


Introduction to Networking: Home and Peer-to-Peer Networks

OVERVIEW

Introduction to Networking demonstrates how to build and operate a small computer network, such as a home network. The course teaches the fundamentals of networking and data communication and outlines how the all-digital network transports voice, video and data. It also identifies and explains the hardware, software, protocols and signals that are essential to understanding how networks operate. Students learn how signals travel across different types of physical network structures and how those signals carry useful data from one device to another. Networking terminology and acronyms are defined and explained. The course also demonstrates how the same key principles and components form the foundation of all networks, from the smallest peer-to-peer systems to the worldwide Internet. Introduction to Networking is designed for those who have a basic understanding of personal computers and their applications.

Delivery Options:

 Learning is a combination of online and textbook activities.

Completion Time:

Varies based on the student's self-study pace, however, the maximum time allowed is six months from enrollment.

BENEFITS

Upon completion students will:

- » understand how to set up and administer a simple home or office network
- » identify common problems that can stop communication in a network
- » demonstrate the use of common types of networking hardware and software
- » relate how the all-digital network delivers voice, video and data services
- » explain to a customer how the Internet works
- » earn a \$15 voucher toward SCTE membership and certification enrollment fees
- » earn three hours of college credit
- » use this course to help prepare for SCTE's Broadband Telecom Center Specialist Data Endorsement

Ideal for:

Technical personnel supporting Internet-based services, including:

- » broadband technicians
- » network technicians
- » headend technicians
- » access bandwidth technicians
- » system technicians

RELATED COURSES

Students completing this course should then enroll in:

- » Understanding Voice and Data Networks
- » Computers and Broadband Modems
- » Internetworking with TCP/IP

TRAINING FEATURES

- » Knowledge-based, broadband and job-specific content
- » Highly illustrated and easy to read course materials
- » Curriculum advising
- » 24/7 lesson feedback and progress monitoring at www.jonesncti.com
- » Online testing

Visit www.jonesncti.com/coursepolicy.htm for important information on computer hardware/software requirements and student-to-student transfer and extension limitations



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COURSE OBJECTIVES

Upon completing this course, students will be able to:

1. identify the different types of networking hardware and software
2. describe the various physical and logical topologies used and discuss their implementation
3. discuss industry networking standards and enforcement
4. explain how network signals are transmitted over wired and wireless systems
5. describe what protocols are and why they are necessary
6. describe the different types of addresses that computers use to send and receive information
7. explain the OSI Model, and describe how information flows between two communicating computers
8. describe the technologies used in local area networks (LANs) and wide area networks (WANs)
9. identify the common types of networking devices and explain the purpose of each
10. explain how the Internet works in simple terms
11. understand how to build and operate a small peer-to-peer network
12. describe remote connectivity

COURSE OUTLINE

1. Computers and Software in Networks

Devices on networks, internal computer components: CPU, I/O, memory and NICs, software and popular operating systems

2. Carrier Signals, Cable Types and Network Topologies

Communication and signals, network topologies and overview of a structured wiring system

3. Computer Protocols and Services

Protocols, layers of protocols and services and communicating across a network

4. The OSI Model

Introduction to the OSI model, the physical layer, the data link layer, the network layer, the transport layer, the session layer, the presentation layer and the application layer

5. LANs

LAN data link protocols, Ethernet, token ring and FDDI, wireless LANs, LAN software architectures and information flow between client and server

6. Network Components

Repeaters and hubs, bridges, switches, routers and gateways

7. WANs

Point-to-point WAN services and switched WAN services

8. Integrating the Course Elements

Building a small, peer-to-peer network and expanding the small network



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