Apprentice Curriculum Standard

Information Technology Network Technician - 634C

Level 1 and 2

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Level 2

634A1.01 Introduction to Microcomputers

GENERAL LEARNING OUTCOME
Upon successful completion of the reportable subject, the apprentice is able to identify and describe microcomputer technologies as a foundation for supporting, servicing, and troubleshooting microcomputer systems.

LEARNING OUTCOMES
Upon successful completion, the apprentice is able to:

    1.1 Outline the evolution of the microcomputer.
        1.1.1 Identify early and current families of processors.
        1.1.2 Identify various microcomputer platforms.
        1.1.3 Describe differences among PC models.
    1.2 Demonstrate a variety of input techniques.
        1.2.1 Identify various keyboards and other input devices.
        1.2.2 Key using touch typing techniques.
        1.2.3 Use keyboard shortcuts.
    1.3 Describe the hardware components of a microcomputer.
        1.3.1 Define computer terms relating to the hardware components of a microcomputer.
        1.3.2 Identify the hardware components of a microcomputer.
        1.3.3 Describe how the various components interact.
    1.4 Uninstall/reinstall specific hardware components.
    1.5 Describe operating system software.
        1.5.1 Describe the fundamental purpose of an operating system.
        1.5.2 Identify operating system software.
        1.5.3 Explain the features of operating system software.
        1.5.4 Compare performance characteristics of operating system software.
        1.5.5 Compare the structure of the operating system and file system.
        1.5.6 Navigate within a Graphic User Interface (GUI) environment.
    1.6 Explain the characteristics of the storage media used by a microcomputer system.
        1.6.1 Examine storage media.
    1.7 Describe application software.
        1.7.1 Describe the purpose of application software.
        1.7.2 Identify application software.
        1.7.3 Explain the features of application software.
        1.7.4 Compare performance characteristics of application software.

1.8 Define the concept of how microcomputers communicate with other devices over a network.

      1.8.1 Explain different methods of communication.

1.9 Identify the cost and performance characteristics of microcomputer components.

      1.9.1 Compare the cost of components that can be upgraded to increase performance.

      1.9.2 Justify the choice of hardware upgrades to increase the performance of a microcomputer.

      1.9.3 Research the cost of a new microcomputer given specific user requirements.

1.10 Navigate the Internet.

      1.10.1 Identify families of search engines.

      1.10.2 Identify security concerns.

      1.10.3 Search for information.

      1.10.4 Use Boolean logic for advanced searching.

      1.10.5 Access online help.

      1.10.6 Research documentation.

      1.10.7. Download drivers for particular hardware.

634A1.02 Health and Safety Practices

GENERAL LEARNING OUTCOME

Upon successful completion of the reportable subject, the apprentice is able to identify the requirements for compliance with manufacturers' recommendations and specifications and for occupational health and safety procedures.

LEARNING OUTCOMES

Upon successful completion, the apprentice is able to:

2.1 Identify potential workplace environmental, health, and safety hazards.

    2.1.1 List the measures taken to prevent illness or injury resulting from exposure to various hazardous materials and/or conditions.

2.2 Identify safe handling, storage, and recycling procedures for workplace materials.

    2.2.1 List the measures taken to handle, store, and recycle various materials.

    2.2.2 Identify methods for disposing of IT waste.

2.3 Use personal protective equipment.

    2.3.1 Identify types of personal protective equipment.

    2.3.2 Select the appropriate personal protective equipment for the job.

2.4 Describe documents, acts, and regulations that relate to workplace environments.

    2.4.1 Explain the purpose of manufacturers' recommendations and specifications.

    2.4.2 Explain the purpose of Occupational Health and Safety Act (OHSA).

    2.4.3 Explain the purpose of Environmental Protection Act (EPA).

    2.4.4 Explain the purpose of Workplace Hazardous Materials Information System (WHMIS).

2.5 Identify good housekeeping practices.

    2.5.1 Explain how to maintain a clean and orderly work area.

    2.5.2 Describe how to remove and dispose of potential fire hazards.

    2.5.3 List the steps necessary to clean up grease, oil, and/or fluids.

    2.5.4 Ensure work area is free of obstructions.

    2.5.5 Safely use, store, and maintain equipment, tools, and shop safety equipment.

    2.5.6 Identify ergonomically-appropriate furniture, equipment, and practices.

634A1.03 Operating Systems

GENERAL LEARNING OUTCOME
Upon successful completion of the reportable subject, the apprentice is able to install, configure, and maintain DOS, Windows, and Linux/Unix based operating systems.

LEARNING OUTCOMES
Upon successful completion, the apprentice is able to:

3.1 Outline the foundation of simple disk operating systems.

    3.1.1 Define numerical systems.

    3.1.2 State reasons for the use of numerical systems in computers.

    3.1.3 Define the different families of Central Processing Units (CPUs).

3.2 Describe the common features of operating systems.

    3.2.1 Describe various user interfaces.

    3.2.2 Demonstrate different types of process management/multi-function activities.

    3.2.3 Identify device management activities.

    3.2.4 Describe file management structures.

3.3 Outline the functions of an operating system.

    3.3.1 Identify the means by which the operating system controls hardware, software, and peripherals.

    3.3.2 Define the ways by which the operating system manages memory.

    3.3.3 Identify the methods by which an operating system processes input and formulates output.

3.4 Compare and contrast the installation and configuration of DOS, Windows-based, and Linux/Unix-based operating systems.

    3.4.1 Outline the minimum system requirements to install each of DOS, Windows, and Linux/Unix.

    3.4.2 Differentiate between the primary purposes of each of the three operating Systems.

    3.4.3 Assess the impact of Graphical User Interfaces (GUI) for the three operating systems.

    3.4.4 Identify the issues pertaining to maintaining and upgrading each of the three operating systems.

3.5 Install and configure a DOS, Windows-based, and Linux/Unix-based operating system.

       3.5.1 List the steps necessary to perform the installation of the three operating Systems.

       3.5.2 Describe the installation options available for the three operating systems.

       3.5.3 Install each of the three operating systems.

3.6 Outline the differences among the user interfaces of the three operating systems.

       3.6.1 Define syntax.

3.7 Demonstrate troubleshooting techniques for operating systems.

       3.7.1 Identify and repair system resource conflicts.

       3.7.2 Determine hardware incompatibility.

       3.7.3 Assign security.

       3.7.4 Edit the registry using a registry editor.

       3.7.5 Find resources for fixing problems.

634A1.04 Microcomputer Applications

GENERAL LEARNING OUTCOME

Upon successful completion of the reportable subject, the apprentice is able to install and use basic microcomputer applications.

LEARNING OUTCOMES

Upon successful completion, the apprentice is able to:

4.1 Install application software

    4.1.1 Identify system requirements prior to installing application software

    4.1.2 Identify system components that are affected by installing application software

    4.1.3 Describe the different methods of installation

    4.1.4 Use Wizards at all three levels

    4.1.5 Install upgrades and patches without Wizards using documentation and online support materials

4.2 Uninstall application software

    4.2.1 Use Wizards to uninstall

    4.2.2 Use operating systems settings to uninstall

    4.2.3 Use delete to uninstall

    4.2.4 Use third party cleaning utilities

4.3 Use Internet utilities

    4.3.1 Communicate via SMTP/POP3

    4.3.2 Download/upload files using FTP

    4.3.3 Search the World Wide Web using HTTP

4.4 Demonstrate basic features of e-mail utilities

    4.4.1 Identify differences between corporate/workgroup and Internet based e-mail systems

4.5 Demonstrate basic features of a word processor

    4.5.1 Identify GUI features

    4.5.2 Use format options

    4.5.3 Use language tool features

    4.5.4 Use edit tool features

    4.5.5 Use different view option

    4.5.6 Use hyperlinks

    4.5.7 Use electronic help facilities

4.6 Demonstrate the basic features of a spreadsheet
      4.6.1 Identify GUI features
      4.6.2 Use format options
      4.6.3 Use language tool features
      4.6.4 Use edit tool features
      4.6.5 Use different view option
      4.6.6 Use hyperlinks
      4.6.7 Create and use basic formulas
      4.6.8 Use functions
      4.6.9 Use absolute and relative references
4.7 Describe the basic concepts of a database management system
      4.7.1 Explain the uses of a database management system
4.8 Demonstrate the basic features of presentation software
      4.8.1 Identify GUI features
      4.8.2 Use format options
      4.8.3 Use language tool features
      4.8.4 Use edit tool features
      4.8.5 Use different view options
      4.8.6 Use slide layout
      4.8.7 Use slide features
      4.8.8 Run a presentation

634A1.05 Basic Electrical/Electronics

GENERAL LEARNING OUTCOME

Upon successful completion of the reportable subject, the apprentice is able to use the basics of electrical and electronic theory to identify, inspect, and test electrical and electronic components of microcomputers.

LEARNING OUTCOMES

Upon successful completion, the apprentice is able to:

    5.1 Describe electrical/electronic theory.

        5.1.1 Describe electron flow and magnetic fields.

        5.1.2 Perform unit conversions.

        5.1.3 Define Ohm's Law.

        5.1.4 Define ground concepts.

        5.1.5 Identify the difference between conductors and insulators.

    5.2 Identify electrical/electronic components used in a microcomputer system.

        5.2.1 Define DC power supply.

        5.2.2 Define AC power supply.

    5.3 Identify safe handling procedures of electronic components.

        5.3.1 Describe the effects of Electromagnetic Field (EMF).

        5.3.2 Explain the concepts of Electrostatic Discharge (ESD) protection.

        5.3.3 List the safety measures taken to handle electronic components.

    5.4 Demonstrate multimeter troubleshooting techniques.

        5.4.1 Identify multimeter troubleshooting techniques.

        5.4.2 Test AC components.

        5.4.3 Test DC components.

        5.4.4 Test continuity.

    5.5 Inspect for basic electrical problems.

        5.5.1 Visually inspect electrical components.

        5.5.2 Use sense of smell to inspect electrical components.

    5.6 Demonstrate soldering techniques.

        5.6.1 Describe basic soldering techniques.

        5.6.2 Solder power cords.

        5.6.3 Solder mouse cords.

        5.6.4 Solder custom cables.

        5.6.5 Make minor solder repairs.

634A1.06 Desktop Platforms

GENERAL LEARNING OUTCOME
Upon successful completion of the reportable subject, the apprentice is able to install, configure, and upgrade desktop platforms.

LEARNING OUTCOMES
Upon successful completion, the apprentice is able to:
6.1 Identify the configuration of microcomputer systems.
    6.1.1 Describe common system board architectures.
    6.1.2 Identify microcomputer components.
    6.1.3 Explain the function of microcomputer components.
    6.1.4 Describe the function of communication ports.
    6.1.5 Explain Interrupt Requests (IRQs).
    6.1.6 Explain I/O addresses.
    6.1.7 Define Direct Memory Access (DMAs).
    6.1.8 Explain the function of storage devices.
    6.1.9 Identify the different types of memory.
    6.1.10 Describe power supplies.
6.2 Install and configure peripherals.
    6.2.1 Install and configure printers.
    6.2.2 Install monitors.
    6.2.3 Install keyboards.
    6.2.4 Install and configure pointing devices.
    6.2.5 Install and configure other peripherals.
6.3 Install, upgrade and configure basic components in an existing system.
    6.3.1 Replace system components.
6.4 Describe alternate modem types.
    6.4.1 Explain modem types.

634A1.07 Mobile Platforms

GENERAL LEARNING OUTCOME

Upon successful completion of the reportable subject, the apprentice is able to identify mobile platforms and install, configure, and upgrade notebooks.

LEARNING OUTCOMES

Upon successful completion, the apprentice is able to:

7.1 Identify different mobile platforms.

    7.1.1 Describe the various types of mobile platforms.

    7.1.2 Explain the use of Personal Digital Assistants (PDAs).

    7.1.3 Identify future trends in mobile platforms.

7.2 Identify the configuration of notebook systems.

    7.2.1 Identify microcomputer components in a mobile unit.

    7.2.2 Explain Interrupt Requests (IRQs).

    7.2.3 Define Direct Memory Access (DMAs).

    7.2.4 Describe the differences between desktop and mobile storage devices.

    7.2.5 Compare the different types of memory.

    7.2.6 Describe power management.

7.3 Install and configure external peripherals.

    7.3.1 Install and configure printers.

    7.3.2. Connect and configure external displays.

    7.3.3. Connect and configure external keyboards.

    7.3.4 Connect and configure external pointing devices.

    7.3.5 Install and configure other peripherals.

7.4 Install, upgrade, and configure basic components in an existing notebook environment.

    7.4.1 Replace system components.

634A1.08 Customer Service and Professionalism in the Workplace

GENERAL LEARNING OUTCOME

Upon successful completion of the reportable subject, the apprentice is able to act professionally with, and provide quality assistance to customers, colleagues, supervisors, and industry, according to established policies, procedures, and standards.

LEARNING OUTCOMES

Upon successful completion, the apprentice is able to:

8.1 Communicate effectively.

8.1.1 Utilize business language in the workplace.

8.1.2 Develop good listening skills.

8.1.3 Apply effective writing and speaking skills.

8.1.4 Write an incident report.

8.1.5 Interpret instructions and procedures.

8.2 Develop positive values and attitudes.

8.2.1 Dress appropriately in the workplace.

8.2.2 Adhere to personal hygiene practices.

8.2.3 Demonstrate a positive attitude.

8.2.4 Exhibit enthusiasm and motivation.

8.2.5 Indicate ways to incorporate skills identified in the Conference Board of Canada Employability Skills 2000+ Profile in the workplace.

8.3 Work effectively with others.

8.3.1 Cooperate with peers.

8.3.2 Demonstrate willingness to speak and ask questions.

8.3.3 Identify methods for developing personal networks.

8.3.4 Display team-leadership skills.

8.3.5 Encourage workers

8.3.6 Identify methods to manage projects.

8.4 Deal effectively with workplace stress.

8.4.1 Identify the root causes and dangers of stress in the workplace.

8.4.2 Describe techniques for dealing with workplace stress.

8.4.3 Demonstrate techniques for dealing with workplace stress.

8.4.4 Explain methods to handle suggestions and constructive criticism effectively.

8.5 Describe ethical issues in Information Technology.

8.5.1 Identify specific ethical issues.

8.5.2 Recognize personal and professional ramifications of unethical practices.

8.6 Demonstrate time management skills.

      8.6.1 Explain the importance of time management systems.

      8.6.2 Identify components of time management systems.

      8.6.3 Describe strategies for multitasking.

      8.6.4 Prioritize and schedule tasks.

8.7 Resolve conflicts effectively.

      8.7.1 Identify causes of conflict.

      8.7.2 Describe strategies for dealing with conflict.

      8.7.3 Demonstrate effective workplace conflict management skills.

      8.7.4 Use negotiation skills for everyday life.

8.8 Provide quality customer service.

      8.8.1 Define customer service.

      8.8.2 Identify resources available to assist in problem resolution.

      8.8.3 Use available resources to assist in problem resolution.

      8.8.4 Follow an escalation procedure for problem resolution.

      8.8.5 Describe various methods for measuring customer service.

      8.8.6 Communicate with the customer through all phases of problem resolution.

      8.8.7 Suggest improvements to the process.

8.9 Appreciate the importance of staying current.

      8.9.1 Identify publications and web sites relevant to the trade.

634A1.09 Basic Network Systems

GENERAL LEARNING OUTCOME

Upon successful completion of the reportable subject, the apprentice is able to implement a peer-to-peer network, operate equipment that is connected in local area networks, and define basic concepts related to local and wide area networks using appropriate hardware.

LEARNING OUTCOMES

Upon successful completion, the apprentice is able to:

9.1 Explain basic LAN concepts, terminology, and types of LAN architectures.

9.1.1 Identify reasons for networking.

9.1.2 Describe a network operating system.

9.1.3 Identify different network topologies.

9.1.4 Explain network access methods.

9.1.5 Identify types of logical media (framework) and appropriate IEEE standards.

9.1.6 Describe basic security concepts in a network environment.

9.1.7 Determine which protocols are most appropriate in a variety of environments.

9.2 Explain the Open Systems Interconnect (OSI) model.

9.2.1 Explain the impact of the International Standards Organization OSI model on networking standards.

9.2.2 Explain the functionality of the seven layers.

9.2.3 Identify the purpose of each of the layers.

9.2.4 Describe the interrelationship of the various layers.

9.2.5 Describe the implications of the OSI model on peer-to-peer networking.

9.3 Identify the components required for a LAN.

9.3.1 Explain the function of a network interface card (NIC).

9.3.2 Describe types of physical media and appropriate AWG standards.

9.3.3 Identify the connector types used in a LAN environment.

9.3.4 Repair common media types to EIA/TIA (568A/B) standards.

9.3.5 Distinguish between various types of network connectivity devices.

9.4 Configure and test the performance of a peer-to-peer LAN.

9.4.1 Configure operating system network settings.

9.4.2 Verify correct network configuration.

9.4.3 Test the connection by using the appropriate equipment/software.

9.5 Describe the limitations of peer-to-peer networks.

    9.5.1 Describe the limitations of a peer-to-peer network in terms of number of users.

    9.5.2 Distinguish between peer-to-peer networks and client-server networks.

    9.5.3 Describe situations where a peer-to-peer network would be most appropriate.

    9.5.4 Describe situations where a client server would be most appropriate.

    9.5.5 Explain the differences between share level and user level resource access.

9.6 Connect to a file server and describe the resources available on the server.

    9.6.1 Connect to a file server through a network connection.

    9.6.2 Determine the authentication methods that are in use by the server.

    9.6.3 Describe the directory structure and display of the resources that are available.

9.7 Describe signaling methods.

    9.7.1 List data communication services provided by the common carriers.

    9.7.2 Define analog and digital signals.

    9.7.3 Compare baseband and broadband transmissions.

    9.7.4 Explain multiplexing and demultiplexing.

    9.7.5 Define asynchronous and synchronous transmissions.

9.8 Examine the specifications of WAN technologies.

    9.8.1 Describe the function of routing protocols.

    9.8.2 Explain the function of WAN communication protocols.

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634A1.10 Documentation

GENERAL LEARNING OUTCOME
Upon successful completion of the reportable subject, the apprentice is able to create and maintain documentation.

LEARNING OUTCOMES
Upon successful completion, the apprentice is able to:
    10.1 Create and maintain a technical reference library.
        10.1.1 Identify the steps required to create a technical reference library.
    10.2 Create and maintain records of inventory, warranties, and copyrights.
        10.2.1 Identify the steps required to create and maintain records of warranties, licences, copyrights, and inventory.
    10.3 Create and maintain user problem documentation.
        10.3.1 Identify the steps required to create user problem documentation.
    10.4 Write a technical issue resolution process.
        10.4.1 Identify the main steps of the issue resolution process.
        10.4.2 Write a typical technical process.
    10.5 Write a technical report.
        10.5.1 Tailor tone of report to reading audience.
        10.5.2 Organize the report using the problem solution approach.
        10.5.3 Map report with appropriate headings.
        10.5.4 Create report summary.
    10.6 Develop visual representations.
        10.6.1 Explain the guidelines for illustration usage.
        10.6.2 Identify the best use of primary chart types.
        10.6.3 Determine the best type of visual for the purpose.
        10.6.4 Create basic charts using document, presentation, or graphics software.
        10.6.5 Provide appropriate legends and captions for charts and illustrations.

634A1.11 Troubleshooting

GENERAL LEARNING OUTCOME

Upon successful completion of the reportable subject, the apprentice is able to troubleshoot microcomputer systems using problem-solving techniques.

LEARNING OUTCOMES

Upon successful completion, the apprentice is able to:

    11.1 Document all relevant facts describing the incident.
            11.1.1 Interact with the user to collect all relevant facts.
            11.1.2 Utilize proper reporting procedures and protocols.
            11.1.3 Prioritize urgency of the situation.
    11.2 Identify the problem.
            11.2.1 Check for error codes.
            11.2.2 Check for sensory indicators.
            11.2.3. Check for connectivity.
            11.2.4 Check for performance inhibitors.
    11.3. Isolate the problem.
            11.3.1 Decode and interpret error messages.
            11.3.2 Consult technical reference manuals.
            11.3.3. Search internal resources for similar problems.
            11.3.4 Search the Internet for similar problems or for error codes.
    11.4 Implement a solution based on the diagnostic information.
            11.4.1 Replace suspected malfunctioning hardware components for known good parts.
            11.4.2 Uninstall/reinstall, configure, and/or upgrade suspected malfunctioning software applications.
    11.5 Verify the implemented solution.
            11.5.1 Confirm that system performs as expected.
    11.6 Document and report solutions.
            11.6.1 Record workflow.
            11.6.2 Report solution.
            11.6.3. Update knowledge base.

634C2.01 Introduction to Advanced Networking

GENERAL LEARNING OUTCOME
Upon successful completion of the reportable subject, the apprentice is able to install a network operating system and utilize the OSI model to support advanced networking concepts.

LEARNING OUTCOMES
Upon successful completion, the apprentice is able to:

    1.1 Analyze the implications of Layer 1 of the OSI model.

        1.1.1 Differentiate between the physical characteristics of copper, fibre, and wireless technologies.

    1.2 Analyze the implications of Layer 2 of the OSI model on network traffic flow.

        1.2.1 Explain the linkages between the functions of the Media Access Control (MAC) layer and resolution protocols.

        1.2.2 Analyze the hardware Layer 2 functionality of switches.

    1.3 Analyze the implications of Layer 3 of the OSI model routing and routed protocols.

        1.3.1 Describe the TCP/IP Addressing Scheme.

        1.3.2 Explain the advantages and disadvantages of static and dynamic routing.

        1.3.3 Analyze the hardware Layer 3 functionalities of routers.

        1.3.4 Describe the various types of router interface modules.

        1.3.5 Explain the advantages and disadvantages of connectionless and connection-oriented protocols.

        1.3.6 Analyze network services.

    1.4 Analyze the application of security and control mechanisms within the OSI model.

        1.4.1 Explain the use of hardware and software firewalls.

        1.4.2 Describe the purpose of Quality of Service (QoS) control mechanisms and their application.

        1.4.3 Describe commonly used tunneling and encryption methods.

        1.4.4 Explain industry-standard authentication methods.

        1.4.5 Name commonly used network monitoring mechanisms.

634C2.02 Disaster Recovery

GENERAL LEARNING OUTCOME

Upon successful completion of the reportable subject, the apprentice is able to explain the need for and assess a network recovery procedure for inclusion in the organizational disaster recovery and business continuity plans.

LEARNING OUTCOMES

Upon successful completion, the apprentice is able to:

      2.1 Identify possible disaster scenarios.

            2.1.1 Define the sources of potential disasters.

      2.2 Identify the steps required to formulate a disaster recovery plan for the network.

            2.2.1 Assess business impact.

            2.2.2 Evaluate and prioritize the risk associated with the loss of network components and data to the organization.

            2.2.3 Assess a network and system recovery strategy.

634C2.03 Network Infrastructure Design

GENERAL LEARNING OUTCOME

Upon successful completion of the reportable subject, the apprentice is able to design a network infrastructure and system environment based on the customer's requirements, resource limitations, and industry best practices.

LEARNING OUTCOMES

Upon successful completion, the apprentice is able to:

    3.1 Identify customer requirements.

        3.1.1 Define and document the customer's logical requirements.

    3.2 Confirm the physical site.

        3.2.1 Document and inventory the customer's physical requirements and resources.

    3.3 Design the preliminary logical network infrastructure and system environment for present and future growth projections based on business continuity and disaster recovery Requirements.

        3.3.1 Choose a WAN topology.

        3.3.2 Choose a LAN topology.

        3.3.3 Develop system security, business continuity, and disaster recovery strategies.

        3.3.4 Select workstation, PDA, and server platforms.

        3.3.5 Identify network media.

        3.3.6 Determine the network hierarchical scheme, redundancy, and backup strategy.

        3.3.7 Design the preliminary physical network infrastructure environment.

        3.3.8 Gain customer design approval.

        3.3.9 Formulate hardware procurement recommendations.

634C2.04 Installation and Configuration

GENERAL LEARNING OUTCOME

Upon successful completion of the reportable subject, the apprentice is able to install, configure, and test the network environment to industry standards and customer requirements.

LEARNING OUTCOMES

Upon successful completion, the apprentice is able to:

4.1 Verify that the hardware and software inventory and physical site readiness meet the network design requirements.

4.1.1 Confirm the accuracy of the hardware and software received.

4.1.2 Inspect the site environment for installation readiness.

4.2 Install and configure the network components to industry standards.

4.2.1 Prepare servers (for each server)

4.2.2 Install network operating system.

4.2.3 Prepare workstations and PDAs

4.2.4 Install required cable run lengths.

4.2.5 Install patch panels and equipment racks.

4.2.8 Install system and network components.

4.2.9 Test network environment.

4.2.10 Confirm network environment meets design requirements.

4.3 Diagnose and troubleshoot network environment problems as required to verify network design.

4.4 Finalize "as-built" documentation.

634C2.05 Network Repair

GENERAL LEARNING OUTCOME

Upon successful completion of the reportable subject, the apprentice is able to isolate, diagnose, and repair common network environment problems.

LEARNING OUTCOMES

Upon successful completion, the apprentice is able to:

5.1 Use standard troubleshooting techniques to investigate network environment problems.

 5.1.1 Gather relevant information regarding the network environment.

 5.1.2 Identify the probable cause.

5.2 Isolate network environment problem.

 5.2.1 Isolate network point of failure.

5.3 Implement a repair strategy.

 5.3.1 Review all information.

 5.3.2 Formulate the strategies.

 5.3.3 Apply solution(s).

5.4 Verify the repair.

 5.4.1 Test the network.

5.5 Document solution(s).

634C2.06 Network Maintenance and Optimization

GENERAL LEARNING OUTCOME
Upon successful completion of the reportable subject, the apprentice is able to maintain and optimize a network environment.

LEARNING OUTCOMES
Upon successful completion, the apprentice is able to:
  6.1 Maintain the network environment.
       6.1.1 Perform physical maintenance.
       6.1.3 Monitor network/server performance.
  6.2. Optimize network performance.
       6.2.1 Ensure optimal switch functionality.
       6.2.2 Ensure optimal router functionality.
       6.2.3 Ensure optimal server functionality.
  6.3. Verify network performance.
       6.3.1 Perform baseline testing.
       6.3.2 Compare results to "as built" baseline test results.
  6.4. Document network and system changes.