KOENIG SOLUTIONS · COURSE OUTLINE

Wireless Networking: Wi-Fi 6, MIMO & QoS (Intermediate)

Learn to design, secure and deploy wireless networks using RF fundamentals, MIMO, Wi-Fi 6 and QoS.

5 Days	5	26
40 HOURS	MODULES	TOPICS

COURSE OVERVIEW

This course covers wireless foundations, including RF fundamentals, signal characteristics, antennas, WLAN topologies and 802.11 frame types. It then examines advanced WLAN design, covering the 802.11 standard and amendments, RF measurements, secure implementation and defence against wireless attacks. Advanced technologies such as MIMO, 802.11ax (Wi-Fi 6), quality of service, location services and multicast are explored, followed by strategic deployment topics including AP placement, controller configuration, roaming, guest networks and WLAN management with WCS. The course concludes with real-world scenarios covering troubleshooting, optimisation, integration with emerging technologies and building complete wireless solutions.

WHO THIS COURSE IS FOR

- **Network Engineers**
- **Wireless Engineers**
- **Network Administrators**
- **Network Architects**
- **IT Security Professionals**

LEARNING OBJECTIVES

- Explain RF fundamentals and signal characteristics
- Identify antenna types and WLAN topologies
- Describe 802.11 frame types and standard amendments
- Apply secure WLAN implementation practices and policies
- Analyse MIMO and 802.11ax (Wi-Fi 6) technologies
- Configure quality of service, location services and multicast
- Plan AP placement, controller setup and roaming strategies
- Evaluate real-world WLAN troubleshooting and optimisation scenarios

COURSE SYLLABUS

5 Modules, 26 Topics

01

Wireless Foundations

TOPICS

- Introduction to Wireless Standards and Industry Organizations
- Understanding Radio Frequency (RF) Fundamentals
- **RF Signal Characteristics:** Strength, Frequency, and Modulation
- Antenna Concepts and Selection for Optimal Performance
- Exploring Different WLAN Topologies and Deployment Scenarios
- Decoding 802.11 Frame Types and Their Significance

02

Advanced WLAN Design

TOPICS

- In-Depth Analysis of IEEE 802.11 Standard and Key Amendments
- **RF Components and Measurements:** Unveiling the Mathematics
- Crafting Effective WLAN Designs with Advanced Concepts
- Strategies for Secure WLAN Implementation and Best Practices
- **Vigilant Defence:** Wireless Attacks, Intrusion Monitoring, and Policies

03

Mastering Advanced Technologies

TOPICS

- Harnessing the Power of MIMO Technology for Enhanced Performance
- Unleashing the Potential of 802.11ax (Wi-Fi 6) for High Efficiency
- **Quality of Service (QoS):** Configuration, Prioritization, and Optimization
- Mastering Location Services for Enhanced User Experience
- Navigating Multicast Implementation in Wireless Networks

04

Strategic WLAN Deployment

TOPICS

- **AP Placement Strategies:** Optimizing Coverage and Capacity
- **Controllers' Command:** Initial Configuration and Seamless Discovery
- **Roaming Strategies:** Ensuring Uninterrupted User Experience
- Crafting Guest Networks and Managing BYOD Access
- **WCS (Wireless Control System):** Effective WLAN Management

05

Real-World Challenges and Application

TOPICS

- Analysing Real-Life WLAN Scenarios and Complex Challenges
- Implementing Solutions for Troubleshooting and Performance Enhancement
- **Wireless Network Optimization:** Performance and Efficiency Strategies
- Integrating Wireless Networking with Emerging Technologies
- Constructing Comprehensive Wireless Networking Solutions

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

Learn the Way That Suits You

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