

## Understanding Cisco Wireless Foundations

Duration: 5 Days    Course Code: WLFNDU    Version: 2.0

### Overview:

The Understanding Cisco Wireless Foundations (WLFNDU) course provides the knowledge and skills needed to configure, manage, and troubleshoot a Cisco wireless LAN (WLAN) network. Topics include understanding critical aspects of RF technology, industry standards for Wi-Fi and security, how to design, install, and configure a WLAN network of any size, as well as using Cisco DNA Center.

Completing this course will enable you to implement a WLAN network for your organization and give you the foundational knowledge necessary to prepare for the Designing Cisco Enterprise Wireless Networks (ENWLSD) and Implementing Cisco Enterprise Wireless Networks (ENWLSI) courses.

**This course is worth 30 Continuing Education (CE) credits towards recertification**

### Target Audience:

Anyone involved in the configuration and management of a Cisco Wireless LAN network.

### Objectives:

- **After completing this course you should be able to:**
- Describe and implement foundational wireless theory
- Describe and implement foundational wireless math and antennas
- Describe and implement foundational wireless operation including Wi-Fi 6
- Describe security and client access in a wireless network
- Implement 802.1X and Extensible Authentication Protocol (EAP)
- Implement wireless guest access and configure wireless security
- Describe Cisco wireless architecture components and deployment options
- Describe Cisco wireless architecture and its deployment modes, the Control and Provisioning of Wireless Access Points (CAPWAP) protocol, and the Cisco WLC and AP line up
- Describe the wired support for implementing wireless networks
- Deploy Cisco centralized wireless networks using Cisco 9800 WLC
- Describe the centralized wireless access model and its configuration
- Describe maintenance and troubleshooting in the centralized WLAN model
- Describe the management and monitoring of Cisco Wireless Networks with Cisco DNA Center

### Prerequisites:

Attendees should meet the following prerequisites:

- General knowledge of networks
- General knowledge of wireless networks
- Routing and switching knowledge
- CCNA - Implementing and Administering Cisco Solutions

### Testing and Certification

Recommended as preparation for the following exams:

- There is no exam currently aligned to this course.

### Follow-on-Courses:

- ENWLSD - Designing Cisco Enterprise Wireless Networks
- ENWLSI - Implementing Cisco Enterprise Wireless Networks

## Content:

### RF and WLAN Theory

- Indoor Non-Wi-Fi Wireless Technologies
- Outdoor Non-Wi-Fi Wireless Technologies
- Indoor Wi-Fi Wireless Technologies
- Outdoor Wi-Fi Wireless Technologies
- RF Characteristics
- Signal Degradation
- Outdoor Signal Considerations

### WLAN Math and Antennas

- RF Mathematics
- Activity 1: Practice RF Math
- Antenna Characteristics
- 4 Port DART Antenna Connector
- 8-Port DART Antenna Connector
- Legacy Antenna Support
- Antenna Accessories
- Activity 2: Antenna Calculations

### Wi-Fi Operations

- Spread Spectrum Technology Basics
- Exploring Wi-Fi 6E
- Wireless Media Access
- Wireless Governance
- Wi-Fi Spectrum Performance Enhancements
- Wi-Fi Spectrum Compatibility Features
- IEEE 802.11ax: Wi-Fi 6

### Basic WLAN Security

- Wireless Security Components
- Assessing Wi-Fi Vulnerabilities using Common Tools
- IEEE 802.11 Security
- Advanced Wireless Intrusion Prevention System

### Advanced WLAN Security

- IEEE 802.1X and EAP Frameworks
- EAP Authentication
- Wi-Fi Alliance WPA, WPA2, and WPA3 Security

### Configuring WLAN Security

- Configure Native Operating Systems for WLAN Connectivity
- Configure Smart Handheld Clients

### Cisco Wireless Network Architecture

- Cisco Wireless Architecture
- Cisco Wireless Network Deployment Options
- Cisco Wireless Guest Access
- Cisco Wireless Management
- Cisco Policy Control—Cisco ISE
- Cisco Location Services—Cisco Spaces

### Implementing Cisco Wireless Network

- Cisco Enterprise Wireless Network
- Cisco Centralized Wireless Architecture
- Cisco FlexConnect
- Cisco Wireless Controllers
- Cisco Access Points

### Implementing Cisco Wireless Network Wired Support

- Layer 2 Infrastructure Support
- Configuring the Switch for Wireless
- Power Requirements
- Bandwidth Requirements
- Cisco Catalyst Switches
- Wired Infrastructure Protocols That Support Wireless

### Deploying Cisco Centralized Wireless Networks

- Initialize Centralized Cisco WLC
- Getting Familiar with Cisco WLC GUI
- Cisco WLC Ports, Interfaces, and Mapping
- Access Point Discovery Process
- Access Point Join Process
- Cisco WLC Redundancy and High Availability
- Cisco Access Point Failover
- Cisco Access Point Modes of Operation

### Configuring Cisco Centralized Wireless Networks

- IPv6 in a Cisco Wireless Environment
- Roaming in a Centralized Architecture
- Layer 2 Roaming
- Layer 3 Roaming
- Mobility Details
- Mobility Groups and Mobility Domains
- Inter-Release Controller Mobility
- Optimizing RF Conditions
- Optimizing Client Performance
- Introducing Cisco CleanAir

### Maintaining and Troubleshooting Cisco Wireless Networks

- Managing Licenses on Cisco WLC
- Updating Image on Cisco WLC
- Backup and Restore Process
- Troubleshooting Basics
- WLAN Troubleshooting Techniques
- Common Wireless Issues
- Cisco WLAN Troubleshooting Tools
- Third Party Troubleshooting Tools

### Managing and Monitoring Cisco Wireless Networks with Cisco DNA Center

- Introducing Cisco DNA Center
- Cisco DNA Center Workflows
- Cisco DNA Center Automation Overview
- Cisco DNA Center Assurance Overview
- Cisco DNA Center Assurance for Troubleshooting Wireless Networks

### Labs

- Discovery 1: Explore the Wi-Fi Environment
- Discovery 2: Analyze Wireless Frames
- Discovery 3: Configure Client Access
- Discovery 4: Deploy Cisco 9800 WLC
- Discovery 5: Configure Cisco 9800 WLC
- Discovery 6: Perform Cisco 9800 WLC Maintenance

## Further Information:

For More information, or to book your course, please call us on 00 966 92000 9278

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