



# CompTIA Network+® (2009 Objectives)

## COMP-110

### **Course Description:**

This CompTIA Network+® (2009 Objectives) course is designed to allow students to build on their existing user-level knowledge and experience with personal computer operating systems and networks to present fundamental skills and concepts that will be used on the job in any type of networking career. If students are pursuing a CompTIA technical certification path, the CompTIA A+ certification is an excellent first step to take before preparing for the CompTIA Network+ certification.

Students will identify and describe all the major networking technologies, systems, skills, and tools in use in modern PC-based computer networks, and learn information and skills that will be helpful as you prepare for the CompTIA Network+ certification examination, 2009 objectives (exam number N10-004).

### **Course Objectives:**

Upon completion of the CompTIA Network+® (2009 Objectives) course, students will be able to:

- Identify the basic components of network theory
- Identify the major network communications methods
- Identify network data delivery methods
- List and describe network media and hardware components
- Identify the major types of network implementations
- Identify the components of a TCP/IP network implementation
- Identify the major services deployed on TCP/IP networks
- Identify the components of a LAN implementation
- Identify the components of a WAN implementation
- Identify major issues and technologies in network security
- Identify the components of a remote network implementation
- Identify major issues and technologies in disaster recovery
- Identify major data storage technologies and implementations
- Identify the primary network operating systems
- Explore tools, methods, and techniques used in managing a network
- Describe how to troubleshoot network issues

**Prerequisites:**

- Basic Windows skills and a fundamental understanding of computer concepts are required
- CompTIA A+ certification, or the equivalent skills and knowledge, is helpful but not required

**Audience:**

- Entry-level computer support professionals with basic knowledge of computer hardware, software, and operating systems, who wish to increase their knowledge and understanding of networking concepts and skills to prepare for a career in network support or administration, or to prepare for the CompTIA Network+® (2009 Objectives) exam (exam number N10-004)
- Someone with nine months or more of professional computer support experience as a PC technician or help desk technician
- Student with network experience is helpful but not required; A+ certification or the equivalent skills and knowledge is helpful but not required

**Course Duration:**

5 Days

**Course Topics:****I. Network Theory**

- Networking Terminology
- Network Building Blocks
- Standard Network Models
- Physical Network Topologies
- Logical Network Topologies
- Network Categories

**II. Network Communications Methods**

- Transmission Methods
- Media Access Methods
- Signaling Methods

**III. Network Data Delivery**

- Data Addressing and Delivery

- Delivery Techniques

#### **IV. Network Media and Hardware**

- Bounded Network Media
- Unbounded Network Media
- Noise Control
- Network Connectivity Devices
- Wiring Distribution Components

#### **V. Network Implementations**

- The OSI Model
- Ethernet Networks
- Token Ring Networks
- Fiber Distributed Data Interface (FDDI) Networks
- Wireless Technologies and Standards

#### **VI. Networking with TCP/IP**

- Families of Protocols
- The TCP/IP Protocol
- IP Address Basics
- Custom IP Addresses
- The IP Version 6 Protocol
- The TCP/IP Protocol Suite

#### **VII. TCP/IP Services**

- IP Address Assignment Methods
- Host Name Resolution
- TCP/IP Utilities
- TCP/IP Upper-Layer Services
- TCP/IP Interoperability Services

#### **VIII. Local Area Network Infrastructure**

- Bridges and Switches
- IP Routing
- Static IP Routing
- Dynamic IP Routing

- Control Data Movement with Filters and VLANs

## **IX. WAN Infrastructure**

- WAN Switching Technologies
- WAN Transmission Technologies
- WAN Connectivity Methods
- Voice Over Data Systems

## **X. Network Security**

- Computer Security Basics
- Authentication
- Data Encryption
- Protect Network Traffic with IP Security (IPsec)
- Internet Security
- Local Security
- Common Threats
- Threat Mitigation Techniques
- Intrusion Detection and Prevention
- Educate Users

## **XI. Remote Networking**

- Remote Network Architectures
- Remote Access Networking Implementations
- Virtual Private Networking
- Remote Control Computing

## **XII. Disaster Recovery**

- Examine Configuration Management Documentation
  - Plan for Disaster Recovery
  - Fault Tolerance Methods
  - Data Backup
- 
- Network Data Storage
  - Enterprise Data Storage
  - Network-Attached Storage (NAS)
  - Storage Area Network (SAN) Implementations
  - Clustering

### **XIII. Network Operating Systems**

- UNIX and Linux Operating Systems
- Apple Mac OS X
- Microsoft Operating Systems
- Novell Open Enterprise Server

### **XIV. Network Management**

- Monitoring Tools
- Network Baselining
- Network Optimization

### **XV. Network Troubleshooting**

- Troubleshooting Models
  - TCP/IP Troubleshooting Utilities
  - Hardware Troubleshooting Tools
  - Common Connectivity Issues
- 
- Appendix A: Mapping Network+ Course Content to the CompTIA Network+ Exam Objectives
  - Appendix B: Additional IP Addressing and Subnetting Practice
  - Appendix C: CompTIA Network+ Acronyms