

# LTE Fiber Optic Cable Installation And Testing Concepts

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**Course Length**

Two Days

**Prerequisites**

None, however a fundamental understanding of telecommunications transmission principles will be useful for students taking this course. *This course can be customized or combined to meet specific system requirements.*

**Course Objective**

This course is for technical and non-technical students who are new to fiber optic cable and transmission. This course will cover fiber optic cable types, modes, construction, installation and maintenance and testing. Much of the course is hands-on and will include proper handling, splicing, connector installation, inspection, and performance testing fiber optic cable installation for LTE.

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**COURSE OUTLINE**

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**Optical Basics**

- Background and Industry
- Glass v/s Plastic
- Light Wave Transmission
- Multimode v/s Single Mode
- Standards, specifications and terminology
- Cable Types
- Cable Performance
- Loss and Dispersion
- Understanding Loss Budgeting

**Fiber Optic Safety**

- Light Sources-LASER & LED
- Dangers of Light transmission
- Dispose of Fiber optic cables

**Splicing and Termination**

- Connector Types
- Making connections
- Cleaning
- Cleaving
- Mechanical Splicing
- Fusion Splicing

**Termination Devices**

- Splice trays
- Patch Panels
- Fiber Distribution Hubs
- Optical Bridges
- Optical Splitters

**Installation & Testing**

- Fiber Test Measurement Guidelines
- Reel Test
- Splicing Installation test, Acceptance
- Fiber Acceptance Criteria
- Receiver Threshold Test
- Non-Service Affecting Maintenance
- Service-Affecting Maintenance

**Fiber Test Equipment**

- Power Meters - RX
- Handheld Video fiber inspection scope without power meter
- PC based USB fiber inspection
- Visible light sources
- Visual Fault Locator
- Fiber Scope Software Installation

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## Loss Testing

- Performing a Reference on a Powermeter and Lightsource
- Setting wavelength on Powermeter and Lightsource
- Installing Fiber Loop on Tower Top
- Raycap/Rosenberger Fiber Distribution Pre-Testing Prep
- Standards, specifications and Terminology
- Raycap/Rosenberger Fiber Distribution Fiber testing Tower Top Procedure
- Ground Test Procedure

## Fiber Cleaning

- Use of Alcohol for Cleaning Connector Ferrule
- Alcohol Swabs
- Fiber Distribution Panel Inspection and Cleaning