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| **COURSE INTRODUCTION:****A knowledge and understanding of networking concepts prepare students for the career area of network administration. As technology advances, the demand will continue to increase for employees who are able to resolve computer network problems.****Students apply problem-solving skills to business situations exploring computer maintenance activities. Students will analyze software problems, install software applications programs and customize defaults, connect components of a local area network, use basic network protocol, and troubleshoot network problems.** |

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| **UNIT DESCRIPTION:** **Students will learn hardware considerations in planning a network, the benefits and risks to upgrades, and how to choose appropriate equipment.** | **SUGGESTED UNIT TIMELINE: 2 WEEKS** **CLASS PERIOD (min.): 50 MINUTES**  |
| **ESSENTIAL QUESTIONS:**1. What are the considerations when choosing a network adapter?
2. What are the benefits and risks with upgrading existing technology?
3. When planning a network, why do you have hardware considerations?
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|  |
| **ESSENTIAL MEASURABLE LEARNING OBJECTIVES**  | **CCSS LEARNING GOALS (Anchor Standards/Clusters)** | **CROSSWALK TO STANDARDS** |
| **GLEs/CLEs** | **PS** | **CCSS** | **OTHER** | **DOK** |
| 1. Verify operation of common peripherals
 |  |  |  | RI11-12.1RI11-12.2RI11-12.3RI11-12.4RI11-12.5RI11-12.6RI11-12.7RI11-12.10SL11-12.1SL111-12.2SL11-12.3SL11-12.4SL11-12.5SL11-12.6L11-12.1L11-12.2L11-12.3L11-12.4L11-12.4L11-12.5L11-12.6RST11-12.1RST11-12.2RST11-12.3RST11-12.4RST11-12.5RST11-12.6WHST11-12.1WHST11-12.2WHST11-12.4WHST11-12.5WHST11-12.6WHST11-12.7WHST11-12.8WHST11-12.9WHST11-12.10 | IT-I.1IT-I.2IT-I.3IT-I.4IT-II.1IT-II.2IT-II.3IT-II.4IT-III.1IT-IV.1IT-IV.2IT-IV.3IT-IV.4IT-V.1IT-V.2IT-VI.1IT-VI.2IT-VIII.1IT-VIII.2IT-VIII.3IT-IX.1IT-X.3IT-X.4IT-XII.2IT-XII.3IT-XII.4IT-XIII.2IT-XIII.3IT-XIII.4COMM-I-A.1COMM-I-A.2COMM-I-A.3COMM-I-A.4COMM-I-B.1COMM-I-B.2COMM-I-B.3COMM-I-C.1COMM-I-C.2COMM-I-C.3COMM-I-C.4COMM-I-D.1COMM-I-D.2COMM-I-D.3COMM-I-D.4COMM-IV.1COMM-IV.2 | **3** |
| 1. Install and uninstall common peripherals
 |  |  |  | RI11-12.1RI11-12.2RI11-12.3RI11-12.4RI11-12.5RI11-12.6RI11-12.7RI11-12.10SL11-12.1SL111-12.2SL11-12.3SL11-12.4SL11-12.5SL11-12.6L11-12.1L11-12.2L11-12.3L11-12.4L11-12.4L11-12.5L11-12.6RST11-12.1RST11-12.2RST11-12.3RST11-12.4RST11-12.5RST11-12.6WHST11-12.1WHST11-12.2WHST11-12.4WHST11-12.5WHST11-12.6WHST11-12.7WHST11-12.8WHST11-12.9WHST11-12.10 | IT-I.1IT-I.2IT-I.3IT-I.4IT-II.1IT-II.2IT-II.3IT-II.4IT-III.1IT-IV.1IT-IV.2IT-IV.3IT-IV.4IT-V.1IT-V.2IT-VI.1IT-VI.2IT-VIII.1IT-VIII.2IT-VIII.3IT-IX.1IT-X.3IT-X.4IT-XII.2IT-XII.3IT-XII.4IT-XIII.2IT-XIII.3IT-XIII.4COMM-I-A.1COMM-I-A.2COMM-I-A.3COMM-I-A.4COMM-I-B.1COMM-I-B.2COMM-I-B.3COMM-I-C.1COMM-I-C.2COMM-I-C.3COMM-I-C.4COMM-I-D.1COMM-I-D.2COMM-I-D.3COMM-I-D.4COMM-IV.1COMM-IV.2 | **2** |
| 1. Install and configure a network adapter
 |  |  |  | RI11-12.1RI11-12.2RI11-12.3RI11-12.4RI11-12.5RI11-12.6RI11-12.7RI11-12.10SL11-12.1SL111-12.2SL11-12.3SL11-12.4SL11-12.5SL11-12.6L11-12.1L11-12.2L11-12.3L11-12.4L11-12.4L11-12.5L11-12.6RST11-12.1RST11-12.2RST11-12.3RST11-12.4RST11-12.5RST11-12.6WHST11-12.1WHST11-12.2WHST11-12.4WHST11-12.5WHST11-12.6WHST11-12.7WHST11-12.8WHST11-12.9WHST11-12.10N-Q.1N-Q.2N-Q.3N-VM.6 | IT-I.1IT-I.2IT-I.3IT-I.4IT-II.1IT-II.2IT-II.3IT-II.4IT-III.1IT-IV.1IT-IV.2IT-IV.3IT-IV.4IT-V.1IT-V.2IT-VI.1IT-VI.2IT-VIII.1IT-VIII.2IT-VIII.3IT-IX.1IT-X.3IT-X.4IT-XII.2IT-XII.3IT-XII.4IT-XIII.2IT-XIII.3IT-XIII.4MGMT-VIII-A.1MGMT-VIII-A.2MGMT-VIII-A.3MGMT-VIII-A.4COMM-I-A.1COMM-I-A.2COMM-I-A.3COMM-I-A.4COMM-I-B.1COMM-I-B.2COMM-I-B.3COMM-I-C.1COMM-I-C.2COMM-I-C.3COMM-I-C.4COMM-I-D.1COMM-I-D.2COMM-I-D.3COMM-I-D.4COMM-IV.1COMM-IV.2 | **2** |
| 1. Install and configure network devices (routers, switches, wireless access points)
 |  |  |  | RI11-12.1RI11-12.2RI11-12.3RI11-12.4RI11-12.5RI11-12.6RI11-12.7RI11-12.10SL11-12.1SL111-12.2SL11-12.3SL11-12.4SL11-12.5SL11-12.6L11-12.1L11-12.2L11-12.3L11-12.4L11-12.4L11-12.5L11-12.6RST11-12.1RST11-12.2RST11-12.3RST11-12.4RST11-12.5RST11-12.6WHST11-12.1WHST11-12.2WHST11-12.4WHST11-12.5WHST11-12.6WHST11-12.7WHST11-12.8WHST11-12.9WHST11-12.10G-MG.1G-MG.2G-MG.3 | IT-I.1IT-I.2IT-I.3IT-I.4IT-II.1IT-II.2IT-II.3IT-II.4IT-III.1IT-IV.1IT-IV.2IT-IV.3IT-IV.4IT-V.1IT-V.2IT-VI.1IT-VI.2IT-VIII.1IT-VIII.2IT-VIII.3IT-IX.1IT-X.3IT-X.4IT-XII.2IT-XII.3IT-XII.4IT-XIII.2IT-XIII.3IT-XIII.4COMM-I-A.1COMM-I-A.2COMM-I-A.3COMM-I-A.4COMM-I-B.1COMM-I-B.2COMM-I-B.3COMM-I-C.1COMM-I-C.2COMM-I-C.3COMM-I-C.4COMM-I-D.1COMM-I-D.2COMM-I-D.3COMM-I-D.4COMM-IV.1COMM-IV.2 | **3** |
| 1. Install and configure a modem (dial-up and broadband)
 |  |  |  | RI11-12.1RI11-12.2RI11-12.3RI11-12.4RI11-12.5RI11-12.6RI11-12.7RI11-12.10SL11-12.1SL111-12.2SL11-12.3SL11-12.4SL11-12.5SL11-12.6L11-12.1L11-12.2L11-12.3L11-12.4L11-12.4L11-12.5L11-12.6RST11-12.1RST11-12.2RST11-12.3RST11-12.4RST11-12.5RST11-12.6WHST11-12.1WHST11-12.2WHST11-12.4WHST11-12.5WHST11-12.6WHST11-12.7WHST11-12.8WHST11-12.9WHST11-12.10N-Q.1N-Q.2N-Q.3 | IT-I.1IT-I.2IT-I.3IT-I.4IT-II.1IT-II.2IT-II.3IT-II.4IT-III.1IT-IV.1IT-IV.2IT-IV.3IT-IV.4IT-V.1IT-V.2IT-VI.1IT-VI.2IT-VIII.1IT-VIII.2IT-VIII.3IT-IX.1IT-X.3IT-X.4IT-XII.2IT-XII.3IT-XII.4IT-XIII.2IT-XIII.3IT-XIII.4COMM-I-A.1COMM-I-A.2COMM-I-A.3COMM-I-A.4COMM-I-B.1COMM-I-B.2COMM-I-B.3COMM-I-C.1COMM-I-C.2COMM-I-C.3COMM-I-C.4COMM-I-D.1COMM-I-D.2COMM-I-D.3COMM-I-D.4COMM-IV.1COMM-IV.2 | **2** |
| 1. Perform basic hardware upgrades (e.g., hard drive, optical drive, memory, video and sound cards)
 |  |  |  | RI11-12.1RI11-12.2RI11-12.3RI11-12.4RI11-12.5RI11-12.6RI11-12.7RI11-12.10SL11-12.1SL111-12.2SL11-12.3SL11-12.4SL11-12.5SL11-12.6L11-12.1L11-12.2L11-12.3L11-12.4L11-12.4L11-12.5L11-12.6RST11-12.1RST11-12.2RST11-12.3RST11-12.4RST11-12.5RST11-12.6WHST11-12.1WHST11-12.2WHST11-12.4WHST11-12.5WHST11-12.6WHST11-12.7WHST11-12.8WHST11-12.9WHST11-12.10N-Q.1N-Q.2N-Q.3 | IT-I.1IT-I.2IT-I.3IT-I.4IT-II.1IT-II.2IT-II.3IT-II.4IT-III.1IT-IV.1IT-IV.2IT-IV.3IT-IV.4IT-V.1IT-V.2IT-VI.1IT-VI.2IT-VIII.1IT-VIII.2IT-VIII.3IT-IX.1IT-X.3IT-X.4IT-XII.2IT-XII.3IT-XII.4IT-XIII.2IT-XIII.3IT-XIII.4COMM-I-A.1COMM-I-A.2COMM-I-A.3COMM-I-A.4COMM-I-B.1COMM-I-B.2COMM-I-B.3COMM-I-C.1COMM-I-C.2COMM-I-C.3COMM-I-C.4COMM-I-D.1COMM-I-D.2COMM-I-D.3COMM-I-D.4COMM-IV.1COMM-IV.2 | **2** |
| 1. Specify internal components for a network server and networking devices (routers, switches, and wireless access points)
 |  |  |  | RI11-12.1RI11-12.2RI11-12.3RI11-12.4RI11-12.5RI11-12.6RI11-12.7RI11-12.10SL11-12.1SL111-12.2SL11-12.3SL11-12.4SL11-12.5SL11-12.6L11-12.1L11-12.2L11-12.3L11-12.4L11-12.4L11-12.5L11-12.6RST11-12.1RST11-12.2RST11-12.3RST11-12.4RST11-12.5RST11-12.6WHST11-12.1WHST11-12.2WHST11-12.4WHST11-12.5WHST11-12.6WHST11-12.7WHST11-12.8WHST11-12.9WHST11-12.10A-SSE.1A-SSE.2A-APR.1A-APR.7A-CED.1A-CED.3A-CED.4S-IC.1S-IC.2S-IC.3S-IC.4S-ID.1S-ID.2S-ID.3S-ID.4S-ID.5S-ID.6S-ID.7S-MD.5S-MD.6S-MD.7S-CP.1S-CP.5N-Q.1N-Q.2N-Q.3N-VM.6 | IT-I.1IT-I.2IT-I.3IT-I.4IT-II.1IT-II.2IT-II.3IT-II.4IT-III.1IT-IV.1IT-IV.2IT-IV.3IT-IV.4IT-V.1IT-V.2IT-VI.1IT-VI.2IT-VIII.1IT-VIII.2IT-VIII.3IT-IX.1IT-X.3IT-X.4IT-XII.2IT-XII.3IT-XII.4IT-XIII.2IT-XIII.3IT-XIII.4COMM-I-A.1COMM-I-A.2COMM-I-A.3COMM-I-A.4COMM-I-B.1COMM-I-B.2COMM-I-B.3COMM-I-C.1COMM-I-C.2COMM-I-C.3COMM-I-C.4COMM-I-D.1COMM-I-D.2COMM-I-D.3COMM-I-D.4COMM-IV.1COMM-IV.2 | **3** |
| 1. Differentiate between routing and switching/bridging
 |  |  |  | RI11-12.1RI11-12.2RI11-12.3RI11-12.4RI11-12.5RI11-12.6RI11-12.7RI11-12.10SL11-12.1SL111-12.2SL11-12.3SL11-12.4SL11-12.5SL11-12.6L11-12.1L11-12.2L11-12.3L11-12.4L11-12.4L11-12.5L11-12.6RST11-12.1RST11-12.2RST11-12.3RST11-12.4RST11-12.5RST11-12.6WHST11-12.1WHST11-12.2WHST11-12.4WHST11-12.5WHST11-12.6WHST11-12.7WHST11-12.8WHST11-12.9WHST11-12.10G-MG.1G-MG.2G-MG.3 | IT-I.1IT-I.2IT-I.3IT-I.4IT-II.1IT-II.2IT-II.3IT-II.4IT-III.1IT-IV.1IT-IV.2IT-IV.3IT-IV.4IT-V.1IT-V.2IT-VI.1IT-VI.2IT-VIII.1IT-VIII.2IT-VIII.3IT-IX.1IT-X.3IT-X.4IT-XII.2IT-XII.3IT-XII.4IT-XIII.2IT-XIII.3IT-XIII.4COMM-I-A.1COMM-I-A.2COMM-I-A.3COMM-I-A.4COMM-I-B.1COMM-I-B.2COMM-I-B.3COMM-I-C.1COMM-I-C.2COMM-I-C.3COMM-I-C.4COMM-I-D.1COMM-I-D.2COMM-I-D.3COMM-I-D.4COMM-IV.1COMM-IV.2 | **3** |
| 1. Differentiate between various current protocols (e.g., TCP/IP, DHCP, ARP)
 |  |  |  | RI11-12.1RI11-12.2RI11-12.3RI11-12.4RI11-12.5RI11-12.6RI11-12.7RI11-12.10SL11-12.1SL111-12.2SL11-12.3SL11-12.4SL11-12.5SL11-12.6L11-12.1L11-12.2L11-12.3L11-12.4L11-12.4L11-12.5L11-12.6RST11-12.1RST11-12.2RST11-12.3RST11-12.4RST11-12.5RST11-12.6WHST11-12.1WHST11-12.2WHST11-12.4WHST11-12.5WHST11-12.6WHST11-12.7WHST11-12.8WHST11-12.9WHST11-12.10A-SSE.1A-SSE.2A-APR.1A-APR.7A-CED.1A-CED.3A-CED.4S-IC.1S-IC.2S-IC.3S-IC.4S-ID.1S-ID.2S-ID.3S-ID.4S-ID.5S-ID.6S-ID.7S-MD.5S-MD.6S-MD.7S-CP.1S-CP.5N-Q.1N-Q.2N-Q.3G-MG.1G-MG.2G-MG.3 | IT-I.1IT-I.2IT-I.3IT-I.4IT-II.1IT-II.2IT-II.3IT-II.4IT-III.1IT-IV.1IT-IV.2IT-IV.3IT-IV.4IT-V.1IT-V.2IT-VI.1IT-VI.2IT-VIII.1IT-VIII.2IT-VIII.3IT-IX.1IT-X.3IT-X.4IT-XII.2IT-XII.3IT-XII.4IT-XIII.2IT-XIII.3IT-XIII.4COMM-I-A.1COMM-I-A.2COMM-I-A.3COMM-I-A.4COMM-I-B.1COMM-I-B.2COMM-I-B.3COMM-I-C.1COMM-I-C.2COMM-I-C.3COMM-I-C.4COMM-I-D.1COMM-I-D.2COMM-I-D.3COMM-I-D.4COMM-IV.1COMM-IV.2 | **3** |
| 1. Relate industry standard workstation hardware systems to network performance
 |  |  |  | RI11-12.1RI11-12.2RI11-12.3RI11-12.4RI11-12.5RI11-12.6RI11-12.7RI11-12.10SL11-12.1SL111-12.2SL11-12.3SL11-12.4SL11-12.5SL11-12.6L11-12.1L11-12.2L11-12.3L11-12.4L11-12.4L11-12.5L11-12.6RST11-12.1RST11-12.2RST11-12.3RST11-12.4RST11-12.5RST11-12.6WHST11-12.1WHST11-12.2WHST11-12.4WHST11-12.5WHST11-12.6WHST11-12.7WHST11-12.8WHST11-12.9WHST11-12.10A-SSE.1A-SSE.2A-APR.1A-APR.7A-CED.1A-CED.3A-CED.4S-IC.1S-IC.2S-IC.3S-IC.4S-ID.1S-ID.2S-ID.3S-ID.4S-ID.5S-ID.6S-ID.7S-MD.5S-MD.6S-MD.7S-CP.1S-CP.5N-Q.1N-Q.2N-Q.3N-VM.6 | IT-I.1IT-I.2IT-I.3IT-I.4IT-II.1IT-II.2IT-II.3IT-II.4IT-III.1IT-IV.1IT-IV.2IT-IV.3IT-IV.4IT-V.1IT-V.2IT-VI.1IT-VI.2IT-VIII.1IT-VIII.2IT-VIII.3IT-IX.1IT-X.3IT-X.4IT-XII.2IT-XII.3IT-XII.4IT-XIII.2IT-XIII.3IT-XIII.4COMM-I-A.1COMM-I-A.2COMM-I-A.3COMM-I-A.4COMM-I-B.1COMM-I-B.2COMM-I-B.3COMM-I-C.1COMM-I-C.2COMM-I-C.3COMM-I-C.4COMM-I-D.1COMM-I-D.2COMM-I-D.3COMM-I-D.4COMM-IV.1COMM-IV.2 | **3** |
| 1. Evaluate equipment for purchase
 |  |  |  | RI11-12.1RI11-12.2RI11-12.3RI11-12.4RI11-12.5RI11-12.6RI11-12.7RI11-12.10SL11-12.1SL111-12.2SL11-12.3SL11-12.4SL11-12.5SL11-12.6L11-12.1L11-12.2L11-12.3L11-12.4L11-12.4L11-12.5L11-12.6RST11-12.1RST11-12.2RST11-12.3RST11-12.4RST11-12.5RST11-12.6WHST11-12.1WHST11-12.2WHST11-12.4WHST11-12.5WHST11-12.6WHST11-12.7WHST11-12.8WHST11-12.9WHST11-12.10A-SSE.1A-SSE.2A-APR.1A-APR.7A-CED.1A-CED.3A-CED.4S-IC.1S-IC.2S-IC.3S-IC.4S-ID.1S-ID.2S-ID.3S-ID.4S-ID.5S-ID.6S-ID.7S-MD.5S-MD.6S-MD.7S-CP.1S-CP.5N-Q.1N-Q.2N-Q.3 | IT-I.1IT-I.2IT-I.3IT-I.4IT-II.1IT-II.2IT-II.3IT-II.4IT-III.1IT-IV.1IT-IV.2IT-IV.3IT-IV.4IT-V.1IT-V.2IT-VI.1IT-VI.2IT-VIII.1IT-VIII.2IT-VIII.3IT-IX.1IT-X.3IT-X.4IT-XII.2IT-XII.3IT-XII.4IT-XIII.2IT-XIII.3IT-XIII.4COMM-I-A.1COMM-I-A.2COMM-I-A.3COMM-I-A.4COMM-I-B.1COMM-I-B.2COMM-I-B.3COMM-I-C.1COMM-I-C.2COMM-I-C.3COMM-I-C.4COMM-I-D.1COMM-I-D.2COMM-I-D.3COMM-I-D.4COMM-IV.1COMM-IV.2ENT-V-D.1ENT-V-D.2COMP-I.1COMP-II.1COMP-II.2COMP-III.1COMP-III.2COMP-IV.1COMP-IV.2COMP-V.2COMP-VI-G.1COMP-VI-G.2COMP-VI-G.3COMP-VI-K.2COMP-VI-K.3 | **2** |
| 1. Identify industry standard hardware systems (server, client, and network devices)
 |  |  |  | RI11-12.1RI11-12.2RI11-12.3RI11-12.4RI11-12.5RI11-12.6RI11-12.7RI11-12.10SL11-12.1SL111-12.2SL11-12.3SL11-12.4SL11-12.5SL11-12.6L11-12.1L11-12.2L11-12.3L11-12.4L11-12.4L11-12.5L11-12.6RST11-12.1RST11-12.2RST11-12.3RST11-12.4RST11-12.5RST11-12.6WHST11-12.1WHST11-12.2WHST11-12.4WHST11-12.5WHST11-12.6WHST11-12.7WHST11-12.8WHST11-12.9WHST11-12.10G-MG.1G-MG.2G-MG.3 | IT-I.1IT-I.2IT-I.3IT-I.4IT-II.1IT-II.2IT-II.3IT-II.4IT-III.1IT-IV.1IT-IV.2IT-IV.3IT-IV.4IT-V.1IT-V.2IT-VI.1IT-VI.2IT-VIII.1IT-VIII.2IT-VIII.3IT-IX.1IT-XII.2IT-XII.3IT-XII.4IT-XIII.2IT-XIII.3IT-XIII.4COMM-I-A.1COMM-I-A.2COMM-I-A.3COMM-I-A.4COMM-I-B.1COMM-I-B.2COMM-I-B.3COMM-I-C.1COMM-I-C.2COMM-I-C.3COMM-I-C.4COMM-I-D.1COMM-I-D.2COMM-I-D.3COMM-I-D.4COMM-IV.1COMM-IV.2 | **1** |
| **ASSESSMENT DESCRIPTIONS\*: (Write a brief overview here. Identify Formative/Summative. Actual assessments will be accessed by a link to PDF file or Word doc. )** **Informal assessments may be utilized such as observation with checklist and quizzes embedded in the vendor curriculum.****Since most assessment items in network administration curricula are vendor specific and copyrighted, actual examples cannot be provided. Some suggested vendors are Cisco, Microsoft, and Comp-TIA.** **\*Attach Unit Summative Assessment, including Scoring Guides/Scoring Keys/Alignment Codes and DOK Levels for all items. Label each assessment according to the unit descriptions above ( i.e., Grade Level/Course Title/Course Code, Unit #.)** |
| **Obj. #** | **INSTRUCTIONAL STRATEGIES (research-based): (Teacher Methods)**  |
| 1-12 | 1. Teacher lectures and demonstrates advanced information on PCs, Laptops, printers and scanners. Teacher guides students in practice.
 |
| 1-12 | 1. Teacher provides study guides for student continued practice.
 |
| **Obj. #** | **INSTRUCTIONAL ACTIVITIES: (What Students Do)** |
| 1-12 | 1. Students take notes and practice based on teacher demonstrations.
 |
| 1-12 | 1. Students continue practice based on study guide materials.
 |
| **UNIT RESOURCES: (include internet addresses for linking)** |