

Course Title: Design and Implementation of 4th Generation Networks – 7CS004

Course Duration: 5 days

Course Overview:

This unique, comprehensive and authoritative five day course builds on the concepts and principles of commercial wireless applications to an advanced level. 4th Generation technologies such as WiMAX and Long Term Evolutions are explored in detail to enable engineers to carry out design and implementation of 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	y
Demos		Case studies		Syndicate exercises		Self-paced		Lectures	

Audience

Network engineers, planners, designers and installers who need to implement wireless networks.

Course Prerequisites

Attendance of the Wireless and Radio Engineering course or relevant experience and knowledge.

Course Objectives

On completing this course delegates will be able to:

- Design a Project Engineering plan for network implementation
- State 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.
- Utilise the fundamental concepts and operating principles of wireless in a design.
- Describe the concepts and benefits of Voice over Wireless (Wireless VoIP).
- Appreciate the product ranges and offerings of the major enterprise Wireless vendors.
- Analyse the options that organisations face when implementing wireless LANs.
- Perform professional planning, surveys, design and implementation processes for 4g networks.
- Understand and quantify the support issues and resources for Wireless for the end user.
- Calculate the costs of implementing and supporting Wireless networks for the end user.
- Incorporate fundamental security safeguards into the network design.
- Analyse 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
Wireless and 4g Networking
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)
Network Security
Network Management
Training and Support
Site Surveys, Design and Implementation

Assessment

Course wrap up

Assessment Method

	Y/N		Y/N		Y/N
Non-assessed		Written		Online	
Assessed lab/task		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.