



## Web Foundations Series

### Network Technology Associate v2.2

---

*Network Technology Associate* teaches essential networking technologies and skills, including TCP/IP, stable network creation, wireless networking, mobile devices and network troubleshooting. You will learn to use various network components and protocols that enable users to share data quickly and easily. You will explore the different types of transmission media, and you will learn how network architecture and topologies provide for efficient and secure communication. In addition, you will learn about the OSI reference model and its relationship to packet creation, and you will compare and contrast the OSI model with the Internet architecture model.

You will study the functions, features and technologies associated with Internet services, such as cloud computing. You will learn about the advantages and disadvantages of Bring Your Own Device (BYOD), the growing trend of employees bringing their personal mobile devices to work. BYOD policies and enforcement strategies will also be covered.

You will learn about the benefits of implementing a Content Management System (CMS). You will also achieve competency in performing basic hardware and operating system maintenance procedures. In addition, you will study mobile computing devices and mobile operating systems.

You will also learn about the importance of routing, and you will explore IP addressing, IP address classes and subnet masks. Finally, you will explore essential network security concepts, Internet-based challenges facing today's users, and methods you can use to secure networks and network transmissions, including authentication, encryption and firewalls.

### Topics

---

#### Introduction to Networking

- Overview of Networks and Protocols
- Telephony and Convergence
  - Networking
- Networking Evolution
- Client/Server Model
- Network Operations Center (NOC)
- Networking Categories
- Network Topologies
- Network Operating System
- Microsoft Windows Servers
- UNIX/Linux
- The Need for Protocols
- OSI Reference Model
- Data Encapsulation
- Packets
- OSI/RM Protocol Examples
- Transmission Control
  - Protocol/Internet Protocol (TCP/IP)
- Binding Protocols
- Local Area Network (LAN)
- Wide Area Network (WAN)
- Internet Exchange Point (IXP)

#### Networking Components and Standards

- Overview of Networking
  - Components
- Common Network Components
- Transmission Media
- Wireless Network Technologies

- Transmission Types
- IEEE LAN Standards
- Carrier Systems
- Virtualization

#### Connecting to the Internet

- Introduction to Connecting to the Internet
- Mobile Computing
- Mobile Devices and Cloud
  - Computing
- Configuring a Wireless Network
- Fourth-Generation (4G) Wireless
- TCP/IP
- Internet Architecture
- Internet Protocols
- Demultiplexing
- Introduction to Routing
- Routing Protocols
- Port Numbers
- Internet Protocol Version 4 (IPv4)
- Internet Protocol Version 6 (IPv6)
- Configuring TCP/IP
- Diagnostic Tools for Internet
  - Troubleshooting

#### Internet Services

- Overview of Internet Services
- Cloud Services
- The Fragility of the Cloud
- Internet Servers
- Choosing Web Server Products
- Content Management System (CMS)

#### Hardware and Device Connectivity

- Introduction to Hardware and
  - Device Connectivity
- Motherboard
- Storage Devices
- Network Interface Card (NIC)
- Optical Discs
- Device Connectivity
- System Management
- Preventive Maintenance
- Software Troubleshooting

#### Network and Cloud Security Risks

- Importance of Network Security
- Bring Your Own Device (BYOD)
- The Mobile Phone BYOD Spectrum
- Cloud Security Threats
- Cloud Disaster Recovery
- Malware (Malicious Software)
- Overview of Network Attack Types
- Defeating Network Attacks
- Authentication
- Encryption
- Firewalls
- Security Zones
- Virtual Private Network (VPN)
- Security Audit
- Other Security Threats



## Target Audience

---

All students preparing to enter or continue in the workforce can benefit from the CIW *Network Technology Associate* course and/or certification:

- High school students
- College students
- Technical/trade school students

Professionals in all industries can benefit from the CIW *Network Technology Associate* course and/or certification:

- IT professionals
- Healthcare professionals
- Legal professionals
- Marketing professionals
- Graphic artists
- Business professionals

## Prerequisites

---

No prior experience using the Internet, developing Webpages or configuring networks is necessary. However, students should be familiar with an operating system such as Microsoft Windows 10 before taking this course. The CIW Web Foundations courseware does not provide entry-level computer literacy. Rather, it builds upon computer literacy training and certifications such as Microsoft Office Specialist ([www.microsoft.com](http://www.microsoft.com)).