

**Mississippi Department of Education
Office of Curriculum and Instruction**

Course Title: **Introduction to Information Technology**

Grade Level: **9, 10, 11, 12**

Carnegie Unit: **1**

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Introduction to Information Technology (110600)

Unit 1: Orientation to Information Technology

| Competencies and Suggested Objectives | |
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| 1. | Research educational, occupational, and leadership opportunities in information technology. ^{DOK2} <ol style="list-style-type: none">Review student rules and regulations for the local school.Compare and contrast local program policies, procedures, and expectations to industry policies, procedures, and expectations.Identify and describe leadership opportunities available from student youth organizations in the school and community.Preview the school technology acceptable use policy. |
| 2. | Identify, discuss, and apply safety procedures in the computer classroom and lab. ^{DOK2, SF2, SF4} <ol style="list-style-type: none">Discuss the proper classroom and personal safety procedures to include fire extinguishers, electrical, clothing, jewelry, eye protection, and so forth.Care for and use computer hardware correctly.Handle DVDs and CDs correctly.Identify potential health hazards when working on computer equipment. |
| 3. | Publish and communicate with peers, experts, and other audiences using technology. ^{DOK2, ND1} <ol style="list-style-type: none">Research safety issues related to telecommunications and the Internet Academic Standards, if applicable.Develop personal safety guidelines that will be used when using telecommunications and the Internet.Describe legal implications related to the computer industry to include software copyright issues, software licensing, and Internet ethics and policies.Use browsers, search engines, and e-mail.Post information to discussion boards, blogs, wikis, and social media.Use an appropriate, supervised chat room to communicate with peers, experts, and other approved audiences.Research, create, and present a presentation/project on emerging technologies, practices, trends, and issues associated with information technology. |

Unit 2: Technology and Computer Hardware Basics

| Competencies and Suggested Objectives | |
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| 1. Define basic IT terminology related to computer hardware and networking. ^{DOK1, SF1} | |
| a. Define terminology related to the Central Processing Unit including the following: single/dual/quad core, Intel/cell/AMD based, GHz vs. MHz, processor cache size, and bus speed. CE5,CE6,CE7 | |
| b. Define terminology related to Random Access Memory including the following: DDR, DDR2, DDR3; and DIMMs vs. SODIMMs. CE5,CE6,CE7 | |
| c. Define terminology related to hard drives including the following: RPMs; cache size; flash based vs. traditional hard drives; SATA, SCSI, and IDE; internal vs. external; and local vs. network shares ed. CE5,CE6,CE7 | |
| d. Define terminology related to networking including the following: | |
| i. Wireless networking: 802.11 a/b/g/n, Bluetooth, RF (radio frequency), interference, WAP (wireless access point), SSID, and wireless router. | |
| ii. Ethernet technologies: CAT5 connections and cables, home plug (Ethernet over Power), broadband router, DSL and cable modems, standard vs. crossover cables, and auto-negotiating (speed and duplex). | |
| iii. Internet | |
| iv. Protocols: HTTP vs. HTTPs, FTP, SSL, POP3, SMTP, IMAP, DNS, DHCP, and TCP/IP (IPv4 address vs. IPv6 address). | |
| v. Browser features: plug-ins, customization (text sizes, text styles, etc.), anti-phishing features, ActiveX and JAVA, cookies, and Internet cache. | |
| 2. Demonstrate the proper use of computing devices. ^{DOK2, SF1} | |
| a. Demonstrate the proper use of monitors including adjusting monitor settings. | |
| b. Demonstrate the proper use of a desktop. | |
| c. Demonstrate the proper use of a server. | |
| d. Demonstrate the proper use of portable devices including: laptop, PDA, Smartphone, and netbook. | |
| 3. Identify and describe the characteristics and functions of internal and external storage devices. ^{DOK1, SF1} | |
| a. Identify and describe CD/CD-RW drives. | |
| b. Identify and describe DVD/DVD-RW drives. | |
| c. Identify and describe Blu-Ray disk drives. | |
| d. Identify and describe USB storage including solid state and magnetic disk technologies. | |
| e. Identify and describe multi-card reader and writers. | |
| f. Identify and describe hard drives. | |
| g. Identify and describe mobile media devices including MP3 players and PDAs. | |
| 4. Identify and describe the characteristics (including cables, hardware), and functions of peripheral devices. ^{DOK1, SF1} | |
| a. Identify and describe digital cameras. | |
| b. Identify and describe Web cameras. | |
| c. Identify and describe speakers. | |
| d. Identify and describe tuners. | |

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| <ul style="list-style-type: none"> e. Identify and describe microphones. f. Identify and describe printers and scanners. |
| <p>5. Identify and describe the characteristics and functions of input devices. ^{DOK1, SF1}</p> <ul style="list-style-type: none"> a. Identify and describe keyboards. b. Identify and describe a computer's mouse. c. Identify and describe tablet touch screens. d. Identify and describe numeric keypads. e. Identify and describe gamepads. |
| <p>6. Identify the risks associated with upgrading the following technologies and equipment. ^{DOK1, SF1,SF3,SF4}</p> <ul style="list-style-type: none"> a. Identify the risks associated with upgrading operating systems (open source and commercial) including the following: compatibility issues, upgrade issues, and data loss. b. Identify the risks associated with upgrading PC speed/storage capability including the following: compatibility issues, upgrade issues, bus differences, and hardware failure. c. Identify the risks associated with upgrading applications including minimum requirements and compatibility issues. d. Identify the risks associated with upgrading bandwidth including the following: VoIP, streaming, and Web delivered services. e. Identify the risks associated with automatic application and operating system updates including the following: risks of automatic updates, risks of not using automatic updates, and risks of not using manufacturer Websites |
| <p>7. Demonstrate the ability to set up a basic PC workstation. ^{DOK2, SF1,SF3,}</p> <ul style="list-style-type: none"> a. Demonstrate the ability to set up various connector types including the following: DVI, VGA, and HDMI; USB and PS2; FireWire; Bluetooth and wireless; serial; network connectors; PCMCIA; ExpressCard; 3.5mm audio jack; and power connectors. b. Demonstrate the ability to set up various monitor types to including CRT and LCD. c. Demonstrate the ability to set up a computer including the following: desktop, tower, laptop, and custom cases. d. Demonstrate the ability to set up various keyboards to include keyboard layout and regionalization. e. Demonstrate the ability to set up a mouse including the following: touchpad, optical, and trackball. f. Demonstrate the ability to set up various printers including the following: USB, wireless, and networked. g. Demonstrate the ability to set up PC voltage and power requirements. h. Demonstrate the ability to turn on and use the PC and peripherals |

Unit 3: Compatibility Issues

| Competencies and Suggested Objectives | |
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| 1. Identify and describe basic compatibility issues and possible solutions. <small>DOK2, SF1,SF2</small> | <ul style="list-style-type: none">a. Discuss compatibility issues involving Processor performance.b. Discuss compatibility issues involving RAM memory.c. Discuss compatibility issues involving USB (1.1, 2.0, 3.0).d. Discuss compatibility issues involving PS/2.e. Discuss compatibility issues involving Ethernet.f. Discuss compatibility issues involving Wireless networks. |
| 2. Explain how common operational problems are often caused by hardware. <small>DOK2, SF1,SF2</small> | <ul style="list-style-type: none">a. Discuss what causes a critical error message or crash.b. Explain the causes of a System lockup (freeze).c. Discuss why an application will not start or load.d. Explain the major causes of not being able to logon to a network.e. Discuss the causes of hardware devices not functioning due to Driver/hardware compatibility.f. Explain what causes input devices not to function proper. |
| 3. Demonstrate the ability to minimize risks. <small>DOK2, SF1,SF4</small> | <ul style="list-style-type: none">a. Identify ways to minimize risks of data loss by using various means of backup solutions.b. Identify ways to minimize risks of loss of service through use of firewalls, intrusion detections systems, honey pots, and so forth.c. Discuss the ability to minimize risks of damage to equipment by preventing Electro Static Discharge (ESD) and fire hazards. |

References

- Andrews, J. (2006). *A+ guide to managing and maintaining your PC, comprehensive* (6th ed.). Boston, MA: Thomson Course Technology.
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