

**Course Name:** Business Networking

**Course Overview:**

This course is designed as a hands-on course focused on common technologies and equipment utilized in a business network. This includes both traditional LAN technologies as well as wireless networking. Networking and associated equipment can be complex and no two networks are alike. Speak with one of our training specialists to see how this course can be customized or combined with other TESSCO courses for a complete solution. At the end of this course the attendee will have a solid understanding of the following: networking fundamentals and principles, OSI model and different types of networks, test and maintenance of networks, and how to troubleshoot a network.

**Course Length:** 3 days

**Who should attend?**

- LAN/WAN/Internetworking Technicians
- Network Administrators
- Site operators and managers
- Managers and supervisors
- Non-technical employees who interface with networks

**You will learn:**

- Install basic networks and equipment
- Configure common network equipment
- Work with common PC Operating systems
- Troubleshoot LAN, WAN and Internetworking systems to minimize downtime
- Operate common test equipment
- Applicable product installation, operation and result interpretation
- Wi-Fi Overview

**Prerequisites:** None

**Customizable Course:** Yes

**Course Content:**

Networking Overview

- What is a Network?
- Network Architecture
- Physical Hardware
- Logical Network – Protocols
- LANs v/s WANs/WWW/ Internet
  - Private v/s Public Networks



- Virtual Private Networks
  - Packets, Frames and Cells
  - WAN to LAN interfaces
- Isolating problems between WAN/LAN

#### Benefits of Networking

- Sharing Resources
- Centralized network Management

#### OSI Model Review

- Functional understanding of the model
- Practical use of the model

#### Sharing Data between Computers

- Logical Topologies
- Ethernet
- Token Ring
- Network Types
- Client/Server
- Peer-to-Peer

#### Networking Hardware

- Cabling/Wireless
- PCs/ NIC Cards
- Hubs
- Switches
- Routers
- Servers

#### Network Protocols

- TCP/IP, UDP, SMTP...
- IP Basics
- Static/Dynamic
- Subnet Masking
- Classes of addresses

#### Installing the Network

- Installing the Hardware
- Cabling
- Configuring Software

#### PC Operating Systems Overview Common PC Commands

- cmd. ipconfig/release, ipconfig/renew, ping...

#### Test Equipment and Maintenance



- Types of test equipment
- Testing from a PC/Computer
- Fault isolation techniques
- Test Access Points
- Customer specific test equipment

#### Network Administration

- Administering the Network
- Network Security
- Firewall Basics

#### Routing Data across the Network – Interconnectivity Router Overview

- How Routers work
- Routers and the Internet
- Routing Tables

#### Configuring the Router/Communicating with the Router

- Console Port
- Auxiliary Port
- Telnet
- HTTP Server User Interface

#### Router Security/Network Troubleshooting and Maintenance

- Congestion
- Equipment
- User Errors
- Security Issues
- LAN/WAN Internetworking

#### Wi-Fi Networks

- Wi-Fi/Wi-Max Overview
- 802.x standards
- Access Points
- SSID
- Channel Assignment
- Signal Interference
- Address assignment

Extensive Hands-on Exercises throughout course

