



# Web Foundations Series

## Network Technology Associate

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*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

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#### 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  
Real-World Case Study:  
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)  
Real-World Case Study  
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

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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

## Job Responsibilities

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Understand the common core of Internet knowledge, and apply the foundation skills required for further specialization.

## Prerequisites

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No prior experience using the Internet, developing Web pages or configuring networks is necessary. However, students should be familiar with an operating system such as Microsoft Windows 7 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)).