

## IMPLEMENTING CISCO WIRELESS NETWORK FUNDAMENTALS (CI-WIFUND)

### Temario

This course looks at the fundamentals required in the planning, implementation and operation of a Cisco Wireless Lan network. This course is designed to help provide students with the knowledge and hands on practice required to enable them to design, install, configure, monitor and conduct the basic troubleshooting tasks of a Cisco WLAN in an SMB or Enterprise installations. As this is associate level course the advanced features of the Cisco WLAN networks solutions will not be covered in depth.

### Pre-requisitos

Attendees should meet the following pre-requisites:

- Interconnecting Cisco Networking Devices Parts 1 & 2 - (ICND1 & ICND2)
- or, Cisco CCENT Certification (ICND1)

### Dirigido a

Individuals involved in the technical management of Cisco wireless platforms and solutions, and those looking for CCNA Wireless Certification.

### Objetivos del curso

After attending this course you should be able to:

- Understand the basic RF principles and characteristics
- Understand WLAN security methods and access with differing client devices
- Define the Cisco WLAN architecture and the underlying infrastructure used to support it
- Implement a Centralized wireless access network using AireOS or IOS-XE wireless LAN Controllers
- Implement a Converged wireless access network using IOS-XE converged access switches and wireless LAN controllers
- Implement small and remote access wireless networks using FlexConnect, Autonomous or Cloud architectures
- Perform basic WLAN maintenance and troubleshooting
- Describe the requirements for a WLAN design

### Contenido

#### Wireless Fundamentals

- Explain Wireless Fundamentals
- Describe RF Principles

- Understand RF Mathematics
- Describe Antenna Characteristics
- Describe the Basics of Spread Spectrum
- Describe Wireless Media Access
- Describe Wireless Governance
- Discovery Lab 1: Practice RF Math
- Discovery Lab 2: Calculate EIRP and Choose the Correct Antenna
- Discovery Lab 3: Explore the RF Spectrum
- Discovery Lab 4: Analyze Wireless Frames

## Security and Client Access

- Describe Wireless Security Components
- Explain 802.11 Security
- Explain 802.1X/EAP Framework
- Describe EAP Authentication
- Describe WPA and WPA2 Security
- Provide Guest Access
- Native Operating Systems for WLAN Connectivity
- Configure Smart Handheld Clients
- Discovery Lab 5: Review Centralized Authentication

## Define the Cisco Wireless Network Architecture

- Define Cisco Wireless Network Deployment Options
- Define One Management
- Define One Policy
- Define the Cisco One Network
- Mobility Architecture Concepts
- Optimize RF Conditions and Performance for Clients
- Describe Layer 2 Infrastructure Support
- Describe Protocols Used in Wired Infrastructure to Support Wireless

## Implement Centralized Wireless Access

- Initialize a Centralized WLC

Describe AP Initialization Explore Additional WLC Features Implement IPv6 in a Cisco Wireless Environment Configure Client Access Implement Roaming in the Centralized Architecture Discovery Lab 6: Initialize a Centralized WLAN Deployment

## Implement Converged Wireless Access

- Initialize a Converged WCM
- Describe AP Connectivity
- Explore Additional Wireless Features
- Configure Client Access

- Implement Roaming in the Converged Architecture

## Implement Small and Remote Wireless Access

- Overview of the FlexConnect Architecture
- Overview of the Autonomous Architecture
- Overview of the Cloud Architecture

## WLAN Maintenance and Troubleshooting

- Describe Wireless Maintenance
- Explain Troubleshooting Tools
- Describe Troubleshooting Methodology

## WLAN Design

- Predictive WLAN Design Process
- WLAN Site Survey Process

## Labs:

- Lab 1: Configure Windows 7 Client Access
- Lab 2: Configuring the Wired Infrastructure
- Lab 3: Configuring the Centralized WLAN Deployment
- Lab 4: Configuring IPv6 Operation in a Centralized WLAN Deployment
- Lab 5: Configuring Security in a Centralized WLAN Deployment
- Lab 6: Configuring Guest Access Using the Anchor WLC
- Lab 7: Deploying a Converged Access WLAN
- Lab 8: Configuring Security on a Converged WLAN Deployment
- Lab 9: Implement a FlexConnect WLAN Deployment
- Lab 10: Initialize an Autonomous WLAN Deployment
- Lab 11: Configure Security on an Autonomous AP WLAN Deployment
- Lab 12: Configure Security on a Cloud WLAN Deployment
- Lab 13: Perform Centralized Controller Maintenance
- Lab 14: Perform WiFi Scanning
- Lab 15: Challenge—Various Trouble Tickets
- Lab 16: Perform a Predictive WLAN Design
- Lab 17: Perform Passive Site Survey Analysis