



Class Outline

Certified Wireless IoT Solutions Administrator (CWISA)



Objectives

- Understand Wireless Networking and Internet of Things (IoT) Technologies
- Comprehend Basic Radio Frequency Communications
- Identify Methods for Planning Wireless Solutions
- Describe Methodology of Implementing Wireless Solutions
- Determine Best Practices for Supporting Wireless Solutions

Pre-Requisite Knowledge Advisory

- Basic Understanding of Wireless Networking
- Basic Understanding of Cellular Telephony Communications
- Familiarity with Internet of Things (IoT)

Exam

- CWISA-101
- Proctor: PearsonVUE
- Renewal: 3 years

Class Outline

Module 1 – Introducing Wireless Technologies

- History of Wireless
- Introduction to Radio Waves, Frequencies, and the OSI Model
- Wireless Components: Cabling, PoE, and Hardware
- Lab Testing and Staging
- Documentation
- Security Advances

- Industry and Regulatory Organizations

Module 2 – Introducing Wireless Technologies, cont.

- Introducing Wireless Network Types (WLANs, etc.)
- The Internet of Things (IoT)
- Client Architectures
- Types of Wireless Networks and Their Challenges

Module 3 – Planning Wireless Solutions

- Requirements and Constraints
- Network Design Components
- Design Evaluation
- Project Management
- Standard Documentation

Module 4 – RF Communication

- Electromagnetic Spectrum
- Frequency, Waves, Polarization, Gain and Loss
- Wave Behavior and Modulation
- Measurement
- RF Math

Module 5 – Hardware

- Antennas and Antenna Systems
- Signal Transmission
- RF Connectors, Cables, and Accessories

Module 6 – Cellular Networks

- History
- Architectures
- Service Types
- LTE Networks
- Frequencies

Module 7 – Short-Range, Low-Rate, and Low-Power Networks

- Speed, Range, Power
- The IEEE 802.11 Standard
- Frequency Bands
- PHYs, BSS, ESS, etc.
- Channels
- 802.15.4
- Bluetooth, LoRa, Zigbee
- 6LoWPAN

Module 8 – Sensor Networks

- Applications
- Measurement
- Sensor Types and Actuators
- Architectures
- Requirements and Constraints

Module 9 – The Internet of Things (IoT)

- Definition
- History
- Vertical Markets
- Models
- Hardware
- Security
- Wireless and IoT

Module 10 – Securing Wireless Networks

- CIA
- Data Protection
- Monitoring

Module 11 – Troubleshooting Wireless Networks

- Validation
- Troubleshooting Methodology
- Spectrum Analysis
- Troubleshooting Specifics

Module 12 – Programming, Scripting, and Automation

- APIs
- Languages
- Architectures
- Layers and Tiers
- Data Structures

