KOENIG SOLUTIONS · COURSE OUTLINE

Wireless Mastery: Wi-Fi 6, MIMO & QoS (Advanced)

8 Days	8	40
64 HOURS	MODULES	TOPICS

LEARNING OBJECTIVES

- Explain RF fundamentals, signal propagation and antenna selection
- Describe IEEE 802.11 standards and their amendments
- Apply secure WLAN strategies including encryption and authentication
- Analyse MIMO technology and 802.11ax (Wi-Fi 6) efficiency gains
- Configure Quality of Service prioritisation for wireless traffic
- Plan AP placement, controller configuration and roaming strategies
- Implement guest networking and BYOD access management
- Assess advanced troubleshooting and radio resource management techniques

COURSE SYLLABUS

8 Modules, 40 Topics

01

Building Wireless Foundations

TOPICS

- Wireless Standards and Industry Organizations
- Unveiling the Complexity of Radio Frequency (RF) Fundamentals
- Exploring RF Signal Propagation, Attenuation, and Path Loss
- Antenna Types, Characteristics, and Selection
- **Diverse WLAN Topologies:** Selection and Deployment Considerations

02

Decoding IEEE 802.11 Standards

TOPICS

- In-Depth Exploration of IEEE 802.11 Standard and Amendments
- Navigating RF Components, Measurements, and Mathematical Concepts
- **Crafting Effective WLAN Designs:** Coverage, Capacity, and Optimization
- **Secure WLAN Implementation:** Strategies, Encryption, and Authentication
- **Vigilant Defense:** Wireless Attacks, Intrusion Monitoring, and Policies

03

Harnessing Advanced Wireless Technologies

TOPICS

- **MIMO Technology:** Expanding Horizons of Wireless Throughput
- Exploring the Potential of 802.11ax (Wi-Fi 6) for Efficiency
- **Quality of Service (QoS):** Configuration, Prioritization, and Optimization
- Location Services Deployment and Advanced Multicast Concepts
- Integrating Emerging Technologies for Enhanced Wireless Performance

04

Strategic WLAN Deployment and Access Management

TOPICS

- **AP Placement Strategies:** Balancing Coverage and Capacity
- **Commanding Controllers:** Initial Configuration and Seamless Discovery
- Seamless Roaming Strategies for Enhanced User Experience
- Implementing Guest Networks and Managing BYOD Access
- Effective WLAN Management with WCS (Wireless Control System)

05

Mastering Complex WLAN Challenges

TOPICS

- **Advanced Troubleshooting Techniques:** Analyzing and Resolution
- Dynamic Radio Resource Management (RRM) for Optimal Performance
- Confronting and Mitigating Wireless Interference
- **Configuring and Maintaining Resilient WLANs:** Best Practices
- Advanced WLAN Monitoring Techniques for Continuous Improvement

06

Security Strategies and Advanced Implementation

TOPICS

- **Advanced WLAN Security:** Authentication, Encryption, and Hardening
- Navigating Security Compliance and Regulatory Aspects
- Monitoring and Troubleshooting WLAN Components
- Applying Knowledge to Real-World WLAN Scenarios
- Exploring Emerging Trends in Wireless Networking

07

Real-World Scenarios and Strategic Planning

TOPICS

- Analyzing Real-Life WLAN Challenges and Complex Issues
- Crafting Comprehensive Wireless Networking Solutions
- **Future Trends:** Aligning Wireless Strategies with Technological Evolution
- Security and Compliance Considerations in Evolving WLAN Landscape
- Strategizing for Future-Proofed Wireless Networking

08

Enhancing Proficiency and Future Exploration

TOPICS

- In-Depth Exploration of Advanced Wireless Concepts
- Demonstrating Proficiency in Key Concepts and Practical Skills
- **Addressing Complex WLAN Scenarios:** Practical Application
- Exploring Real-World Case Studies and Wireless Knowledge Application
- Innovations and Future Trends in Wireless Networking

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.

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