

**Course Name:** WLAN Fundamentals

**Course Overview:** This course will provide an overview of WiFi standards and technologies and will give the student the ability to layout out and design a wireless network, configure wireless routers and wireless network adapters, add security to wireless networks, and to use the wireless network. An overview of WiFi standards

**Course Length:** 1 Day

**Who should Attend:**

- Wireless Networking Engineers
- IT Staff
- IT Managers
- Wireless Network Support Personnel
- Anyone interested in learning more about configuring and maintaining WiFi networks

**You will Learn:**

- Wireless Network fundamentals
- Wireless Network Architecture
- Different Wireless Standards
- How to deploy Wireless Hotspots and connect the WLAN to the WAN
- How to Secure a Wireless Network
- How to Measure Wireless Performance and Signal Strength
- How to Configure computers to connect to a Wireless Network

**Prerequisites:** None, however a data fundamentals course is extremely helpful.

**Customizable Course:** Yes

**Course Content:**

Wireless Networking Overview

- History of Wireless Networks
- Why Wireless

Wireless Network Architecture

- Wireless Basics
- RF Communication
- Network Design
- Transporting Data
- Ethernet and IP packets

Wireless LANs (WiFi Standards)

- 802.11a/b/g



- 802.11h
- 802.11i
- 802.11n

## Wireless Access Points

### Deploying Hotspots

- Wireless Networking Equipment
- Routers
- Wireless Access Points
- Switches
- Adapter cards

### Single vs. Multiple Access points

- SSID
- Channel assignment
- Signal interference
- Address assignment

### IP addresses

- Static
- Dynamic (DHCP)

## Wired and Wireless access points on the same LAN

### Connecting to the WAN

- DSL
- Cable
- Dedicated service – T1; DS3; Fiber

### WiFi as the WAN

- WISP
- WiMAX

### Internet Connectivity

- ISP requirements

### Two sides to every router

- WAN/LAN
- Configuring the WAN and LAN

### Performance Measurement

- Distance limitations
- Signal Strength and Throughput



## WLAN Throughput

- Testing Internet connectivity
- Measuring Internet throughput
- Monitoring performance

## WLAN Security

- Threats to the WLAN
- SSID; access control
- Understanding Wireless Encryption
- Wired Equivalent Privacy (WEP)
- Wi-Fi Protected Access (WPA)
- Steps to a Secure Wireless Network

## Configuring Network Computers

- Win98, 2000, XP and Vista settings
- Installing network adapters
- TCP/IP properties
- Network clients
- File and Printer sharing
- Workgroups
- Internet connection Firewalls
- 3rd party Firewall software

## Voice over Wi-Fi

## Equipment Interoperability Problems

## Hands-on Labs

