Training: CWNP
CWNA Enterprise Wi-Fi Administration

FORM OF TRAINING	MATERIALS	PRICE	DURATION
Traditional	Hardcopy	1320 EUR	5 days
Traditional	CTAB Tablet	1420 EUR	5 days
Distance learning	Hardcopy	1320 EUR	5 days
Distance learning	CTAB Tablet	1320 EUR	5 days

LOCATIONS

Krakow - 5 Tatarska Street, II floor, hours: 9:00 am - 4:00 pm
Warsaw - 17 Bielska Street, hours: 9:00 am - 4:00 pm

TRANING TERMS

2019-10-07 | 5 days | Warszawa

TRAINING GOALS:

The **Enterprise Wireless LAN Administration** course, whether in an academic format or a 5-day fast-track format, 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.

CONSPECT:

- 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 802.11 WLANs
- Radio Frequency Fundamentals
  - Physical aspects of RF propagation
  - Types of losses and attenuation that affect RF communications

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ul. Bielska 17, 02-394 Warszawa, tel.: (22) 417 41 70

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- Types of modulation and coding schemes (MCS) used for 802.11 communications
- How channels and bandwidth are related to each other in wireless networks
- Types of Spread Spectrum used in wireless networking

- 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
  - Understand how power output limitations are enforced by the FCC for Point-to-Multipoint (PtMP) and Point-to-Point (PtP) wireless connections
- 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
  - Understand the two standards currently available for PoE
  - Powering 802.11n APs
- Basic WLAN Analysis
  - Protocol Analysis
  - 802.11 Frame Types
  - Data Frames
  - Control Frames
  - Management Frames
  - Protection Mechanisms
  - Legacy Power Saving operations
  - Transmission Rates
- Coordinating 802.11 Frame Transmissions
  - Differences between CSMA/CD and CSMA/CA
  - Distributed Coordination Function (DCF)
  - Network Allocation Vector (NAV)
  - Clear Channel Assessment (CCA)
  - Interframe Spacing (IFS)
  - Contention Window (CW)
  - Quality of Service in 802.11 WLANs
  - Point Coordination Function (PCF)
  - Hybrid Coordination Function (HCF)
- RF Math and System Operating Margin
  - RF units of measure

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- Basic RF mathematics
- RF signal measurements
- Understand link budgets

- 802.11 Service Sets
  - Three types of service sets defined for use within 802.11 WLANs
  - 802.11 authentication and association
  - 802.11 network infrastructure
  - Roaming within a WLAN
  - Load-balancing as a method to improve congestion in WLANs
  - The 802.11n Amendment
- Challenges addressed by 802.11n
  - 802.11n PHY/MAC layer enhancements
  - MIMO and SISO systems
  - 802.11n coexistence mechanisms
  - 802.11n integration and deployment considerations
  - 802.11n site surveying and analysis
- Wireless LAN Operation
  - WLAN Hardware Devices
  - WLAN Software
  - Architecture Types and Evolution
  - Ad Hoc & Infrastructure Connectivity Operation
  - AP Modes
  - Bridging & Repeating
  - Mesh Networking
  - WLAN Controller Deployments
  - WLAN Profiles
  - Multichannel Architecture (MCA)
  - Single Channel Architecture (SCA)
  - WLAN Management Systems (WNMS)
- WLAN Security
  - The Importance of WLAN Security
  - Security Policy
  - Legacy WLAN Security Mechanisms
  - Modern WLAN Security Mechanisms
  - Baseline WLAN Security Practices
- Site Surveying

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- Defining an RF site survey
- Spectrum Analysis
- Types of RF site surveys
- Manual RF site surveys
- Predictive Modeling
- Dense AP deployments

- Antennas
  - Types of antennas and antenna systems commonly used in 802.11 WLANs
  - Antenna Polarization and Gain
  - Antenna implementation and safety
  - Types of antenna cables, connectors, and other accessories

Workshop

- Spectrum Analysis
- Wireless LAN Security
- Using Laptop Analyzers
- Site Survey
- Basic WLAN Security
- Wireless Intrusion Prevention Systems

REQUIREMENTS:

Students are supposed to have basic networking knowledge, including OSI model and IP subnetting. Basics knowledge of radio communications is welcomed.

Difficulty level

CERTIFICATE:

This course helps prepare for **CWNA exam** PW0-104 available at **VUE test centers** (www.vue.com/cwnp).

The **CWNA certification** is the foundation level enterprise Wi-Fi certification for the CWNP Program, and CWNA is required for your CWSP and CWNE certifications.

Your CWNA certification will get you started in your wireless career by ensuring you have the skills to successfully survey, install, and administer enterprise Wi-Fi networks. The exam contains 60

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multiple/single choice questions. Passing score is 70%.

TRAINER:

Authorized CWNP Trainer.

ADDITIONAL INFORMATION:

Course language depends on participants choice while original materials are in English.

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