Course Name: Telecommunications 101

Course Overview:
This course is designed as an overview of the telecommunications industry for management and other key staff personnel. Students attending this course will obtain the knowledge to discuss major events, standards, players and technologies that have formed a truly exciting industry. Key emphasis will be put on using, evaluating and ensuring proper return on investment (ROI) as well as assessing network requirements and evaluating vendors and carriers.

Course Length: 2 days

Who should attend?

- Wireless Carriers
- Tower Companies
- Contracting Organizations
- Power Companies
- Telephone Companies
- Field Engineers
- Installers
- Technicians
- Management staff

You will learn:

- The timeline of the industry and mark four major events that helped to shape the industry
- The OSI model and explain the layers with better than 75% accuracy
- List and compare the major types of organizations in the telecommunications industry
- Draw a basic diagram including CO, OSP, CPE and NOC and differentiate between their functions
- Explain two major differences between traditional voice systems and modern voice systems
- Describe three transport technologies and list a possible application for each of these technologies
- List three common data technologies and define their major applications

Prerequisites: None

Customizable Course: Yes

Course Content:

Brief History of Telecommunications

- Where it all started
- Government Intervention
- Competition in the industry
- Convergence
- Major technological advances
- Fiber Optics bring Bandwidth
- The data revolution
- Wireless communications
- Where are we headed?

Standards

- Standards/Regulatory Bodies

Telecom Basics

- Telecommunication basics
- Analog v/s digital
- LANs, WANs, and MANS
- Bandwidth v/s speed
- Multiplexing concepts

Major Players

- RBOCS/ILECS
- CLECs/DLECs/ICPs
- ASPs
- IXCs
- End Users
- ISPs
- Wireless Carriers
- Government
- Manufactures/vendors

Areas of a Basic Network

- CO/MTSO/Main Office
- OSP/Links/Local Loop/Media
- CPE/Users/Cell sites
- NOC/Control Center

Overview of the OSI model

- Purpose
- Layer descriptions

Traditional voice systems

- Operated assisted

- POTS
- In-band Signaling
- PSTN

PBX systems Modern voice systems
- Out-of-band signaling
- ISDN
- SS7
- TR/GR-303

Transport Systems
- T and E Carriers
- xDSL
- Wireless Systems
- Fiber Optics
- Broadband Systems
- SONET/SDH
- WDM/DWDM

Traditional data systems
- Token Ring
- Ethernet

Modern data systems
- Cells, Packets and Frames
- ATM and Frame Relay
- The Internet (IP)
- Wireless networking
- Internetworking

Network Support Systems
- OSS/BSS

The Future
- Key players and trends
- Emerging technologies
- Projected networks