

Hands-On

# I & R (Installation and Repair of Telephone Lines)



## Course Description

This 2-day course is designed to put that new hire into action, as well as to keep your veteran installers on a fresh track. This way all technicians are all on the same page with the proper understanding and techniques for Installation and Repair. After students complete both an aerial and buried installation, all installed lines will be test accepted for service.

Correct Installations and repairs are the sole purpose of this course. Students will spend time in Hands-On labs with practical Real-World scenarios and if applicable access to some Field work for installing and repairing lines.

This course is non-vendor specific, so you can use your own brand of materials and equipment, or you can use what we provide. Quality craftwork, and safety will be enforced throughout the entire course. This course may be customized to meet specific company practices, upon request.



## Students Will Learn

- **Telephony Overview**
- **AC/DC and Series/Parallel Circuits**
- **Ohms Law**
- **Telephone System Components**
- **Aerial vs Burial**
- **Outside Plant**
- **Bonding & Grounding and Protection**
- **Bonding and Grounding Requirements**
- **Installing Aerial Drops**
- **Installing Buried Drops**
- **Understand Demarcation and Deregulation**
- **Inside and Outside Wiring Types**
- **Cables and Color Codes**
- **Blocks and Punchdowns**
- **Station Equipment**
- **Troubleshooting & Installing Inside and Outside Wiring**

- **Upgrading Customer Premises Equipment**
- **Service Standards**
- **and More**

## Target Audience

Contractors, union craftsman, electricians, technicians, installers, splicers, LAN managers/administrators, end-users, engineers, MIS managers, facilities managers and technicians, architects and developers, systems engineers, telecom managers and technicians and anyone involved in repairing, installing, maintaining, designing, evaluating, or configuring Residential telephone Lines.

## Prerequisites

None. (Must be able to pass a colorblind test)

## Course Outline

### Module 1:

- Overview of Basic Telephony
- AC/DC, Series/Parallel Circuits and Ohms Law
- Voltage and Multimeters
- NIDs and Pedestals

### Module 2:

- Overview of the local loop
  - Local Loop Network Central Office to the Inside Wire/Jack at Customer Premise
- Outside Plant
- Main Distribution Frame
- Feeder Cable
- Cross Connects
- Distribution Cable
- Pole
- Terminals
  - Type of terminals
  - Serving Terminal
- Binding Post
- Service Access Wire (Drops)

- Station Protection
- Network Interface
- Inside Wire/Connecting Block or Jack
- Cable and Color Code

### **Module 3:**

- Safety Standards (Electrical Hazard Protection, Body Belt Usage, Step Ladder Usage)
- Installation of Aerial Drops
- Lab (aerial drop installation)
- Station Protection/NIDs and PEDs
  - Bonding and Grounding
  - Job Planning for Bonding/Grounding
  - Safety Rules
  - Bonding and Grounding Hardware
  - Protector Grounding Rules
- Mobile Home Installations
- Installing Buried Drops
- Lab (buried drop installations)

### **Module 4:**

- Inside Wire & Tariffed/Detariffed Charging
- Placement of Inside Wire (IW) and Jacks
  - Job Planning
- Installing Inside Station Wire
  - Inside Wire Route Selection
  - Running Wire between Basement and First Floor Baseboard
  - Fishing Inside Wire
  - Running Wire between the First Floor and Second Floor
  - Installing Inside Wire Using Baseboards
- Installing Jacks
  - General Installation Instructions
  - Install Wall Mounted Jack
  - Install Base Mounted Jack
- Terminate Inside Wire At NID
- Lab (Inside/Outside wire installation)

## Module 5:

- Basic Troubleshooting Strategy
  - Leakage Test
  - Testing for Leakage (Step by Step)
  - Stress Test
  - Loop Current
- Lab (subscriber loop testing)

## 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

2 Days