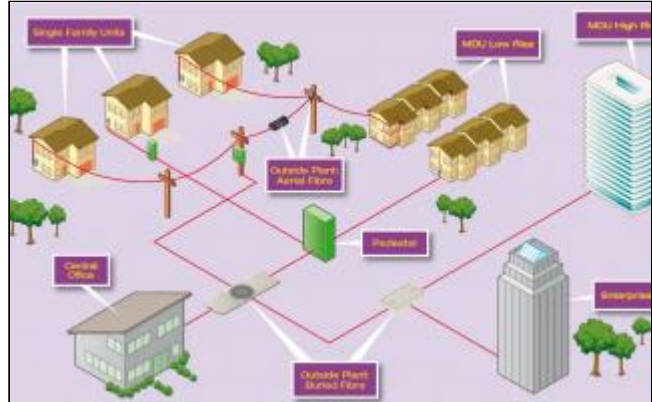


Course Description

This 3-Day Hands-On course is a must for persons entering the field of telephone communications. In the first part of this course, students will learn about basic electricity and telecom electronics as it applies to telecommunications and basic telephony. Explaining the terms and concepts commonly used in the field today.

In addition, the student will learn the basic components of the telephone network from the customer premise equipment (CPE) to the outside plant (OSP), central office (CO) and the toll network (TN). Understand proper bonding, grounding and shielding. The Basics of installation, repair and maintenance of lines.



The second portion of this course expands from the basics learned in the first part and covers an high level understanding of today's digital switching, digital T1, T3 systems, fiber optics and special circuits as it pertains to your specific environment.

Each student will have Hands-On training in basic meter reading, running jumpers, circuit testing and trouble isolation.

Students Will Learn

- Basic Telephony
- Basic Electrical Principals
- Telephone Network Overview
- AC/DC and Series/Parallel Circuits
- Ohms Law
- Telephone System Components
- Cables and Color Codes
- Aerial vs Burial
- Outside Plant
- Central Office and Switching
- Bonding & Grounding and Protection
- Special Circuits
- Analysis and Problem Solving
- Provisioning & Maintenance
- And More...

Target Audience

Anyone entering the telephone, communications, electrical and/or similar industry.

Prerequisites

None.

Course Outline

Module I: Basic Electrical Principles

- Basic electrical concepts
- Series and parallel circuits
- AC and DC
- Voltage, Current, and Resistance
- Ohms Law
- Inductance, Capacitance and Impedance

Module II: Basic Telephony (POTS)

- Analog Voice Frequency
- Basic telephone set operation
- Tip and Ring cable pair
- Basic Central Office
- Dial pulses and DTMF
- NID (Network Interface Device)
- Inside wiring and phone jacks
- Cable construction
- Cable pair color code
- Aerial plant, closures and drops
- Buried plant, pedestals and buried drops
- Load Coils
- Remotes, remote terminal equipment
- Main Distributing Frame and vault

Module III: Bonding & Grounding and Protection

- Basic concepts and code requirements
- At the customer premise
- In the outside plant

- In the central office

Module IV: Digital Transmission

- Basic T1/DS1 concepts
- Channel bank operation
- T1 span lines
- DSX-1 crossconnects and DACS
- T3/DS3 concepts
- Multiplexers
- Digital Switches
- Toll Network and SS7

Module V: Fiber Optics

- Fiber optic principles
- Fiber optic cable
- Fiber optic terminals
- Ring network technology

Module VI: Special Circuits (if Applicable)

- Analog data circuits: 2.4, 9.6, 19.2
- Digital data circuits: DDS: 2.4, 9.6, 19.2, 56k, 64k
- HiCaps: T1 and T3
- DSL

Delivery Method

Instructor led with numerous Hands-On labs and exercises.

Equipment Requirements

(This apply's to our hands-on courses only)

BTS always provides equipment to have a very successful Hands-On course. BTS also encourages all attendees to bring their own equipment to the course. This will provide attendees the opportunity to incorporate their own gear into the labs and gain valuable training using their specific equipment.

Course Length

3 Days