

Options EHS Introduction to Information Technology A 2020		Scope and Sequence
Unit	Lesson	Objectives
<b>Introduction to Information Technology</b>		
	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.
	Assessment	Categorize personal skills and aptitudes.

Options EHS Introduction to Information Technology A 2020		Scope and Sequence
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		Analyze personal skills and aptitudes that relate to IT careers.
		Differentiate between the use of specific personal assessment tools in identifying personal strengths and weaknesses.
	Lifelong Learning Skills	
		Demonstrate an understanding of education and career development as lifelong learning process and techniques for acquiring new (IT) industry-related knowledge and improving professional skills.
		Demonstrate techniques for promoting personal advancement and seeking education and other experiences that enhance personal growth.
		Create, refine, and implement a plan for personal growth and skill development related to IT careers.
		Define a work-based learning experience in an IT environment, and describe the purpose and benefits of a work-based learning environment.
		Identify steps for seeking a promotion.
	Create a Professional Portfolio	
		Create and maintain a career portfolio.
		Demonstrate preparing for a job search and interview.
		Create a cover letter, resume, and job application.
	Summary	
	Unit Test	
IT and Computer Hardware		
	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.

**Unit Lesson****Objectives**

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.

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

**Unit Lesson****Objectives**

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.

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.

**Unit Lesson****Objectives**

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.

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

**Unit Lesson****Objectives**

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.

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**

**Unit Lesson****Objectives**

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.

## Network Administration

Demonstrate basic understanding of network administration by identifying the relationship between computer networks and other communications 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.

Unit	Lesson	Objectives
	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.
	Ethical Issues on the Internet	Identify and examine persons with major contributions to 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.
	Copyright and IP	Compare and contrast the pros and cons of hacking and cracking.
		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.
		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.
	Search on the Internet	Explain the potential impact of e-commerce and e-government on business and society.
		Identify criteria for conducting searches on the Internet. , including analyzing whether an online source is reputable or not.
		Define ethical use of Internet/online resources using citations (both formal and informal).



**Unit Lesson****Objectives**

Examine the ethical and unethical use of Internet and online sources.

Demonstrate citing a source.

## 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 insecure network/ or in an unsecured environment.

Analyze the benefits and risks of networked computing.

Identify the risks 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.

**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.

**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

**Unit Lesson****Objectives**

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.

## Diversity in the Workplace

Identify gender and diversity issues in computing and IT.

Analyze diversity awareness.

Explain the importance of conflict resolution skills and being able to accept constructive criticism.

Demonstrate an ability to accept constructive criticism.

## 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.

## Assessment in the Workplace

**Unit Lesson****Objectives**

Understand best practices for assessing personal, peer, and group performance.

Identify and implement strategies for improving performance, such as organizational skills, note taking, making outlines, reasoning skills, problem solving skills, and decision making skills.

Develop criteria for assessing the effectiveness of products and processes in business (project management).

**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.

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 utilize information derived from e-mail to solve business problems and complete business tasks.

**Organizations**

Explore and analyze the structures and work cultures of different organizations.

Examine how an organization's strategic and operational plans are formulated, including how it uses planning tools.

**Unit Lesson****Objectives**

Examine the impact of an organization's management structure and culture on operations.

Examine processes for accomplishing an organization's goals using available resources.

## Organizational Responsibilities

Analyze organizational responsibilities as they relate to labor issues, worker rights and responsibilities, wages, benefits, and working conditions, including workers' health and safety.

Demonstrate an understanding of how safety, health, and environmental management systems are employed in a corporation.

Examine an industry/organization's responsibilities for its workers' health and safety.

Examine laws, regulations, and practices affecting workers' health and safety in an industry.

Demonstrate an understanding of the importance of following safety guidelines.

## Summary

## Unit Test

**Cumulative Exam**

## Cumulative Exam Review

## Cumulative Exam