Options EHS Introduction to Information Technology	Scope and Sequence

Unit	Lesson	Objectives
Introduction to Information Technology		
	Introduction	
	The Four Areas of Information Technology Employment	
		Evaluate careers in four information technology areas: Information Services and Support, Network Systems, Programming and Software Development, and Interactive Media.
		Compare and contrast job descriptions, working conditions, education, training requirements, salary ranges, industry certifications, and employment outlook for the four areas.
		Describe job requirements for careers and professions in IT.
	Compare and Contrast Careers in IT	
		Compare and contrast careers in computing.
		Identify college majors that require at least one course in computing.
		Describe the variety of occupations and professions within the world of IT and investigate how computing is used in other disciplines.
		Investigate methods for finding websites with career exploration resources, identifying a desired IT career area, and justifying that choice.
		List and describe professional organizations and professional codes in the field of computing.
	Entrepreneurship	
		Demonstrate concepts, processes, and behaviors associated with successful entrepreneurship.
		Analyze how computing is often used in contemporary entrepreneurship.
		Compare and contrast entrepreneurship with working for an employer.
	Summary	
IT and Computer Hardware		

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Unit **Lesson**	**Objectives**
Introduction	
Information Technology	
	Discuss the use of technology in an IT environment.
	Identify and describe some current and emerging computer technology and software used for personal and business tasks.
	Compare and contrast methods for evaluating emerging technologies.
	Explain how IT affects business and society.
Job-Specific Math Skills	
	Define and use common statistical procedures to present and communicate data.
	Solve work-related problems using measurements.
	Select and use correct mathematical processes and tools to solve complex problems.
IT Legal and Ethical Issues	
	Define legal and ethical responsibilities for IT professionals.
	Demonstrate and apply an understanding of IT-related legal and ethical issues.
Wireless IT	
	Explore current global business trends and an IT employee''s role in maintaining productive business.
	Compare and contrast the ways in which emerging wireless tech impacts business globally.
Computing Basics	
	List the basic operating principles of digital computers.
	Explore the basic operating principles of digital computers.
	Analyze the ways major applications have changed the way we work and live.
	List different ways computers are used.

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Unit **Lesson**	**Objectives**
	Explain the idea of a "paperless society" and how computers support that.
The Evolution of the Computer	
	Describe the evolution of the computer and microprocessors.
	Demonstrate an understanding of Moore''s Law as it relates to miniaturization.
	Identify persons with major contributions to the field of computing.
	Describe analog and digital technology, convert between binary and decimal numbers, and define the terms bit and byte.
Hardware Input and Output	
	Define input and output.
	Explain and identify the pieces that make up the architecture of a computer system.
	Describe how the hardware components of a computer interact with one another.
	Understand terms and units used to describe major hardware components.
	Use information about the function, type, capabilities, size and speed of CPUs, motherboards, RAM, and hard drives to compare two computers.
Sound, Graphics, and Network Cards	
	Explain the functions and characteristics of sound cards, graphics cards, and network cards.
	Explain the need for peripherals.
	Demonstrate proficiency with peripherals.
	Demonstrate proficiency in the use of a mouse and keyboard.
System Maintenance	
	Define system maintenance and preventive measures.
	Describe consequences of not taking preventive measures.

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Unit	**Lesson**	**Objectives**
		Install and configure hardware in a computer system.
		Troubleshoot problems with computer peripherals and office equipment.
	Upgrade Computer Hardware	
		Investigate different (hardware) upgrade considerations.
		Choose computers for specific purposes based on their commercial descriptions.
		Given a scenario, make recommendations to improve a computer system.
		Define the process of planning upgrades and changeovers, and demonstrate knowledge of the process of planning upgrades and changeovers.
		List the steps in setting up a new computer.
	Summary	
	Unit Test	
Operating Systems and Application Software		
	Introduction	
	Software Overview	
		Identify classes of system and application software and differentiate between them.
		Compare and contrast the use of various software applications and their appropriate use.
		Identify open source, free, and proprietary licenses, as well as their benefits and drawbacks.
		Identify new and emerging classes of software, and demonstrate knowledge of the process of upgrading and changing software applications.
	Software Development	
		Describe the development of software applications and the software development process.
		Identify and define features common to most software applications.
		Identify basic problems with application software.

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	Computer Operating Systems	
		Examine major operating system fundamentals and components.
		Identify persons with major contributions to operating systems.
		Examine the history and purpose of various OSes (such as DOS, Windows, OS X, iOS/Android).
		Compare and contrast the differences among current Windows, Unix, and Macintosh operating systems.
	File Management	
		Demonstrate an understanding of file extensions and the purpose of file types across software products.
		Match file extensions with their associated programs by differentiating among file types.
		Demonstrate a working knowledge of standard file formats and identify file naming conventions in different operating systems.
		Demonstrate proficiency with proper file management techniques and structure.
		Identify the hierarchy of files and folders and find files and folders using specific file paths.
	File Management Tools	
		Demonstrate proper use of system management tools.
		Demonstrate using file protection and security.
		Use file management tools to create folders and select, move, copy, cut, delete, rename, and sort files.
		Practice viewing files in different ways (by icon, name, type, size, and date).
		Use the trash or recycling features to safely manage file deletions and restore files.
	Web Browsers	
		Examine what a web browser is, what it does (render web pages), and how it does this.
		List and examine the major/most popular web browsers and their features.
		Examine how URLs and associated URL protocols work.

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Unit **Lesson**	**Objectives**
	Dissect and identify the various components of a URL (in other words, explain how to read and understand a URL).
Summary	
Unit Test	
Networks and the Internet	
Introduction	
Network Basics	
	Describe what a network is.
	Identify the role of servers and clients on a network.
	Explain hierarchical addressing schemes.
	Explain the benefits of a network.
	Demonstrate knowledge of how data is passed in packets, and ways to deal with network failure.
Evolution of Networks	
	Investigate important events in the evolution of networks.
	Analyze current trends and developments in networking.
	Investigate the most common types of networks and differentiate between them.
	Identify different types of networks and how they work.
	Investigate networking terminology.
Wireless Networks	
	Investigate and analyze trends related to networking and wireless technology.
	Describe how computers connect to wired and wireless networks.
	Compare and contrast wired and wireless networks.

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Network Administration	
	Demonstrate basic understanding of network administration by identifying the relationship between computer networks and other commuications networks.
	Describe communications hardware and software used in networking.
	Identify and describe communications and networking systems used in workplace environments.
	Identify and describe the functions of network operating systems.
	Explain and apply troubleshooting techniques and strategies for fixing network connectivity issues.
History of the Internet	
	Trace and outline the history and development of the Internet.
	Trace the future of the Internet.
	Explain the Internet''s effect on computing and society.
	Identify and examine persons with major contributions to the Internet.
Ethical Issues on the Internet	
	Demonstrate an understanding of how to use the Internet efficiently for work.
	Analyze ethical issues and problems associated with computers and information systems.
	Describe and analyze copyright laws related to file sharing and Internet regulatory control.
	Explain and predict the consequences of software piracy on developers and the role of relevant enforcement organizations in software piracy.
	Compare and contrast the pros and cons of hacking and cracking.
Copyright and IP	
	Explain intellectual property and examine the consequences of plagiarism.
	Identify adherence to copyright rules and regulations and differentiate between copyright and trademarks.
	Identify and explain the effects of technology crimes.

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		Examine the emergence of e-commerce and e-government and how it relates to intellectual property and describe the function of a non-disclosure agreement.
		Explain the potential impact of e-commerce and e-government on business and society.
	Risks on the Internet	
		Examine issues concerning Internet security (including computer viruses and spam) and online predators.
		Explain and identify the risks/dangers of working on an insecured network/ or in an unsecured environment.
		Analyze the benefits and risks of networked computing.
		Identify the rists of posting personal and work information on the Internet as it relates to identity theft (and other potential dangers).
	Improving Network Security	
		Identify network security issues and describe methods that help protect against security attacks.
		Compare and contrast anti-virus software.
		Explain the purpose of a firewall.
		Explain the purpose of spyware/adware and describe methods for protecting against it.
		Explain how and by whom encryption is used on a daily basis.
	Summary	
	Unit Test	
HTML and the Web		
	Introduction	
	Web Pages	
		Identify and describe web terminology and the elements of a web page.
		Identify and describe design principles related to web page design.
		Identify individual web page layouts and content.

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Unit	**Lesson**	**Objectives**
		Identify and describe types and styles of typeface used for web publications, including serif and sans serif, and analyze reasons for using one typeface instead of another.
		Identify and explain the terminology and need for interactive media and web-based applications, including things like Adobe Flash and Ajax.
	Investigate Web Design	
		Analyze design elements of professional web sites by evaluating the use of theme and navigational links.
		Analyze and develop an awareness of acceptable and excellent web page design.
		Identify and critique the layout, navigation, and accessibility of a web site based on its purpose.
	HTML Basics	
		Identify and describe the purpose of basic HTML.
		Analyze basic HTML.
	Create a Web Page	
		Identify the terminology associated with web page editing software and its functions.
		Create a Web page with links, graphics, text with basic HTML tags, bulleted lists, and an email address.
		Write HTML code using an HTML editor and then render it using a Web browser.
	Use CSS to Design a Web Page	
		Learn about CSS and why it"s used, and then apply basic CSS to style HTML.
		Use CSS to express the design of a website.
		Demonstrate the ability to use various web development software programs.
		Compare and contrast creating a web page manually versus using a WYSIWYG editor.
	Add Images to a Web Page	
		Create a web page with images.
		Examine color theory as it relates to web page design and legibility.

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Unit Lesson	**Objectives**
	Apply color theory to choose strong color choices for a web page''s background and text color.
	Use CSS to change the text and background color and appearance of a web page.
Publish to the Web	
	Identify a website host for publishing a website.
	Investigate how to determine the preferred procedures for posting/publishing a website using the selected website host.
	Investigate how to make decisions about how often the site should be updated, who will change the content, and who will maintain the site.
	List steps necessary to take in order to publish a website to the Internet.
	Demonstrate knowledge about publishing to the Internet.
Summary	
Unit Test	
General Workplace Skills	
Introduction	
Communication Skills	
	Identify how to employ effective verbal and nonverbal communication skills.
	Demonstrate communicating effectively to customers, coworkers, and supervisors with appropriate speaking and listening skills and nonverbal communication skills.
	Define customer-service skills: in-person.
	Define customer-service skills: telephone.
	Demonstrate techniques for determining and addressing customer needs using in-person, telephone, and email customer service skills.
Positive Personal Qualities in the Workplace	

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	Identify and demonstrate positive personal qualities, such as flexibility, open-mindedness, showing initiative, and being willing to learn new concepts and skills.
	Demonstrate recognizing a professional appearance for the workplace.
	Examine critical thinking and problem-solving skills, and demonstrate creativity and resourcefulness.
	Organize ideas and then create IT-related oral and written messages to communicate those ideas.
Positive Work Ethic	
	Demonstrate awareness of business ethics, workplace rules, regulations, policies, procedures, and processes.
	Demonstrate an understanding of the work ethics, behavior, and legal responsibilities employees commit to in the workplace.
	Demonstrate a positive work ethic, having a positive attitude toward taking direction, and motivation toward accomplishing tasks.
Teamwork and Collaboration	
	Demonstrate initiative, courtesy, loyalty, honesty, cooperation, and punctuality as a team member.
	Demonstrate teamwork.
	Formulate a plan for collaborating to solve an IT problem.
	Demonstrate leadership skills in a team.
	Apply leadership and teamwork skills to accomplish goals.
Project Management Skills	
	Demonstrate planning, time-management, storyboarding, and project management skills.
	Demonstrate an awareness of project management concepts and tools.
	Demonstrate how to work efficiently by using time, task, and resource-management skills.
Parts of an Email Message	
	Breakdown email purposes, capabilities and functions.

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	Identify components of an email message, such as address, to, from, subject, and body.
	Identify when to use different email options, such as cc, bcc, email attachments, and forwarding.
	Demonstrate an awareness of how to use an email program''s address book.
Appropriate Email Use	
	Identify the appropriate use of e-mail and common problems associated with e-mail.
	Demonstrate e-mail etiquette.
	Describe principles of e-mail and Internet etiquette.
	Identify when to include (quote) from an original e-mail message in a response.
	Respond to and utlize information derived from e-mail to solve business problems and complete business tasks.
Summary	
Cumulative Exam	
Cumulative Exam Review	
Cumulative Exam	