

Computer Service Technology 3 Course Code 5322 STUDENT PROFILE

DIRECTIONS:

Evaluate the student using the applicable rating scales below and check the appropriate box to indicate the degree of competency. The ratings 3, 2, 1, and N are not intended to represent the traditional school grading system of A, B, C, and D. The description associated with each of the ratings focuses on the level of student performance or cognition for each of the competencies listed below.

PERFORMANCE RATING

- 3 - Skilled--can perform task independently with no supervision
 2 - Moderately skilled--can perform task completely with limited supervision
 1 - Limitedly skilled--requires instruction and close supervision
 N - No exposure--has no experience or knowledge of this task

COGNITIVE RATING

- 3 - Knowledgeable--can apply the concept to solve problems
 2 - Moderately knowledgeable--understands the concept
 1 - Limitedly knowledgeable--requires additional instruction
 N - No exposure--has not received instruction in this area

A. Safety and Ethics

- | | | | | |
|-----|-----|-----|-----|--|
| 3 | 2 | 1 | N | |
| ___ | ___ | ___ | ___ | 1. Identify major causes of work-related accidents in offices. |
| ___ | ___ | ___ | ___ | 2. Describe the threats to a computer network, methods of avoiding attacks, and options in dealing with virus attacks. |
| ___ | ___ | ___ | ___ | 3. Identify potential abuse and unethical uses of computers and networks. |
| ___ | ___ | ___ | ___ | 4. Explain the consequences of illegal, social, and unethical uses of information technologies (e.g., piracy; illegal downloading; licensing infringement; and inappropriate uses of software, hardware, and mobile devices). |
| ___ | ___ | ___ | ___ | 5. Differentiate between freeware, shareware, and public domain software copyrights. |
| ___ | ___ | ___ | ___ | 6. Discuss computer crimes, terms of use, and legal issues such as copyright laws, fair use laws, and ethics pertaining to scanned and downloaded clip art images, photographs, documents, video, recorded sounds and music, trademarks, and other elements for use in Web publications. |
| ___ | ___ | ___ | ___ | 7. Identify netiquette including the use of e-mail, social networking, blogs, texting, and chatting. |

- | | | | | |
|-----|-----|-----|-----|---|
| ___ | ___ | ___ | ___ | 8. Describe ethical and legal practices in business professions such as safeguarding the confidentiality of business-related information. |
|-----|-----|-----|-----|---|

B. Employability Skills

- | | | | | |
|-----|-----|-----|-----|--|
| 3 | 2 | 1 | N | |
| ___ | ___ | ___ | ___ | 1. Identify positive work practices (e.g., appropriate dress code for the workplace, personal grooming, punctuality, time management, organization). |
| ___ | ___ | ___ | ___ | 2. Demonstrate positive interpersonal skills (e.g., communication, respect, teamwork). |

C. Student Organizations

- | | | | | |
|-----|-----|-----|-----|---|
| 3 | 2 | 1 | N | |
| ___ | ___ | ___ | ___ | 1. Explain how related student organizations are integral parts of career and technology education courses. |
| ___ | ___ | ___ | ___ | 2. Explain the goals and objectives of related student organizations. |
| ___ | ___ | ___ | ___ | 3. List opportunities available to students through participation in related student organization conferences/competitions, |

community service, philanthropy, and other activities.

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|-----|-----|-----|-----|---|
| ___ | ___ | ___ | ___ | 4. Explain how participation in career and technology education student organizations can promote lifelong responsibility for community service and professional development. |
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D. Personal Computer Components

- | | | | | |
|-----|-----|-----|-----|---|
| 3 | 2 | 1 | N | |
| ___ | ___ | ___ | ___ | 1. Identify the fundamental principles of using personal computers. |
| | | | | a) Identify the names, purposes and characteristics of storage devices |
| | | | | b) Identify the names, purposes and characteristics of motherboards. |
| ___ | ___ | ___ | ___ | 2. Identify the names, purposes, and characteristics of power supplies, AC adapter, ATX, proprietary, voltage |
| ___ | ___ | ___ | ___ | 3. Identify the names purposes and characteristics of processor / CPUs |
| | | | | a) CPU Chips (e.g. AMD, Intel) |
| | | | | b) CPU technologies |
| ___ | ___ | ___ | ___ | 4. Identify the names, purposes and characteristics of memory. |

- a) Types of memory (e.g. DRAM, SRAM, SDRAM, DDR / DDR2, RAMBUS)
- b) Operational characteristics
- ___ ___ ___ 5. Identify the names, purposes and characteristics of display devices, projectors, CRT and LCD
 - a) Connector types (e.g. VGA, DVI, HDMI, S-Video, Component / RGB)
 - b) Settings (e.g. V-hold, refresh rate, resolution)
- ___ ___ ___ 6. Identify the names, purposes and characteristics of input devices such as mouse, keyboard, bar code reader, multimedia (e.g. web and digital cameras, MIDI, microphones), biometric devices, touch screen.
- ___ ___ ___ 7. Identify the names, purposes and characteristics of adapter cards
 - a) Video including PCI / PCI-E and AGP
 - b) Multimedia
 - c) I/O (SCSI, serial, USB, Parallel)
 - d) Communications including network and modem
- ___ ___ ___ 8. Identify the names, purposes and characteristics of ports and cables such as USB 1.1 and 2.0 parallel, serial IEEE 1394/firewire, RJ45 and RJ11, PS2/MINI-DIN, centronics (e.g. mini, 36), and multimedia (e.g. 1/8 connector, MIDI, COAX, SPDIF)
- ___ ___ ___ 9. Identify the names, purposes and characteristics of cooling systems for example heat sinks, CPU and case fans, liquid cooling systems, thermal compound.
- ___ ___ ___ 10. Install, configure, optimize and upgrade personal computer components,
 - a) Add, remove and configure internal and external storage devices

- ___ ___ ___ 11. Install, configure, optimize and upgrade personal computer components
 - a) Add, remove and configure internal storage devices, motherboards, power supplies, processor/CPU's, memory and adapter cards
 - b) Add, remove and configure systems
 - c) Install display devices
 - d) Add, remove and configure basic input and multimedia devices
- ___ ___ ___ 12. Identify tools, diagnostic procedures and troubleshooting techniques for personal computer components
 - a) Recognize the basic aspects of troubleshooting theory
 - b) Identify and apply basic diagnostic procedures and troubleshooting techniques.
 - c) Recognize and isolate issues with display, power, basic input devices, storage, memory, thermal, POST errors (e.g. BIOS, hardware)
 - d) Apply basic troubleshooting techniques to check for problems (e.g. thermal issues, error codes, power, connections including cables and/or pins, compatibility, functionality, software/drivers) with components
 - e) Recognize the names, purposes, characteristics and appropriate application of tools BIOS, self-test, hard drive self-test and software diagnostics test, multimeter, antistatic pad/wrist strap, specialty hardware/tools, loop back plugs and cleaning products.
- ___ ___ ___ 13. Perform preventative maintenance on personal computer components

- a) Identify and apply basic aspects of preventative maintenance theory
- b) Identify and apply common preventative maintenance techniques for devices.

E. Advanced Operating Systems
Unless otherwise noted – operating systems referred to within include Microsoft Windows 2000, XP Professional, XP Home and Media Center

- 3 2 1 N
- ___ ___ ___ 1. Identify the fundamentals of using operating systems
- a) Identify the fundamentals of using operating systems (e.g. Mac, Windows, Linux) and describe operating system revision levels including GUI, system requirements, application and hardware compatibility
 - b) Identify names, purposes and characteristics of the primary operating system components including registry, virtual memory and file system
 - c) Use command-line functions and utilities to manage operating systems, including proper syntax and switches.
 - d) Describe features of operating system interfaces
 - e) Identify the names, locations, purposes and characteristics of operating system files
 - f) Use diagnostic utilities and tools to resolve operational problems.
 - g) Identify concepts and procedures for creating, viewing, managing disks, directories and files in operating systems.

- ___ ___ ___ 2. Install, configure, optimize and upgrade operating systems – references to upgrading from Windows 95 and NT may be made.
- Identify procedures for installing operating systems
 - Identify procedures for upgrading operating systems
 - Install/ add a device including loading, adding device drivers and required software
 - Identify procedures and utilities used to optimize operating systems (e.g. virtual memory, hard drives, temporary files, service, start up and applications).
- ___ ___ ___ 3. Identify tools, diagnostic procedures and troubleshooting techniques for operating systems
- Identify basic boot sequences, methods and utilities for recovering operating systems
 - Identify and apply diagnostic procedures and troubleshooting techniques
 - Recognize and resolve common operational issues such as bluescreen, system lock-up, input / output device, application install, start or load and Windows-specific printing problems (e.g. print spool stalled, incorrect / incompatible driver for print).
 - Explain common error messages and codes
 - Identify the names, locations, purposes and characteristics of operating system utilities.
 - Disk management tools (e.g. DEFRAG, NTBACKUP, CHKDSK, format)
 - System management tools (e.g. device and task manager, MSCONFIG.EXE)

- File management tools (e.g. Windows Explorer, ATTRIB.EXE)
- ___ ___ ___ 4. Perform preventative maintenance on operating systems
- Describe common utilities for performing preventative maintenance on operating systems for example; software and Windows updates (e.g. service packs), scheduled backups / restore, restore points.

F. Advanced Laptops and Portable Devices

- 3 2 1 N
- ___ ___ ___ 1. Identify the fundamental principles of using laptops and portable devices
- Identify names, purposes and characteristics of laptop-specific
 - Identify and distinguish between mobile and desktop motherboards and processors including throttling, power management and WiFi.
- ___ ___ ___ 2. Install, configure, optimize and upgrade laptops and portable devices
- Describe how video sharing affects memory upgrades
 - Configure power management
 - Demonstrate safe removal of laptop-specific hardware such as peripherals, how-swappable devices and non-hot-swappable devices
- ___ ___ ___ 3. Identify tools, basic diagnostic procedures and troubleshooting techniques for laptops and probable devices
- Use procedures and techniques to diagnose power conditions, video, keyboard, pointer, and wireless card issues.
- ___ ___ ___ 4. Perform preventative maintenance on laptops and portable devices.
- Identify and apply common preventative maintenance

techniques for laptops and portable devices, cooling devices, hardware and video cleaning materials, operating environments including temperature and air quality, storage, transportation, and shipping.

G. Safety and Environmental Issues

- 3 2 1 N
- ___ ___ ___ 1. Describe the aspects and importance of safety and environmental issues
- Identify potential safety hazards and take preventative action
 - Use Material Safety Data Sheets (MSDS) or equivalent documentation and appropriate equipment documentation
 - Use appropriate repair tools
 - Describe methods to handle environmental and human (e.g. electrical, chemical, physical) accidents including incident reporting
- ___ ___ ___ 2. Identify potential hazards and implement proper safety procedures including ESD precautions and procedures, safe work environment and equipment handling
- ___ ___ ___ 3. Identify potential hazards and proper safety procedures including power supply, display devices and environment (e.g. trip, liquid, situational, atmospheric hazards and high-voltage and moving equipment)
- ___ ___ ___ 4. Identify proper disposal procedures for batteries, display devices and chemical solvents and cans.