

End to End Principles of Telecommunications

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Course Objectives

After attending the training, participants will be able to:

- Appreciate the basic engineering principles and building blocks of Telecommunications
- Understand how the Telecommunications landscape has grown and transformed over the years
- Acknowledge the various network types e.g. Wireline, Wireless and how they inter-operate
- Learn about legacy and approaching Telecommunications technologies and services e.g. Cloud Computing, the Third Network, 5G Mobile Technology, the Internet of Everything
- Construct an overview understanding of the global Telecommunications arena
- Comprehend the futuristic direction of Telecommunications including key industry drivers

Course Overview

The birth, growth, transformation and future of Telecommunications represents a fascinating topic. Since Alexander Graham Bell's amazing telephony breakthrough in 1877, our world has been transformed by a series of engineering triumphs which has enhanced personal, business and society connectivity and our overall wellbeing on planet earth.

In the last 40 years or so, the evolution and growth of the mobile phone plus the creation and launch of the Internet are the two latest industry phenomena to captivate mankind.

This three (3) day course provides attendees with an end-to-end appreciation of the key engineering building blocks of our Telecommunications networks and systems and how they have evolved and improved to keep pace with the increasing and wider ranging demands of consumers and enterprises alike.

It explores the complexities of today's Telecommunications systems and services before taking a glimpse at the future direction of the industry and what we should expect of the forthcoming landscape, including the next remarkable episode in the History of Telecommunications – The Internet of Everything.

Who Should Attend?

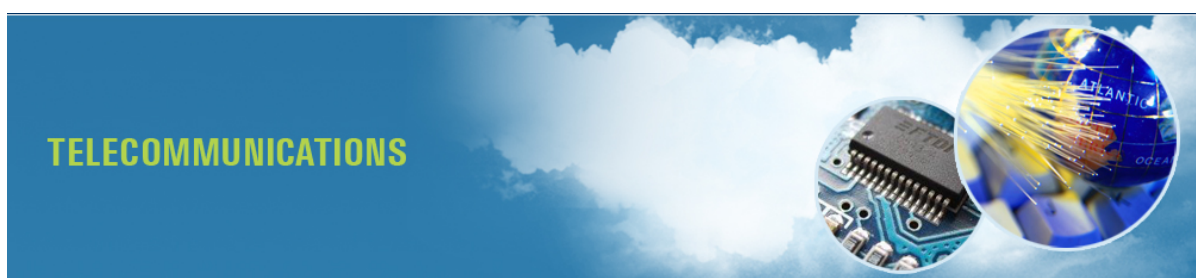
New entrants into the Telecommunications Industry.

Technical and non-Technical professionals working in the Telecommunications arena.

Executives seeking an Overview perspective of Telecommunications.

Course Duration

3 days



Course Outline

Day 1

- Basic engineering principles of Communications Systems
- Characteristics of Electromagnetic Signals
- Analogue and Digital Transmission concepts
- Modulation and Multiplexing Techniques
- Encryption
- Switching Types and Signalling Technologies
- Copper Access Network
- OSI Reference Model and TCP/IP
- Classification of Telecommunication Networks
- Brief Overview of Telecommunications History

Day 2

- Principles of Data Networking
- Wireline and Wireless Services
- Physical and non-Physical Transmission Media
- Short Range Radio Technologies (Wi-Fi, Bluetooth)
- Low Power Wide Area Networks
- Fixed Broadband Technologies
- Basic principles of Fibre Optic transmission
- The Growth and Power of the Internet
- Triple Play services (High Speed Internet, VoIP, IPTV)
- Carrier Ethernet
- Cloud Services
- Cyber Security

Day 3

- Basic concepts of Mobile and Cellular Technologies
- The Mobile Evolution
- Licensed and Unlicensed Frequencies
- 2G GSM, GPRS and EDGE Technologies
- 3G UMTS and HSPA
- 4G LTE, 4G Advanced and 4.5G Technologies
- Mobile Network Evolution
- Evolving Telecommunications Technologies
- Big Data Analytics
- Modern Computer Networking concepts
- 5G Mobile Technology and the Internet of Everything

