

Networking 1 Course Code 5310 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.

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

D. Media and Topologies

- | | | | | |
|-----|-----|-----|-----|---|
| 3 | 2 | 1 | N | |
| ___ | ___ | ___ | ___ | 1. Recognize the following logical or physical network topologies given a diagram, schematic or description: Star, Bus Mesh and Ring. |
| ___ | ___ | ___ | ___ | 2. Specify the main features of 802.2, 802.3, 802.5, 802.11, and FDDI networking technologies, including: Speed, Access method (CSMA / CA and CSMA / CD), Topology, and Media. |
| ___ | ___ | ___ | ___ | 3. Specify the characteristics (e.g., speed, length, topology, and cable type) of the following cable standards: 10BASE-T, 10BASE-FL, 100BASE-TX, 100BASE-FX, 1000BASE-T, 1000BASE-CX, 1000BASE-SX, 1000BASE-LX, 10 GBASE-SR, 10 GBASE-LR, and 10 GBASE-ER. |

- ___ ___ ___ 4. Recognize the following media connectors and describe their uses: RJ-11, RJ-45, F-Type, ST, SC, IEEE 1394, Fiber LC, MT-RJ, and USB.
- ___ ___ ___ 5. Recognize the following media types and describe their uses: Category 3, 5, 5e, and 6, UTP, STP, Coaxial cable, SMF optic cable, and MMF optic cable.
- ___ ___ ___ 6. Identify the purposes, features and functions of the following network components: Hubs, Switches, Bridges, routers, gateways, CSU / DSU, NICs, ISDN adapters, WAPs, Modems, Transceivers, Firewalls.
- ___ ___ ___ 7. Specify the general characteristics (e.g., carrier speed, frequency, transmission type and topology) of the following wireless technologies: 802.11, 802.11x, infrared, and Bluetooth.
- ___ ___ ___ 8. Identify factors which affect the range and speed of wireless service (e.g., interference, antenna type and environmental factors).

E. Protocols and Standards

- 3 2 1 N
- ___ ___ ___ 1. Identify a MAC address and its parts.
 - ___ ___ ___ 2. Identify the seven layers of the OSI model and their functions.
 - ___ ___ ___ 3. Identify the OSI layers at which the following network components operate: Hubs, Switches, bridges, routers, NICs, and WAPs.
 - ___ ___ ___ 4. Differentiate between the following network protocols in terms of routing, addressing schemes, interoperability and naming conventions: IPX / SPX / NetBEUI, AppleTalk / AppleTalk over IP, and TCP / IP.
 - ___ ___ ___ 5. Identify the components and structure of IP addresses (IPv4, IPv6) and the required setting for connections across the Internet.

- ___ ___ ___ 6. Identify classful IP ranges and their subnet masks (e.g., Class A, B, and C).
- ___ ___ ___ 7. Identify the purpose of subnetting.
- ___ ___ ___ 8. Identify the differences between private and public network addressing schemes.
- ___ ___ ___ 9. Identify and differentiate between the following IP addressing methods: Static, Dynamic, Self-assigned (APIPA)
- ___ ___ ___ 10. Define the purpose, function and use of the following protocols used in the TCP / IP Suite: TCP, UDP, FTP, SFTP, TFTP, SMTP, HTTP, HTTPS, POP3 / IMAP4, Telnet, SSH, ICMP, ARP / RARP, NTP, NNTP, SCP, LDAP, IGMP, and LPR.
- ___ ___ ___ 11. Define the function of TCP / UDP ports.
- ___ ___ ___ 12. Identify the well-known ports associated with the following commonly used services and protocols: FTP, SSH, Telnet, SMTP, DNS, TFTP, HTTP, POP3, NNTP, IMAP4, and HTTPS.
- ___ ___ ___ 13. Identify the purpose of network services and protocols (e.g., DNS, NAT, ICS, WINS, SNMP, NFS, Zeroconf, SMB, AFP, and LPD).
- ___ ___ ___ 14. Identify the basic characteristics of the following WAN technologies: Packet switching, Circuit switching, ISDN, FDDI, T1 / E1 / J1, T3 / E3 / J3, OCx, X.25.
- ___ ___ ___ 15. Identify the basic characteristics of the following internet access technologies: xDSL, Broadband Cable, POTS / PSTN, Satellite, and wireless.
- ___ ___ ___ 16. Define the function of the following remote access protocols and services: RAP, PPP, SLIP, PPPoE, PPTP, VPN, and RDP.
- ___ ___ ___ 17. Identify the following security protocols and describe their purpose and function: IPSec, L2TP, SSL, WEP, WPA, and 802.1x.

- ___ ___ ___ 18. Identify authentication protocols (e.g., CHAP, MS-CHAP, PAP), RADIUS, Kerberos, EAP.