

**Course Name:** Intro to Data Technologies

**Course Overview:**

This course focuses on introducing the student to data technologies and equipment. Through a unique teaching approach, the majority of technologies utilized for modern communications are discussed. Three days are efficiently utilized to give the attendee an understanding of not only the technology, but also the equipment and comparable technologies. This class has proven to be beneficial for not only data newcomers, but also experienced veterans.

**Course Length:** 3 days

**Who should attend?**

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

**You will learn:**

- The OSI Model and why it is important
- Basic transport technologies (T1, T3, SONET, RF...)
- How data is routed (Addressing schemes)
- Packet switching concepts
- Packet, Frames and Cells
- Basic “packetized” technologies (Frame Relay, ATM, ISDN...)
- Data Protocols in use across the network
- Data equipment in use today
- Network Equipment

**Prerequisites:** None

**Course Fees:**

- 3-day course at a TESSCO Location \$1425 per person
- 3-day course at your location \$9,000 for up to 10 attendees

**Customizable Course:** Yes

**Course Content:**

Introduction to Networking

- Industry Overview

- Trends
- Background information

#### Practical OSI Model

- Purposes
- Layers
- LAN vs. WAN

#### Physical Layer 1 technologies

- Copper, Fiber and Wireless
- T1/DS1
- T3/DS3
- SONET/Optics
- WDM/DWDM/PON
- BlueTooth
- Microwave
- WiFi and Wi-Max
- Broadband Wireless
- Cellular

#### Data Layers

- Packets, Frames and Cells
- Addressing at Layer 2
- Virtual Circuits

#### WAN technologies

- ISDN D channel
- Frame Relay
- ATM
- SS7

#### LAN technologies

- Ethernet
- Token Ring
- ATM

#### Wireless technologies

- Cellular based
- CDMA/GSM/iDEN data technologies
- LAN/Networking
- 802.11/Wi-Fi

#### Network Layer 3 Technologies

- Addressing at Layer 3
- ISDN

- IP
- VoIP
- IPX
- AppleTalk

#### Transport Layer 4 technologies

- Addressing at Layer 4
- TCP
- UDP
- Other Layer 4 protocols

#### Upper Layers (5, 6 and 7)

- Overview of basic technologies and functions

#### Overview of Common Equipment

- Router
- Switch (LAN and WAN)
- Hub/Repeater
- Multiplexer
- Bridge
- Firewall
- Gateway
- Personal Computer
- CSU/DSU
- NIU/Smartjack
- DSL Router/Modem

#### Bringing it all Together

- Technologies working together

#### Data Networks of Tomorrow