KOENIG SOLUTIONS · COURSE OUTLINE

Introduction to Wireless Networking (CWNP)

6
MODULES

22
TOPICS

LEARNING OBJECTIVES

- Describe the history, evolution and trends of wireless networking
- Identify wireless architecture components such as access points
- Explain wireless security fundamentals such as authentication
- Analyse wireless threats such as eavesdropping and rogue access points
- Apply wireless security protocols such as WPA2 and 802.11i
- Plan wireless deployment and site surveys for coverage and interference
- Compare wireless protocols such as 802.11ac, Bluetooth and Zigbee
- Evaluate wireless applications and emerging technologies such as 5G

COURSE SYLLABUS

6 Modules, 22 Topics

01

Introduction to Wireless Networking

TOPICS

- History, Evolution, and Trends of Wireless Networking
- **Wireless Communication Technologies and Standards:** WiFi, Bluetooth, Cellular, Satellite, and more
- **Wireless Network Architecture and Design Principles:** Access Points, Routers, Switches, and Clients
- **Wireless Networking Components:** Antennas, Transmitters, Receivers, and Protocols

02

Wireless Network Security

TOPICS

- **Wireless Network Security Fundamentals:** Authentication, Encryption, and Access Control
- **Wireless Network Threats:** Eavesdropping, Man-in-the-Middle Attacks, Denial of Service, and Rogue Access Points
- **Wireless Network Security Protocols and Standards:** WPA, WPA2, and 802.11i
- **Wireless Network Security Best Practices:** Strong Passwords, Firmware Updates, and Intrusion Detection

03

Wireless Network Deployment and Planning

TOPICS

- **Wireless Network Deployment Strategies:** Indoor vs. Outdoor, Single vs. Multiple Access Points
- **Wireless Network Planning and Site Surveying:** Coverage, Interference, and Signal Strength Analysis
- **Wireless Network Troubleshooting and Performance Optimization:** Signal Quality, Range, and Bandwidth
- **Wireless Network Management Tools and Techniques:** Network Monitoring, Configuration, and Reporting

04

Wireless Network Protocols and Standards

TOPICS

- Wireless Network Protocols and Standards: 802.11a/b/g/n/ac, Bluetooth, Zigbee, and Cellular
- **Wireless Network Protocol Operation and Features:** Frequency Bands, Data Rates, and Modulation Schemes
- **Wireless Network Protocol Comparison:** Strengths, Weaknesses, and Trade-offs
- **Wireless Network Integration with Wired Networks:** Routers, Gateways, and Switches

05

Wireless Network Applications

TOPICS

- **Wireless Network Applications:** Mobile Computing, IoT, Sensor Networks, and more
- Emerging Wireless Network Technologies: 5G, Wi-Fi 6, and Beyond
- **Wireless Network Trends and Future Directions:** Virtualization, Cloud Integration, and AI-based Optimization

06

Wireless Network Case Studies

TOPICS

- Real-world Examples of Wireless Network Deployment, Management, and Security
- **Case Studies in Various Industries:** Healthcare, Education, Manufacturing, and more
- Lessons Learned and Best Practices from Wireless Network Deployments

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

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