer Forensics	3
MTH	121	College Algebra and Trigonometry I	4
SPH	122	Inter-group Communications	3
			19
<b>Semester III</b>			
ECA	244	MS Win2000 Server and Network Infrastructure	3
BUS	122	Basic Economics	3
PHY	121	Physics I	4
ECA	222	Introduction to C++ Programming	3
EET	257	UNIX/LINUX Operating Environment	3
ECA	225	Applied Interactive Software Development	3
			19
<b>Semester IV</b>			
ECA	129	Cryptography	
EET	251	UNIX/LINUX Network Administration	3
EET	258	Data Encryption and Firewall Technology	3
EET	259	Web Server Administration	3
ENG	221	Technical Report Writing	3
ACC	130	Business Law/Ethics	3
			18

### 71 TOTAL CREDIT HOURS

\* Select from 3 credit hours of electives.

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# Computer Networking and Telecommunications Engineering Technology

This program provides students with information on computer networking, electronics, telecommunications and board-level functioning of computers. Students gain an understanding of software systems and software interaction. The computer, computer network and telecommunications are addressed as an interactive system.

The telecommunications information covers voice, video and data communications. It addresses the generation of the electrical signals; their transmission by various means; signal receiving and decoding; and information output.

The outlook for the future is extremely positive! Studies by the Ohio Bureau of Employment Services show that the number one career field is in the computer networking and telecommunications area. All of these four occupations are projected to grow more than 50% in the next 10 years.

Students interested in pursuing a 2+2 or 2+3 bachelor of science degree should consult their academic advisor prior to initial enrollment in the courses.

## SUGGESTED COURSE SEQUENCE

		<b>Credit Hours</b>
<b>Semester I</b>		
ECA 122	Computer Applications for Technical Professionals	3
EET 120	DC Circuit Analysis	4
ENG 124	College Composition †	3
MTH 121	College Algebra and Trigonometry I	4
PHY 121	Physics I	4
		18
<b>Semester II</b>		
EET 131	PC Upgrading and Maintenance	3
ECA 141	Introduction to Computer Networking	3
EET 123	Electronic Devices and Circuits	3
MTH 122	College Algebra and Trigonometry II	3
SPH 122	Inter-group Communications	3
EET 122	AC Circuit Analysis	4
		19
<b>Semester III</b>		
ECA 127	Programming Logic and Problem Solving	3
ECA 131	MS Win2000 Professional	3
EET 221	Pulse, Logic and Switching Circuits (8W 1)	3
EET 222	Digital Integrated Circuits (8W 2)	3
EET 129	Optics	2
EET 248	Workstation Interfacing (8W 2)	2
ACC 130	Business Law and Ethics	3
		19
<b>Semester IV</b>		
ECA 244	MS Windows 2000 Server and Network Infrastructure	3
EET 257	UNIX Operating Environment*	3
ECA 246	Implementing, Administering and Designing MS Win2000 Directory Services*	3
ECA 245	Designing an MS Win2000 Network and Win2000 Security*	2
EET 245	Technical Project – Electronic Telecommunications*	3
MTH 221	Concepts of Calculus	3
ENG 221	Technical Report Writing	3
EET 244	Electronic Telecommunications	3
BUS 122	Basic Economics	3
		18

### 74 TOTAL CREDIT HOURS

\* Must select 2-3 credit hours of electives. (8W 1) = 8-week course 1st 8 weeks  
 † Based on SSCT placement score. (8W 2) = 8-week course 2nd 8 weeks



A COLLEGE TECH PREP PARTICIPANT

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# Computer Science and Engineering Technology

The computer science and engineering technology program has been established to meet the burgeoning demand in Northeastern Ohio for software engineers, programmers/analysts and technical computer software consultants. The computer science and engineering technology program is accompanied by two options, the video gaming option and the University of Toledo transfer option, allowing a total of three curriculum paths.

There is currently a tremendous demand for individuals who know how to use Object Oriented Programming

(OOP) languages to develop software in the following OOP languages: Java, Visual C++ and Visual Basic. Many of the courses in this curriculum prepare individuals for certification exams found in Microsoft's MCSD professional certification sequence. This option allows students to get a degree and prepare for MCSD at the same time. Stark State is an authorized academic training program (AATP) for Microsoft. This means that students can take courses that will prepare them for Microsoft certification tests which can be taken at Stark State College.

## SUGGESTED COURSE SEQUENCE

		Credit Hours	
<b>Semester I</b>			
ECA	122	Computer Applications for Technical Professionals	3
ECA	127	Programming Logic and Problem Solving	3
ENG	124	College Composition †	3
MTH	121	Intermediate Algebra and Trigonometry I	4
PHY	121	Physics I	4
		17	
<b>Semester II</b>			
ACC	130	Business Law and Ethics	3
BUS	122	Basic Economics	3
ECA	223	Java Programming in Computer Science	3
ECA	228	Internet/Intranet Design and Development	3
EET	141	Introduction to Computer Networking	3
MTH	122	College Algebra and Trigonometry II	3
		18	
<b>Semester III</b>			
ECA	128	<i>Developing and Implementing Windows-based Applications with MS Visual Basic.Net</i>	3
ECA	222	Introduction to C++ Programming	3
ECA	230	Database Design/Interface for Software Developers	3
ENG	221	Technical Report Writing	3
MTH	221	Concepts of Calculus	3
SPH	122	Inter-group Communications	3
		18	
<b>Semester IV</b>			
ECA	224	<i>Software Engineering Design/Development with COM**</i>	3
ECA	226	<i>Introduction to C++ The Foundation Classes**</i>	3
ECA	227	Assembly Language	3
ECA	233	<i>Analyzing Software Requirements and Developing Solutions</i>	3
ECA	238	<i>Developing Database Applications using Microsoft ADO.NET</i>	3
ECA	239	Advanced Java Programming for Software Engineering Applications	3
ECA	131	Microsoft Windows 2000 Professional*	3
EET	257	UNIX/LINUX Operating Environment*	3
CAP	138	iSeries Operating Environment*	3
		18	

### 71 TOTAL CREDIT HOURS

\* Select 3 credit hours of technical electives.

\*\* Select 3 credit hours of programming electives.

† Based on SSCT placement score.

*Bold italicized courses indicate courses that contain content for MSCD certification.*



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# Computer Science and Engineering Technology

## University of Toledo Transfer Option

Upon graduation from Stark State College with a two-year associate's degree in computer science and engineering technology, students enrolled in this option have the opportunity to continue their studies for two more years to earn a bachelor's degree in computer science and engineering technology from the University of Toledo. The bachelor's degree is awarded by the

University of Toledo through an educational partnership with Stark State College. Many of the courses taken during the junior and senior years are online courses and are completed over the Internet; the rest are taken from Stark State's course offerings. The entire degree is earned either online or on Stark State's campus!

### SUGGESTED COURSE SEQUENCE

		<b>Credit Hours</b>	
<b>Semester I</b>			
ECA	122	Computer Applications for Technical Professionals	3
ECA	127	Programming Logic and Problem Solving	3
ENG	124	College Composition †	3
MTH	121	Intermediate Algebra and Trigonometry I	4
PHY	121	Physics I	4
			17
<b>Semester II</b>			
BUS	122	Basic Economics	3
ECA	223	Java Programming in Computer Science	3
ECA	228	Internet/Intranet Design and Development	3
EET	120	DC Circuit Analysis	4
EET	141	Introduction to Computer Networking	3
MTH	122	College Algebra and Trigonometry II	3
			19
<b>Semester III</b>			
ECA	128	Developing and Implementing Windows-based Applications with MS Visual Basic.Net	3
ECA	222	Introduction to C++ Programming	3
EET	122	AC Circuit Analysis	4
ENG	221	Technical Report Writing	3
MTH	221	Concepts of Calculus	3
SPH	122	Inter-group Communications	3
			19
<b>Semester IV</b>			
ACC	130	Business Law and Ethics	3
ECA	227	Assembly Language	3
EET	230	Database Design/Interface for Software Developers	3
ECA	233	Analyzing Software Requirements and Developing Solutions	3
EET	123	Electronic Devices and Circuits	3
EET	129	Optics	2
			17

### 72 TOTAL CREDIT HOURS

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# Computer Science and Engineering Technology

## Video Game Design Option

Want to become an expert software developer and have some fun in the process?

Stark State's new video game design option is the latest addition to the computer science and engineering technology major. Don't underestimate the depth of presentation! This option is one of the most demanding

in terms of math and computer science requirements. A rigorous regimen and advance mathematics, coupled with object-oriented programming, are carefully meted out to assure the highest level of proficiency in gaming and software engineering.

### SUGGESTED COURSE SEQUENCE

			<b>Credit Hours</b>
<b>Semester I</b>			
ECA	122	Computer Applications for Technical Professionals	3
ECA	127	Programming Logic and Problem Solving	3
ENG	124	College Composition †	3
MTH	121	Intermediate Algebra and Trigonometry I	4
PHY	121	Physics I	4
			17
<b>Semester II</b>			
BUS	122	Basic Economics	3
ECA	222	Introduction to C++ Programming	3
ECA	223	Java Programming in Computer Science	3
IMT	126	Flash Animation and Design	3
IMT	127	Game Design	3
MTH	122	College Algebra and Trigonometry II	3
			18
<b>Semester III</b>			
ENG	221	Technical Report Writing	3
IMT	122	Graphic Arts Design	3
IMT	224	C++ for Gaming Development	3
IMT	235	Flash Actionscripting	3
MTH	221	Concepts of Calculus	3
SPH	122	Inter-group Communications	3
			18
<b>Semester IV</b>			
ACC	130	Business Law and Ethics	3
ECA	227	Assembly Language	3
ECA	239	Advanced Java Programming for Software Engineering	3
ECA	240	Game Programming for Devices	3
ECA	241	Advanced Game Programming	3
IMT	125	Graphic Arts Programming in 3D Studio Max I	3
			18

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# Computer Technology

Nearly every facet of our lives today is affected by computers. Positions for personnel with computer skills are growing as organizations of all sizes need help to manage overwhelming amounts of information. Stark State College offers practical education to prepare graduates to fill this need.

This degree program focuses on the use of programming languages, databases and networking to develop business computer applications. Students learn a number of the most-used languages, as well as related system concepts. The student has the flexibility of learning advanced skills in Visual Basic, Cobol, Oracle, SQL Server, as well as economics, accounting and other areas.

The computer technology program is designed to prepare students for positions in the growing information technology field, but also prepares them to make use of the power of computers in any field. Graduates have many employment opportunities, including:

- Analyst
- Application Developer
- Computer Operator
- Consultant
- Database Administrator
- Educational Specialist
- Network Administrator
- Programmer
- System Administrator
- Technical Support
- Training Specialist

The program's newest option is instructional design option which prepares students for the exciting and lucrative field of computer-based training. It broadens each student's ability to teach with the computer. The degree focuses on computer training, industrial training and medical training.

The computer technology program has many strengths which help produce qualified, technically trained computer professionals.

The department's curriculum is continuously updated to keep pace with the advances in the computer field and to provide timely education in a wide range of computer related topics.

In addition, students get hands-on experience in the classroom and in open labs using computer hardware ranging from PCs to mainframe.

Computer technology instructors have practical experience in the field. Their education and industry experience allow them to offer real-life perspectives on the complex world of computer technology.

Stark State's program has been successful in providing students with the practical background and skills needed for employment in the computer field. The computer technology department is helping to produce computer professionals with the skills employers want and need.



A COLLEGE TECH PREP PARTICIPANT

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# Computer Technology

The computer technology program and options are designed to provide students with a comprehensive introduction to the topics of principle importance in business information systems. The program equips them with knowledge useful in supporting an area related to

or involved in the management and delivery of information. Graduates of this program and/or options will be prepared for employment in positions involving the management of, design of, or programming of computer-based information systems.

## SUGGESTED COURSE SEQUENCE

		<b>Credit Hours</b>	
<b>Semester I</b>			
ECA	122	Computer Applications for Technical Professionals	3
ECA	127	Programming Logic and Problem Solving	3
ENG	124	College Composition †	3
MTH	121	College Algebra and TrigonometryI	4
SPH	121	Effective Speaking	3
		<hr/>	16
<b>Semester II</b>			
BUS	121	Business Administration	4
CAP	138	iSeries Operating Environment	3
ECA	228	Internet/Intranet Design and Development	3
ECA	133	Computer User Support	3
EET	141	Introduction to Computer Networking	3
MTH	222	Statistics	3
		<hr/>	19
<b>Semester III</b>			
ACC	121	Principles of Accounting I	4
CAP	139	Introduction to Oracle SQL	3
CAP	223	Microsoft Access Database	3
ECA	229	Microsoft Server Side Scripting	3
EET	131	PC Upgrading and Maintenance	3
IMT	124	Internet Design Tools	3
		<hr/>	19
<b>Semester IV</b>			
ACC	130	Business Law and Ethics	3
ECA	233	Analyzing Software Requirements and Developing Solutions	3
ECA	131	Microsoft Windows 2000 Professional	3
ENG	221	Technical Report Writing	3
IMT	126	Flash Animation and Design	3
		Technical Elective*	3
		<hr/>	18

## 72 TOTAL CREDIT HOURS

- \* Select from Visual Basic for Applications (CAP 224) or Developing Internet Applications on the iSeries (CAP254).  
 † Based on SSCT placement score.

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# Computer Technology

## Client-Server Support Specialist (Help Desk Analyst) Option

As a client-server support specialist, students will design, build and install computer networks; maintain, upgrade and troubleshoot computer systems; use the Internet and design Web pages; and provide technical and help desk support. Client-server support specialists assess the computer needs and problems of businesses and help business owners and managers choose the correct technological solutions. Practical, hands-on training will feature technology that is currently being used in the workplace.

### SUGGESTED COURSE SEQUENCE

			<b>Credit Hours</b>
<b>Semester I</b>			
ECA	122	Computer Applications for Technical Professionals	3
EET	131	PC Upgrading and maintenance	3
EET	141	Introduction to Computer Networking	3
MTH	121	College Algebra and Trigonometry I	4
ENG	124	College Composition †	3
			16
<b>Semester II</b>			
CAP	125	Advanced Microsoft Applications	3
CAP	223	Microsoft Access Database	3
ECA	127	Programming Logic and Problem Solving	3
ECA	133	Computer User Support	3
ECA	132	Help Desk Concepts	3
ECA	131	Microsoft Windows 2000 Professional	3
			18
<b>Semester III</b>			
ACC	130	Business Law and Ethics	3
BUS	121	Business Administration	4
CAP	138	iSeries Operating Environment	3
CAP	257	Microsoft Applications Technical Expert	3
ECA	228	Internet/Intranet Design and Development*	3
ECA	244	Microsoft Windows 2000 Server and Network Infrastructure	3
OAD	238	Microsoft FrontPage*	3
			19
<b>Semester IV</b>			
ACC	121	Principles of Accounting I	4
ECA	248	Citrix Metaframe	3
ECA	246	Administering, Implementing and Designing Microsoft Windows 2000 Directory Services	3
ENG	221	Technical Report Writing	3
SPH	121	Effective Speaking	3
			16

### 69 TOTAL CREDIT HOURS

\* Select 3 hours of electives.

† Based on SSCT placement score.

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# Computer Technology

## Instructional Design Option

The instructional design and development option is directed toward those individuals who wish to apply technology and related software in a classroom or instructional setting. The outlook for those who understand how to use technology in education is excellent. Schools and other organizations are expanding their use

of technology and are employing more professionally-trained workers. Opportunities are also available in the private sector. Typical jobs for graduates in instructional design include: technology coordinator, distance learning specialist, computer-based training developer, online training specialist, staff development specialist and corporate training specialist.

### SUGGESTED COURSE SEQUENCE

		<b>Credit Hours</b>	
<b>Semester I</b>			
ECA	122	Computer Applications for Technical Professionals	3
ECA	127	Programming Logic and Problem Solving	3
ENG	124	College Composition †	3
IMT	122	Graphic Arts Design	3
MTH	121	College Algebra and Trigonometry I	4
			16
<b>Semester II</b>			
BUS	121	Business Administration	4
ECA	228	Internet/Intranet Design and Development	3
IMT	126	Flash Animation and Design	3
IMT	222	Digital Audio/Video Production and Editing I	3
MTH	222	Statistics	3
SPH	121	Effective Speaking	3
			19
<b>Semester III</b>			
ACC	121	Principles of Accounting I	4
ECA	229	Microsoft server Side Scripting	3
ECA	236	Open Source Server-Side Scripting	3
ECA	243	Instructional Illustrations	3
IMT	124	Internet Design Tools	3
IMT	223	Digital Audio/Video Production and Editing II	3
			19
<b>Semester IV</b>			
ACC	130	Business Law and Ethics	3
ECA	223	Java Programming in Computer Science	3
ECA	233	Analyzing Software Requirements and Developing Solutions	3
ENG	221	Technical Report Writing	3
IMT	123	CBT Development with Director	3
IMT	236	Designing for Presentations	3
			18

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# Computer Technology

## Software Developer Option

This option prepares students for a professional career in software development. This aggressive program is a hands-on approach to teach students to design, create and implement the unique software tools that are in demand today. As a software developer, the student will evaluate the project requirements, participate in design meetings, help determine the best solution to a problem or feature and develop detailed design specifications. The program will help prepare students for the required exams to achieve status as a Microsoft Certified Solutions Developer (MCSD).

### SUGGESTED COURSE SEQUENCE

			Credit Hours
<b>Semester I</b>			
ECA	122	Computer Applications for Technical Professionals	3
ECA	127	Programming Logic and Problem Solving	3
ECA	228	Internet/Intranet Design and Development	3
ENG	124	College Composition †	3
MTH	121	College Algebra and Trigonometry I	4
			16
<b>Semester II</b>			
BUS	121	Business Administration	4
CAP	138	iSeries Operating Environment	3
CAP	223	Microsoft Access Database	3
MTH	222	Statistics	3
ECA	223	Java Programming in Computer Science	3
			19
<b>Semester III</b>			
ACC	121	Principles of Accounting I	4
CAP	127	COBOL Programming	3
CAP	139	Introduction to Oracle: SQL	3
ECA	230	Database Design/Interface for Software Developers	3
ECA	229	Microsoft Server Side Scripting	3
ECA	238	Developing Database Applications ...using Microsoft ADO.NET	3
			19
<b>Semester IV</b>			
ACC	130	Business Law and Ethics	3
CAP	141	Oracle PL/SQL Programming	3
CAP	248	Application Development for Oracle Databases	3
ECA	233	Analyzing Software Requirement and Developing Solutions	3
ENG	221	Technical Report Writing	3
SPH	121	Effective Speaking	3
			18

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# Database Administration Technology

## Microsoft SQL Server

The Microsoft SQL Server specialization in the database administration technology prepares students for a technical career in the computer database administration and design field. The program is designed to provide learning experiences that prepare graduates with a firm background of solid, hands-on training, directly related to database administration, design and implementation. The program provides a strong foundation in database

related programming, administration, structure and setup as well as substantial networking skills related to effective database administration. The students will obtain the skills necessary to provide high end, solution-based technical support for existing database implementations as well as for new database development.

### SUGGESTED COURSE SEQUENCE

			<b>Credit Hours</b>
<b>Semester I</b>			
ECA	122	Computer Applications for Technical Professionals	3
EET	131	Personal Computer Upgrading and Maintenance	3
EET	141	Introduction to Computer Networking	3
ENG	124	College Composition †	3
MTH	121	College Algebra and Trigonometry I	4
			16
<b>Semester II</b>			
BUS	121	Business Administration	4
CAP	233	Microsoft Access Database	3
ECA	228	Internet/Intranet Design and Development	3
ECA	131	Microsoft Windows 2000 Professional	3
MTH	222	Statistics	3
SPH	121	Effective Speaking	3
			19
<b>Semester III</b>			
ACC	121	Principles of Accounting I	4
CAP	138	iSeries Operating Environment	3
CAP	139	Introduction to Oracle SQL	3
ECA	229	Microsoft Server Side Scripting	3
ECA	244	Microsoft Windows 2000 Server and Network Infrastructure	3
EET	242	Microsoft SQL Server Administration	3
			19
<b>Semester IV</b>			
ACC	130	Business Law and Ethics	3
CAP	242	Relational Database	3
CAP	255	Programming a Microsoft SQL Server Database with Transact SQL	3
CAP	256	Designing and Implementing OLAP Solution using SQL Server	3
ENG	221	Technical Report Writing	3
			3
			18

### 72 TOTAL CREDIT HOURS

\* Select from Visual Basic for Applications (CAP224), Open Source Server-Side Scripting (ECA326) or Analyzing Software Requirements and Developing Solutions (ECA 233).

† Based on SSCT placement score.

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# Database Administration Technology

## Oracle

Expanding on the broad selection of high-tech programs at Stark State College, the Oracle specialization in the database administration major stresses the process, analytic, design, planning, and programming issues associated with database technology — a key business asset at almost all companies. This program addresses the practical aspects of designing, developing,

implementing, managing, maintaining, and distributing database systems. Database Administrators are typically responsible for system programming, troubleshooting, and system management as well as coordinating software with other IS departments and helping management understand database technology's value to the company's business goals.

### SUGGESTED COURSE SEQUENCE

			Credit Hours
<b>Semester I</b>			
ECA	122	Computer Applications for Technical Professionals	3
ECA	228	Internet/Intranet Design and Development	3
EET	141	Introduction to Computer Networking	3
ENG	124	College Composition †	3
MTH	121	College Algebra and Trigonometry I	4
			16
<b>Semester II</b>			
BUS	121	Business Administration	4
CAP	138	iSeries Operating Environment	3
CAP	139	Introduction to Oracle SQL	3
EET	131	Personal Computer Upgrading and Maintenance	3
MTH	222	Statistics	3
SPH	121	Effective Speaking	3
			19
<b>Semester III</b>			
ACC	121	Principles of Accounting I	4
CAP	141	Oracle PL/SQL Programming Language	3
CAP	142	Oracle Architecture and Administration	3
CAP	221	Relational Database	3
ECA	131	Microsoft Windows 2000 Professional	3
EET	257	UNIX/LINUX Operating Environment	3
			19
<b>Semester IV</b>			
ACC	130	Business Law and Ethics	3
CAP	248	Application Development for Oracle Databases	3
CAP	249	Oracle Performance and Tuning	3
CAP	250	Oracle Backup and Recovery	3
ENG	221	Technical Report Writing	3
			3
			18

### 72 TOTAL CREDIT HOURS

\* Select from Visual Basic for Applications (CAP224), Open Source Server-Side Scripting (ECA326) or Analyzing Software Requirements and Developing Solutions (ECA 233).

† Based on SSCT placement score.

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# E-Commerce Technology

E-commerce technology students focus on the exciting and lucrative field of online Internet design and programming. They learn to develop interactive database-driven Web sites using the latest technology. While everyone else is trying to figure out the new information technology buzzwords, Stark State's e-commerce students will be applying them in the classroom.

## SUGGESTED COURSE SEQUENCE

			<b>Credit Hours</b>
<b>Semester I</b>			
ECA	122	Computer Applications for Technical Professionals	3
ECA	127	Programming Logic and Problem Solving	3
ENG	124	College Composition †	3
BUS	121	Business Administration	4
MTH	121	College Algebra and Trigonometry I	4
			17
<b>Semester II</b>			
ACC	130	Business Law and Ethics	3
ECA	223	Java Programming in Computer Science	3
ECA	228	Internet/Intranet Software Design	3
IMT	126	Flash Animation and Design	3
MKT	121	Principles of Marketing	3
MTH	222	Statistics	3
			18
<b>Semester III</b>			
ECA	225	Applied Interactive Software Development	3
ECA	229	Microsoft Server Side Scripting	3
ECA	230	Database Design/Interface for Software Developers	3
ECA	236	Open Source Server Side Scripting	3
IMT	124	Internet Design Tools	3
MKT	232	Internet Marketing	2
			17
<b>Semester IV</b>			
ECA	234	CFML Tools and Design	3
ECA	237	Advanced Web Services with C#	3
ECA	247	Web Server Scripting	3
IMT	123	CBT Development with Director	3
SPH	122	Inter-group Communications	3
			3
			18

## 70 TOTAL CREDIT HOURS

\* Select 3 hours of electives.

† Based on SSCT placement score.

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# Interactive Media Technology

The interactive media technology program is an adventure into the creative side of computing that allows for a total of four curriculum paths in computer science and engineering technology.

An associate degree in interactive media technology will prepare students to develop feature rich, interactive presentations using some of today's hottest technologies including streaming media, .rm, SMIL, and MIDI. There is currently a tremendous demand for individuals who know how to use multi-media to develop interactive presentations.

## SUGGESTED COURSE SEQUENCE

		<b>Credit Hours</b>	
<b>Semester I</b>			
ECA	122	Computer Applications for Technical Professionals	3
IMT	121	Interactive Media	3
MTH	121	College Algebra and Trigonometry I	4
IMT	122	Graphic Arts Design	3
ECA	127	Programming Logic and Problem Solving	3
ECA	228	Internet/ Intranet Software Design and Development	3
			19
<b>Semester II</b>			
ECA	222	Introduction to C++ Programming	3
IMT	222	Digital Audio/Video Production and Editing I	3
ECA	229	Microsoft Server-Side Scripting	3
ENG	124	College Composition †	3
ACC	130	Business Law and Ethics	3
IMT	126	Flash Animation and Design	3
			18
<b>Semester III</b>			
PHY	121	Physics I	4
IMT	223	Digital Audio/Visual Production and Editing II	3
ECA	226	Visual C++ The Foundation Classes	3
BUS	122	Basic Economics	3
ECA	128	Developing and Implementing Windows-based Applications with MS Visual Basic.Net	3
			16
<b>Semester IV</b>			
SPH	122	Inter-group Communications	3
EET	141	Introduction to Computer Networking	3
ENG	221	Technical Report Writing	3
IMT	226	Internship	1
ECA	225	Applied Interactive Software Development	3
IMT	125	Product Development and Distribution	3
			16

## 69 TOTAL CREDIT HOURS

† Based on SSCT placement score.



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# Interactive Media Technology

## Commercial Music Production and Broadcasting Option

Webcasting, streaming and music production is the focus of this option. Upon completion of this degree the student is able to work in a variety of environments including corporate audio design, trade show design and music composition-based fields.

### SUGGESTED COURSE SEQUENCE

		Credit Hours	
<b>Semester I</b>			
ECA	122	Computer Applications for Technical Professionals	3
IMT	121	Interactive Media	3
MTH	121	College Algebra and Trigonometry I	4
IMT	122	Graphic Arts Design	3
BUS	122	Basic Economics	3
ECA	228	Internet/Intranet Software Design and Development	3
		19	
<b>Semester II</b>			
ECA	127	Programming Logic and Problem Solving	3
ECA	225	Applied Interactive Software Development	3
ENG	124	College Composition †	3
IMT	126	Flash Animation and Design	3
IMT	222	Digital Audio/Video Production and Editing I	3
IMT	229	Theory and Composition	3
		18	
<b>Semester III</b>			
ECA	222	Introduction to C++ Programming	3
IMT	223	Digital Audio/Visual Production and Editing II	3
EET	141	Introduction to Computer Networking	3
IMT	232	Instrumental Practicum	1
PHY	121	Physics I	4
SPH	122	Inter-group Communications	3
		17	
<b>Semester IV</b>			
ACC	130	Business Law and Ethics	3
IMT	230	Webcasting	3
ENG	221	Technical Report Writing	3
IMT	225	Production Development and Distribution	3
IMT	226	Internship	1
IMT	231	Programming MIDI Using Software Languages	3
		16	

### 70 TOTAL CREDIT HOURS

† Based on SSCT placement score.



A COLLEGE TECH PREP PARTICIPANT

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# Interactive Media Technology

## Computer Graphics and 3D Animation Option

Stark State offers a graphic arts design option which prepares students to develop three-dimensional graphics for the Internet, print media and animation-based projects. The focus of this option is the mastery of the Discreet 3D Studio Max™ interface to generate and manipulate still and animated graphics.

### SUGGESTED COURSE SEQUENCE

			<b>Credit Hours</b>
<b>Semester I</b>			
ECA	122	Computer Applications for Technical Professionals	3
IMT	121	Interactive Media	3
MTH	121	College Algebra and Trigonometry I	4
IMT	122	Graphic Arts Design	3
BUS	122	Basic Economics	3
ECA	228	Internet/Intranet Software Design and Development	3
			<hr/>
			19
<b>Semester II</b>			
ACC	130	Business Law and Ethics	3
ECA	127	Programming Logic and Problem Solving	3
ECA	225	Applied Interactive Software Development	3
ENG	124	College Composition †	3
IMT	125	Programming in 3D Studio Max I	3
IMT	222	Digital Audio/Video Production and Editing I	3
			<hr/>
			18
<b>Semester III</b>			
ECA	222	Introduction to C++ Programming	3
IMT	126	Flash Animation and Design	3
IMT	223	Digital Audio/Visual Production and Editing II	3
IMT	227	Programming in 3D Studio Max II	3
PHY	121	Physics I	4
			<hr/>
			16
<b>Semester IV</b>			
EET	141	Introduction to Computer Networking	3
ENG	221	Technical Report Writing	3
IMT	225	Production Development and Distribution	3
IMT	226	Internship	1
IMT	228	3D Design Practicum	3
SPH	122	Inter-group Communications	3
			<hr/>
			16

### 69 TOTAL CREDIT HOURS

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A COLLEGE TECH PREP PARTICIPANT

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# Interactive Media Technology

## Multimedia Design and Development Option

This option is for the student wishing to utilize a wide range of tools that aid then in creating multimedia-based applications such as marketing tools, corporate “info-disks” and other media presentations.

### SUGGESTED COURSE SEQUENCE

			Credit Hours
<b>Semester I</b>			
ECA	122	Computer Applications for Technical Professionals	3
IMT	121	Interactive Media	3
MTH	121	College Algebra and Trigonometry I	4
IMT	122	Graphic Arts Design	3
BUS	121	Basic Administration	4
ECA	228	Internet/Intranet Software Design and Development	3
			20
<b>Semester II</b>			
ACC	130	Business Law and Ethics	3
ECA	127	Programming Logic and Problem Solving	3
ENG	124	College Composition †	3
IMT	126	Flash Animation and Design	3
IMT	222	Digital Audio/Video Production and Editing I	3
MKT	121	Principles of Marketing	3
			18
<b>Semester III</b>			
ECA	222	Introduction to C++ Programming	3
ECA	229	Microsoft Server Side Scripting	3
IMT	223	Digital Audio/Visual Production and Editing II	3
IMT	128	Hypermedia Tools	3
PHY	121	Physics I	4
			16
<b>Semester IV</b>			
ENG	221	Technical Report Writing	3
IMT	123	CBT Development with Director	3
IMT	225	Production Development and Distribution	3
IMT	226	Internship	1
IMT	236	Designing for Presentations	3
SPH	122	Inter-group Communications	3
			16

### 70 TOTAL CREDIT HOURS

† Based on SSCT placement score.



A COLLEGE TECH PREP PARTICIPANT

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# Information Technologies

## Career Enhancement Programs\*

Stark State College recognizes that not all students will seek an associate's degree. Students might need to develop specific sets of skills to qualify for or improve performance in a given career setting. In response to this need, Stark State has developed "career enhancement" programs which document a student's proficiency in a variety of knowledge areas. The following series of courses are offered to non-degree seeking individuals desiring an opportunity to gain or improve marketable skills.

### Computer Science and Engineering Technology

**C++ Certificate** Introduction to C++ Programming (ECA222)  
Visual C++ The Foundation Classes (ECA226)  
Software Engineering Design and Development with COM (ECA224)

**Java Programming Certificate** Java Programming in Computer Science (ECA223)  
Database Design/Interface for Software Developers (ECA230)  
Advanced Java Programming for Software Engineering Applications (ECA239)

**Visual Basic Certificate** Visual Basic for Applications (CAP224)  
Developing & Implementing Windows Based Applications w/Microsoft Visual Basic.NET (ECA128)  
Developing Database Applications using Microsoft ADO.NET (ECA238)

### Interactive Media Technology

**Interactive Media Certificate** Digital Audio/Video Production and Editing I (IMT222)  
Digital Audio/Video Production and Editing II (IMT223)  
Interactive Media (IMT121)  
Graphic Arts Design (IMT122)  
Product Development and Distribution (IMT225)  
Internship (IMT226)

### Computer Technology

**Instructional Design Certificate** Instructional Illustrations (ECA243)  
Instructional Design with Authorware (ECA242)  
CBT Development with Director (IMT123)  
Designing for Presentations (IMT236)  
Flash Animation and Design (IMT126)  
Internet Design Tools (IMT124)

These courses are offered on a continuing basis at our campus location. We welcome inquiries from companies that may wish to investigate the possibility of offering them on-site at company locations.

Students enrolling in an associate degree program may apply these courses toward the degree if it is in the same area of study. Application for the "career enhancement" program should be made to the appropriate department head or academic dean.

### Database Administration Technology

**Database Administrator Oracle** Introduction to Oracle: SQL (CAP139)  
Oracle PL/SQL Programming Language (CAP141)  
Oracle Architecture and Administration (CAP142)  
Oracle Performance and Tuning (CAP249)  
Oracle Backup and Recovery (CAP250)  
Database Administrator – Introduction to Oracle: SQL (CAP139)

**Microsoft SQL Server** Microsoft Windows 2000 Professional (ECA131)  
Microsoft SQL Server Administration (EET242)  
Programming a MS SQL Server Database with Transact SQL (CAP255)  
Designing & Implementing OLAP Solutions using MS SQL Server (CAP256)

### E-Commerce Technology

**Webmaster Certificate** Internet/Intranet Design and Development (ECA228)  
Applied Interactive Software Development (ECA225)  
Internet Design Tools (IMT124)  
Flash Animation and Design (IMT126)  
Microsoft Server Side Scripting (ECA229)  
Open Source Server Side Scripting (ECA236)  
CFML Tools and Design (ECA234)  
Web Server Scripting (ECA247)

\*These programs offer professional development for those already employed in the field and may also serve as a starting point for those considering the pursuit of a full associate degree program. Existing knowledge or skill base is assumed for certain courses. Absence of same may require prerequisite coursework. Applicants must secure department head or academic dean approval before completing the registration process. Non-degree seeking students may not be eligible for financial aid.

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