

Wireless Broadband Fundamentals

Course Length:	2 Days
Course Code:	3100
Prerequisites	None, however a basic understanding of networking and RF principles will be useful for students taking this course.
Course Overview:	<p>The industry is quickly migrating from traditional services and systems to broadband based technologies. This trend is predicted to grow and it is important for industry professionals to increase their knowledge level. Whether you are replacing your backhaul, designing a complete meshed solution, deploying licensed or unlicensed bands, using the Public Safety Bands or dealing with interference, this course can help fill in the gaps on Wireless Broadband. This robust and extensive course is sure to help you and your team with a strong emerging technology.</p>
Required Equipment:	<i>None, this course can be customized to meet specific customer requirements.</i>



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Course Outline

Wireless Broadband Overview

- Trends, Drivers & Growth
- Pricing and Costs
- The lure of Broadband
- Applications and Services

Convergence of Radio and Networking

- Access Points
- Wireless Bridges
- Wireless Routers
- Wireless LAN Switches
- PoE Devices

Wireless Broadband Fundamentals

RF Concepts & Terms

- Frequency and Spectrum
- Signals and Propagation
- Environmental Factors
- RF Equipment
- Antennas and Systems
- Safety Considerations
- Coverage and Distance

Networking Concepts & Terms

- Network Types
- Layers and Addresses
- Networking Equipment
- Internetworking

Interference

- Narrowband, All-band
- Weather
- Jamming & Hijacking
- Spectrum Analyzer
- Triangulating

Point to Point

- Network Details
- Applications
- Systems, Equipment and Distance
- Design Considerations

Point to MultiPoint

- Network Details
- Applications
- Systems, Equipment and Distance
- Design Considerations

Meshed Networks

- Network Details
- Applications
- Systems, Equipment and Distance
- Design Considerations

Wireless Broadband Fundamentals

Sight Survey Fundamentals

- Goals and requirements
- Available Resources
- Preparing for a site Survey
- Required Equipment for a Survey
- Information Gathering
- Survey Reporting

Security

- Security Policy
- WEP, TKIP, WPA
- Wireless VPN's
- Attacks on Wireless LANs
- Security Recommendations

System Maintenance

- Problem Reporting Trouble shooting solutions
- Multipath
- Hidden Node
- Throughput
- Problem Analysis

The Future of Wireless Broadband

- Broadband Anywhere Mobility
- WiMax, WiBro, 3G, 4G
- VoIP, RFID, Video
- Cellular/WiMax
- Emergency Communications