



WiMAX Fundamentals

Course Outlines

- **Introduction to WiMAX and IEEE 802.16**
 - WiMAX as a Wireless MAN Technology
 - WiMAX Standards
 - WiMAX Forum
 - WiMAX Regulation
 - WiMAX Certification
 - WiMAX Solutions and Applications
 - NLOS, Self Install CPE, Nomadicity, Mobility
 - Alternative Technologies
 - 802.16 Frequency Bands
 - 802.16 Family of Standards
 - WiMAX Architecture
 - WiMAX System Profiles
 - System Profiles for 2 - 11 GHz
 - The MAC and PHY Layers
- **WiMAX: The Physical Layer (PHY)**
 - The function of the PHY
 - What OFDM Means to WiMAX
 - What is FFT
 - OFDM Variants 2-11 GHz
 - Single Carrier (SC) Variants
 - Multiplexing in OFDM
 - Simple OFDM Transmitter & Receiver
 - QPSK vs. QAM
 - TDD and FDD
 - Frame Structure
 - Adaptive Modulation Schema
 - Forward Error Correction (FEC)
 - Adaptive Antenna System (AAS)
 - Ranging and Power Control
- **WiMAX: The Medium Access Control (MAC) Layer**
 - The MAC layer operation in WiMAX Architecture
 - MAC Frame Structure
 - Service Types and Classes
 - Link adaptation and Automatic Repeat Request (ARQ)
 - Transmission Convergence (TC) Sublayer
 - Types of Service Flows
 - Security Sublayer
 - The PKM & AES Protocols
 - Encryption, Authentication and Authorization

Who Should Attend

This course is designed for anyone who requires knowledge of WiMAX and its connection to current and future mobile and cellular network. Anyone who needs to implement wireless extensions to an existing MAN-Network. Design engineers, Field engineers, Test engineers, software and hardware engineers will benefit from the course.

Course length: 4 Days

Prerequisites: Basic understanding of RF fundamentals, wireless and radio communications is recommended

Get Certified



WiMAX & EION Certified Wireless Engineer

Move your career ahead by distinguishing yourself in the wireless industry with EION/Wi-LAN professional certification

Certification Courses – First TWO courses are required for WiMAX Essentials Wireless Engineer Certificate

1. RF and Wireless Fundamentals
2. WiMAX Fundamentals
3. WiMAX RF Planning, Network Design, & Implementation
4. 802.16e Mobile WiMAX Fundamentals

EION Product Specific Courses – Each Course qualify for EION Wireless Engineer Certificate

1. Libra MAX Network Design, Installation, & Troubleshooting
2. Libra 5800 Network Design, Installation, & Troubleshooting
3. Ultima3 Network Design, Installation, & Troubleshooting
4. VIP 110-24 Network Design, Installation, & Troubleshooting
5. Ranger 5145 Network Design, Installation, & Troubleshooting