

## Network Administration

| Unit                                    | Objectives  |
|---|---|
| <a href="#">Basic Computer Concepts</a> | <ol style="list-style-type: none"><li>1 Demonstrate ethical conduct in everyday procedures (e.g., piracy, licensing, intellectual property, etc.)</li><li>2 Use basic computer terminology correctly</li><li>3 Identify parts of a computer (components and media)</li><li>4 Identify components of input, processing, output, and storage</li><li>5 Compare mainframes, servers, desktops, laptops, and mobile devices</li><li>6 Differentiate between common operating systems, including file systems</li><li>7 Perform basic computer filing tasks (e.g., naming, saving, deleting, and moving files)</li><li>8 Perform basic computer maintenance (including disk maintenance, software updates, and physical cleaning)</li></ol>  |
| <a href="#">Communications</a>          | <ol style="list-style-type: none"><li>1 Present solutions in a positive, tactful manner</li><li>2 Practice constructive problem solving with customers</li><li>3 Explain concepts of remote access and phone support</li><li>4 Describe software and hardware tools to support individuals with disabilities</li><li>5 Explain the need for network policy documentation</li><li>6 Understand SLAs (Service Level Agreements)</li><li>7 Create basic user and/or network administrator documentation</li><li>8 Demonstrate effective telephone support skills</li><li>9 Demonstrate effective technical correspondence etiquette (including e-mail, text, chat, and work orders)</li><li>10 Present an oral proposal for a network installation</li><li>11 Prepare a written request for proposal</li><li>12 Create technical correspondence</li></ol>  |
| <a href="#">Hardware</a>                | <ol style="list-style-type: none"><li>1 Verify operation of common peripherals</li><li>2 Install and uninstall common peripherals</li><li>3 Install and configure a network adapter</li><li>4 Install and configure network devices (routers, switches, wireless access points)</li><li>5 Install and configure a modem (dial-up and broadband)</li><li>6 Perform basic hardware upgrades (e.g., hard drive, optical drive, memory, video and sound cards)</li><li>7 Specify internal components for a network server and networking devices (routers, switches, and wireless access points)</li><li>8 Differentiate between routing and switching/bridging</li><li>9 Differentiate between various current protocols (e.g., TCP/IP, DHCP, ARP)</li><li>10 Relate industry standard workstation hardware systems to network performance</li><li>11 Evaluate equipment for purchase</li><li>12 Identify industry standard hardware systems (server, client, and network devices)</li></ol> |

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| <a href="#">Networking Concepts</a>    | <ol style="list-style-type: none"><li>1 Use networking terminology correctly</li><li>2 Draw, label, and explain functions of networking layers (OSI and TCP/IP)</li><li>3 Identify network devices (routers, switches, access points, etc.)</li><li>4 List the functions of a network operating system (NOS)</li><li>5 Identify types of networks (e.g., LAN, WAN, WLAN, MAN, and SAN)</li><li>6 Identify shared network resources (e.g., hardware, software)</li><li>7 Compare and contrast advantages and disadvantages of network vs. standalone computing</li><li>8 Access shared network resources (e.g., hardware, software files)</li><li>9 Describe capabilities of networking media (copper, fiber, and wireless)</li><li>10 Diagram and explain logical network topologies (e.g., star, bus, ring, broadband, baseband) and their related geometries</li><li>11 Diagram and explain physical network topology (e.g., clients, servers, networking devices, redundancy, ring, star, bus)</li><li>12 Identify types of licensing agreements</li><li>13 Explain current network standards (e.g., IEEE, RFCs, ISO)</li></ol> |
| <a href="#">Prepare for Employment</a> | <ol style="list-style-type: none"><li>1 Demonstrate working as a team</li><li>2 Search the web and other places to locate career-planning information and job opportunities related to networking</li><li>3 Identify careers in the information technology field</li><li>4 Create a resume</li><li>5 Demonstrate appropriate interviewing skills</li><li>6 Demonstrate communication skills</li><li>7 Demonstrate logical thinking</li><li>8 Demonstrate interpersonal skills</li><li>9 Exhibit leadership skills through a student organization (e.g. FBLA, PBL, ACM, SkillsUSA)</li></ol>  |
| <a href="#">Safety</a>                 | <ol style="list-style-type: none"><li>1 List features of an ergonomically correct workstation</li><li>2 Demonstrate using antistatic tools to prevent static discharge</li><li>3 Describe the operation of fire suppression resources including fire extinguishers</li><li>4 Identify electrical, mechanical, chemical, and environmental hazards</li><li>5 Practice workplace safety (e.g., first aid, eye protection, anti-static procedures)</li><li>6 Demonstrate proper use of hand and power tools</li><li>7 Demonstrate proper use of electrically operated equipment including grounding</li><li>8 Demonstrate proper lifting and carrying techniques</li></ol>  |
| <a href="#">Troubleshooting</a>        | <ol style="list-style-type: none"><li>1 Verify client access to network resources</li><li>2 Utilize existing technical resources for problem resolution (e.g., Internet, technical manuals, e-mail)</li><li>3 Identify sources of electromagnetic and radio frequency interference</li><li>4 Use troubleshooting tools to determine problem areas</li><li>5 Analyze system log files</li><li>6 Perform and interpret diagnostics (both software and hardware)</li><li>7 Troubleshoot software/hardware integration problems</li></ol>  |