Course: Network+ (N10-009)

Contact Hours: 36

Prerequisite: Computer Literacy

Abstract

This course covers network technologies, installation and configuration, media and topologies, management and security.

Target Audience

- Network Administrator
- Network Technician
- Network Installer
- Help Desk Technician
- IT Cable Installer

Learning Outcomes

On completion of this course, learners will be able to:

1. Explain the characteristics of the OSI model layers and encapsulation concepts
2. Explain the characteristics of network topologies and network types
3. List and describe network media and hardware components
4. Identify and use different IP addressing schemes
5. Explain the use and purpose of common ports, protocols and network services
6. Configure and deploy common Ethernet switching features
7. Install and configure wireless standards and technologies
8. Summarize cloud concepts and connectivity options
9. Compare and contrast routing technologies
10. Compare and contrast various devices and their appropriate placement on the network
11. Identify the appropriate statistics and sensors to ensure network availability
12. Explain the purpose of organizational documents and policies
13. Explain high availability and disaster recovery concepts
14. Explain common security concepts and common types of attacks
15. Given a scenario apply appropriate network hardening techniques

Course Content

1. Networking Concepts

- OSI model layers, devices & appliances, cloud architecture
- Common ports/protocols, transmission media
- IP addressing, routing, evolving network technologies

2. Network Implementation

- Wired and wireless technologies
- Switching and routing configuration
- Physical installations and environmental concerns

3. Network Operations

- Documentation practices
- Monitoring methods and disaster recovery
- Service configuration and management interfaces

4. Network Security

- Logical and physical security
- Attack types (e.g., DoS, spoofing, social engineering)
- Hardening techniques and access control

5. Network Troubleshooting

- Structured troubleshooting methodology
- Cable/interface issues, performance bottlenecks
- Tools: CLI commands, protocol analyzers, testers

Assessment Criteria

In order to achieve Learning Outcome…	The Learner must…
1. Identify the basic components of network theory	Describe topology Define Networks Characterize network components
2. Identify the major network communications methods	Define Wired vs wireless communication
3. Identify network data delivery methods	Describe the OSI model Describe TCP\IP Protocol Stack Define Packets and Frames Describe Local vs Remote communication
4. List and describe network media and hardware components	Identify UTP, STP, Coax, Fiber Optic cables Identify hubs, switches, routers, firewalls etc
5. Identify the major types of network implementations	Define Ethernet, Active Directory domains and workgroups
6. Identify the components of a TCP/IP network implementation	Describe IPv4 and IPv6 Perform IPv4 subnetting
7. Identify the major services deployed on TCP/IP networks	Describe DHCP and DNS
8. Identify the components of a LAN implementation	Define connectivity devices Understand routing basics Identify Routing protocols
9. Identify the components of a WAN implementation	Identify WAN connectivity methods Identify WAN technologies Identify WAN topology Identify Unified communication
10. Identify major issues and technologies in network security	Describe firewalls Describe Intrusion Detection Describe physical security
11. Identify the components of a remote network implementation	Define and identify types of VPNs
12. Identify major issues and technologies in disaster recovery	Define Hot vs Cold Sites Describe data recovery options
13. Identify major data storage technologies and implementations	Describe a NAS Describe cloud storage options
14. Identify the primary network operating systems	Identify Server OS Differentiate Server vs Client OS
15. Identify major issues, models, tools, and techniques in network troubleshooting	Use cable tester Use network monitoring software Identify the uses of protocol analyzers and other tools Describe and use troubleshooting methodology

Essential Learning Resources:
Websites
http://www.comptia.org