MIS 2223 Introduction to Computers

Topic Coverage

Digital Literacy

• Differentiate among laptops, tablets, and servers
• Describe the purpose and uses of smartphones, digital cameras, portable media players, e-book readers, and game devices
• Describe the relationship between data and information
• Briefly explain various input options
• Differentiate the Internet from the web, and describe the relationship among the web, webpages, websites, and web servers
• Explain the purpose of a browser, a search engine, and an online social network
• Briefly describe digital security risks associated with viruses and other malware, privacy, your health, and the environment
• Differentiate between an operating system and applications
• Differentiate between wired and wireless technologies, and identify reasons individuals and businesses use networks
• Discuss how society uses technology in education, retail, finance, entertainment, health care, travel, government, science, publishing, and manufacturing
• Identify technology used by home users, small office/home office users, mobile users, power users, and enterprise users

The Internet

• Discuss the evolution of the Internet
• Briefly describe various broadband Internet connections
• Describe the purpose of an IP address and its relationship to a domain name
• Describe features of browsers and identify the components of a web address
• Describe ways to enter effective search text
• Explain benefits and risks of using social networking sites
• Describe uses of various types of websites
• Identify and briefly describe the steps required for web publishing
• Explain how the web uses graphics, animation, audio, video, and virtual reality
• Explain how email, email lists, instant messaging, chat rooms, discussion forums, VoIP, and FTP work
• Identify the rules of netiquette

Computers and Mobile Devices

• Describe the characteristics and uses of desktops, laptops, tablets, and handheld computers
• Describe the characteristics and types of servers
• Differentiate among POS terminals, ATMs, and self-service kiosks
• Describe cloud computing and identify its uses
• Describe the characteristics and uses of smartphones, digital cameras, portable media players, and e-book readers
• Describe the characteristics of and ways to interact with game devices
• Identify uses of embedded computers
• Differentiate a port from a connector, identify various ports and connectors, and differentiate among Bluetooth, Wi-Fi, and NFC wireless device connections
• Identify safeguards against hardware theft and vandalism and hardware failure
• Discuss ways to prevent health-related injuries and disorders caused from technology use, and describe ways to design a workplace ergonomically
**Programs and Apps**
- Identify the general categories of programs and apps
- Describe how an operating system interacts with applications and hardware
- Differentiate among the ways you can acquire programs and apps
- Identify key features of productivity applications
- Identify the key features of graphics and multimedia applications
- Identify the uses of personal interest applications
- Identify the purpose of software used in communications
- Identify the key features of security tools
- Identify the key features of file and disk management tools

**Digital Safety and Security**
- Define the term, digital security risks, and briefly describe the types of cybercriminals
- Describe various types of Internet and network attacks, and explain ways to safeguard against these attacks
- Discuss techniques to prevent unauthorized computer access and use
- Explain the ways that software manufacturers protect against software piracy
- Discuss how encryption, digital signatures, and digital certificates work
- Identify safeguards against hardware theft, vandalism, and failure
- Explain the options available for backing up
- Identify risks and safeguards associated with wireless communications
- Recognize issues related to information accuracy, intellectual property rights, codes of conduct, and green computing
- Discuss issues surrounding information privacy

**Inside Computers and Mobile Devices**
- Describe the various computer and mobile device cases and the contents they protect
- Describe multi-core processors the components of a processor, and the four steps in a machine cycle
- Identify characteristics of various personal computer processors on the market today, and describe the ways processors are cooled
- Explain the advantages and services of cloud computing
- Define a bit, and describe how a series of bits represents data
- Explain how program and application instructions transfer in and out of memory
- Differentiate among the various types of memory
- Describe the purpose of adapter cards, USB adapters, and ExpressCard modules
- Explain the function of a bus
- Explain the purpose of a power supply and batteries
- Understand how to care for computers and mobile devices

**Input and Output**
- Differentiate among various types of keyboards: standard, compact, on-screen, virtual, ergonomic, gaming, and wireless
- Describe characteristics of various pointing devices: mouse, touchpad, pointing stick, and trackball
- Describe various uses of touch screens
- Describe various types of pen input: stylus, digital pen, and graphics tablet
- Describe various uses of motion input, voice input, and video input
- Differentiate among various scanners and reading devices
- Explain the characteristics of various displays
- Summarize the various types of printers
- Identify the purpose and features of speakers, headphones and earbuds, data projectors, interactive whiteboards, and force-feedback game controllers and tactile output
- Identify various assistive technology input and output methods
Digital Storage

- Differentiate between storage and memory
- Describe the characteristics of internal hard disks
- Identify uses of external hard disks and RAID
- Describe the benefits of solid-state drives
- Differentiate among various types of memory cards and USB flash drives
- Discuss the benefits and uses of cloud storage
- Describe characteristics of and differentiate among types of optical discs
- Explain types of enterprise storage
- Identify uses of magnetic stripe cards, smart cards, RFID tags, and microfilm and microfiche

Operating Systems

- Define an operating system
- Describe the start-up process and shutdown options on computers and mobile devices
- Explain how an operating system provides a user interface, manages programs, manages memory, and coordinates tasks
- Describe how an operating system enables users to configure devices, establish an Internet connection, and monitor performance
- Identify file management and other tools included with an operating system, along with ways to update operating system software
- Explain how an operating system enables users to control a network or administer security
- Summarize the features of several desktop operating systems
- Briefly describe various server operating systems
- Summarize the features and uses of several mobile operating systems

Communications and Networks

- Discuss the purpose of the components required for successful communications and identify various sending and receiving devices
- Differentiate among LANs, MANs, WANs, and PANs
- Differentiate between client/server and peer-to-peer networks
- Differentiate among a star network, bus network, and ring network
- Describe the various network communications standards and protocols
- Explain the purpose of communications software
- Describe various types of communications lines
- Describe commonly used communications devices
- Discuss different ways to set up and configure a home network
- Differentiate among physical transmission media
- Differentiate among wireless transmission media

Information and Data Management

- Define the term, database, and explain how a database interacts with data and information
- Define the term, data integrity, and describe the qualities of valuable information
- Discuss the terms character, field, record, and file
- Describe file maintenance techniques and validation techniques
- Differentiate between the file processing approach and the database approach
- Discuss the functions common to most database management systems
- Describe characteristics of relational, object-oriented, and multidimensional databases
- Discuss web databases
- Identify database design guidelines and understand the responsibilities of database analysts and administrators
- Describe various information systems used in an enterprise
Information Systems and Program Development

- Define system development and list the system development phases
- Identify the guidelines for system development
- Discuss the importance of project management, feasibility assessment, documentation, and data and information gathering techniques
- Discuss the purpose of and tasks conducted in each system development phase
- Differentiate between low-level languages and procedural languages
- Identify the benefits of object-oriented programming languages and application development tools
- List other programming languages and application development tools
- Describe various ways to develop webpages