

Wireless Networking Certification Courses



The CWNA (Certified Wireless Network Administrator) certification is a foundation level wireless LAN certification for the CWNP Program.

Your CWNA certification will get you started in your wireless career by ensuring you have the skills to successfully administer enterprise-class wireless LANs.

The Wireless LAN Administration course provides the networking professional a complete foundation of knowledge for entering into or advancing in the wireless networking industry. From basic RF theory to 802.11 frame exchange processes, this course delivers hands on training that will benefit the novice as well as the experienced network professional.

Benefits of Your CWNA Certification

- Opens the door to wireless networking opportunities in the enterprise.
- Offers a career differentiator, with enhanced credibility and marketability.
- Shows that you are a technical leader with the ability to successfully implement wireless solutions for your organization or client.
- Keeps your skills ahead of the curve in the rapidly changing field of networking.

Course Contents:

Introduction to 802.11 WLANs

- Discuss the standards organizations responsible for shaping the 802.11 Wireless LAN protocol
- Learn how standards compliance is enforced for 802.11 WLAN vendors
- Examine the 802.11 standard and various amendments
- Discuss additional networking standards that are commonly used to enhance 802.11WLANs

Radio Frequency Fundamentals

- Physical aspects of RF propagation
- Types of losses and attenuation that affect RF communications
- Types of modulation used for wireless communications
- How channels and bandwidth are related to each other in wireless networks
- Three types of Spread Spectrum used in wireless networking

RF Math and System Operating Margin

- RF units of measure
- Basic RF mathematics
- RF signal measurements
- Understand link budgets
- Define and calculate System Operating Margin (SOM)

802.11 Service Sets

- Explain three types of service sets defined for use within 802.11 WLANs
- Roaming within a WLAN
- Load-balancing as a method to improve congestion in WLANs

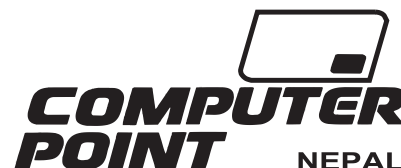
RF Power Output Regulations

- Understand international, regional, and local RF spectrum management organizations
- Understand RF channels in the unlicensed 2.4 GHz and 5 GHz frequency ranges
- How power output limitations are enforced by the FCC for Point-to-Multipoint (PtMP) and Point-to-Point (PtP) wireless connections

Training Partners:



Learning Solutions
Information Worker Solutions
Networking Infrastructure Solutions



AN ISO 9001: 2000 CERTIFIED ORGANIZATION

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Power over Ethernet

- Recognize the two types of devices used in Power over Ethernet (PoE)
- Recognize the differences between the two types of Power Sourcing Equipment (PSE)
- Understand the two ways in which power can be delivered using PoE
- Understand the importance of planning to maximize the efficiency of Power over Ethernet

Wireless LAN Operation

- Ad Hoc networks ● Infrastructure networks ● Bridged networks
- Repeater networks ● Mesh networks ● WLAN switched networks
- Enterprise Wireless Gateway networks ● Enterprise Encryption Gateway networks
- Virtual AP networks ● Evolution of WLAN architectures
- WLAN Management

WLAN Security

- Security Policy and Procedures
- Legacy 802.11 Security Components
- 802.11i Security Components
- WPA-Personal ● WPA-Enterprise ● WPA2-Personal ● WPA2-Enterprise
- Baseline Security Practices (SOHO, SMB, Enterprise)

802.11 Analysis and Troubleshooting

- Introduction to 802.11 Protocol Analysis
- 802.11 Data Frames ● 802.11 Control Frames ● 802.11 Management Frames
- Frame Fragmentation ● Power Saving operations ● Transmission Rate

Coordinating 802.11 Frame Transmissions

- Differences between CSMA/CD and CSMA/CA
- Distributed Coordination Function (DCF)
- Quality of Service in 802.11 WLANs

Antennas

- Antenna characteristics and behaviors
- Types of antennas commonly used with WLANs
- Advanced antenna systems
- Antenna placement and mounting
- Antenna safety
- Types of antenna cables, connectors, and accessories

Site Surveying

- Understanding the need for a site survey
- Defining business requirements and justification
- Facility analysis
- Interviewing network management and users
- Identifying bandwidth requirements
- Determining contours of RF coverage
- Documenting installation problems
- Locating interference
- Reporting methodology and procedures
- Understanding specifics of each vertical market
- Understanding the customer's network topology
- Creating appropriate documentation during and after the site survey
- Understanding safety hazards
- Using appropriate hardware and software to perform the survey
- Understanding the need for spectrum analysis
- Manual RF site surveys
- Predictive site surveys
- Dense AP deployment