CIWv5 Foundations Series

Network Technology Foundations v2.0

Network Technology Foundations teaches essential networking technologies and skills, including TCP/IP, stable network creation, wireless networking 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 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 and features of internetworking server types, and 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 learn about mobile computing devices and the importance of RFC documents.

You will also learn about the importance of routing, and 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
TCP/IP
IPX/SPX
Binding Protocols
Local Area Network (LAN)
Wide Area Network (WAN)
Internet Exchange Point (IXP)
Common Network Components
Transmission Media
Wireless Network Technologies
Transmission Types
IEEE LAN Standards
T-Carrier System
E-Carrier System
SONET/SDH
Downloading Files with BitTorrent
Virtualization

TCP/IP Suite and Internet Addressing

Introduction to TCP/IP
Internet Architecture
Requests for Comments (RFCs)
Internet Protocols
Demultiplexing
Introduction to Routing
Routing Protocols
Port Numbers
Internet Addressing
Subnet Mask
Internet Address Classes
Internet Protocol Version 6 (IPv6)
System Configuration and IP Addresses
Diagnostic Tools for Internet Troubleshooting

Internetworking Servers

Overview of Internetworking Servers
File and Print Servers
HTTP Server Essentials
Database Servers
Proxy Servers
Mail Servers
Instant Messaging (IM)
Mailing List Servers
Media Servers
DNS Servers
FTP Servers
News Servers
Certificate Servers
Directory Servers
Fax Servers
Transaction Servers
Choosing Web Server Products
Content Management System (CMS)

Hardware and Operating System Maintenance

Basic Hardware and System Maintenance
Motherboard
IRQs, I/O Addresses and DMA
Mass Storage Device Interfaces
Network Interface Card (NIC)
Common Peripheral Ports
Power Requirements
Optical Discs
TV Tuner Card
HDMI Connections
Mobile Computing
Netbooks
Client Operating System Management
Software Licensing
Partitions and Logical Drives
File System Types
File System Management Tools
Troubleshooting Software
Remote Management and Troubleshooting

Network Security and Personal Privacy Protection

Importance of Network Security
Viruses and Worms
Overview of Network Attack Types
Defeating Attacks
Authentication
Encryption
Firewalls
Firewall Topologies
Security Zones
Virtual Private Network (VPN)
Security Audit
Uninterruptible Power Supply (UPS)
Personal Privacy and the Internet
Personal Protection and the Internet

Target Audience

All professionals required to use the Internet in their daily job functions. Information in this course is required for all levels of specialization in the CIW program.

Job Responsibilities

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

Prerequisites

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 XP before taking this course. The CIW 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*) and IC^3 (*www.certiport.net*).