

Course Title **Advanced Wireless Technologies – 7CS003**

Duration **5 Days**

Course Overview

This comprehensive and authoritative five day briefing is designed for technicians who have a background in telecommunications but have no previous experience of commercial wireless applications. The course provides an essential introduction to 802.11 (Wi-Fi) and 802.16e/m (Roaming WiMAX) Wireless networks.

Delivery Method

	Y/N		Y/N		Y/N		Y/N		Y/N
Classroom	y	Tutor Led	y	Webinar		Self-paced labs		Facilitated labs	
Demonstrations	y	Case studies		Syndicate exercises	y	Self-paced		Lectures	

Course Prerequisites

The ability to work with Microsoft Windows is useful; however delegates require no previous technical knowledge or experience of wireless technologies or 4G protocols prior to attending this course. An understanding of the radio frequency spectrum is required as covered in the Wireless and Radio Engineering course.

Course Objectives

On completing this Wireless course delegates will be able to:

- Understand the principles and protocols of 4th Generation (4g) mobile communications (WiMAX and Long Term Evolution LTE)
- Understand how Wireless can be used to reduce wide area networking costs.
- Understand how Wireless can be used by mobile and roaming users, as an alternative to fixed line, dial-up and mobile communications solutions.
- Describe the organisations and laws governing the use of wireless networks.
- Understand the fundamental concepts and operating principles of Wireless.
- Describe the concepts and benefits of Voice over Wireless (Wireless VoIP).
- Appreciate the product ranges and offerings of the major enterprise Wireless vendors.
- Appreciate the choices that organisations face when implementing wireless LANs.
- Understand the terminology and jargon used with wireless LANs.
- Perform and understand professional planning, surveys, design and implementation processes with 802.11 wireless LANs and 802.16e/m WiMAX.
- Understand and quantify the support issues and resources for Wireless for your customers.
- Calculate the costs of implementing and supporting Wireless networks for your customers.
- Understand the security issues with Wireless and its potential impact on your customers.
- Understand the security mechanisms and countermeasures that are available for Wireless vulnerabilities.
- Understand the Wireless network auditing that is required by organisations running Wireless networks.

Content Headings

Introduction to Earlier Technologies
 Introduction to Wireless and 4g Networking
 Understanding Wireless Basics
 4g Technology: An Introduction
 4g History
 How 4g Works
 4g Applications and Services
 4g Regulatory Issues
 4g and Other Broadband Wireless Futures
 Wireless Bridge Links
 Wi-Fi Mesh Networks
 Wireless Ad Hoc networks
 Defining Wi-Fi Network Requirements
 Assessing Enterprise Wi-Fi Vendors
 Assessing Wi-Fi Network Suppliers
 Voice over Wi-Fi (VoWi-Fi or Wireless VoIP)
 Wi-Fi Security
 Wi-Fi Network Management
 Site Surveys, Design and Implementation

Assessment Method

	Y/N		Y/N		Y/N
Assessed lab/task	y	End of course assessment	y	End of module assessment	

Assignment/Assessment

The student will submit a 4-6000 word assignment on a subject covered in the course syllabus within six months.