

FTTx for Installers & Technicians



Course Description

This three-day class has been developed with 12 hours of classroom training and 12 hours of hands-on skills labs that provide the practical understanding and hands-on skills required to properly install and maintain Fiber-to-the-User (FTTx) networks. This course is focused towards installers, technicians, and supervisors that are involved with building, maintaining, and troubleshooting FTTx networks. Students will learn about all aspects of FTTx deployments including specific issues—such as testing splitters, WDM devices, measuring reflectance, and bidirectional testing—that are unique to FTTx networks.

Course Level

Introductory to intermediate. Beginners to experienced FTTx technicians find the class and extensive hands on skills training beneficial.

Course Options

Three days – Classroom lecture and hands-on exercises.

COURSE FEES

- Three-day course \$1500
- Optional ETA FOT-OSP Exam \$150

Certification

ETA Fiber Optic Technician—Outside Plant



Complete the three-day FTTx for Installers and Technicians course and pass the ETA Fiber Optic Technician—Outside Plant (FOT-OSP) certification exam. The FOT-OSP is designed for those installing outside plant single-mode fiber optic networks.

Classroom (12 Hours)

FTTx Introduction

Fiber Optic Basics
Standards & Standards Groups

FTTx Methodology

Passive Optical Networks
B-PON • G-PON • 10G-PON
EPON • 10GEPON
Active Ethernet
RF Overlay • NG-PON

Systems

FTTx / FTTH / FTTB / FTTP
RF over Glass
Active Ethernet

Fiber Theory for FTTx

Optical Fiber

Fiber Specifications
Single-mode Fiber (ITU G.652)

Optical Cable

Cable Structures
Loose Tube Cables
Feeder, Distribution, and Drop Cables
Indoor / Outdoor Cables

Termination Options

Types and Polishes
Hardened Terminations

Splitters

Types and Specifications

Panels, Closures and Cabinets

Patch / Distribution / Splice
Entrance Enclosures
Fiber Distribution Hubs and Pedestals
Splice Closures and MST

WDM in FTTx Applications

Active Devices

Lasers
Detectors

OLTs and ONTs

Loss Budgets

Cable Installation Techniques

Direct Burial / Duct / Aerial
Codes and Specifications
Termination Options
FTTB techniques and Options

Testing FTTx Systems

OTDR Testing
Optical Loss Testing
Testing Splitters
Fiber Identifiers
Visual Tracers
Documentation

Maintenance and Restoration

Typical Causes of Failure
Troubleshooting Techniques
Emergency Restoration Planning

Hands-on (12 Hours)

TRAINING LABS AND CERTIFICATION TESTING

Safety Meeting

Station #1 – Cable Management

Cable Preparation
Mid-entry Practices
Closure Preparation
Panel Dressing
Splitter Installation
Splice Tray Fiber Routing

Station #2 – Splicing

Strip and Cleave Processes
Inline and Pigtail Splicing
FTTx Splicing Equipment
Fixed V-groove and Core
Alignment Splicers

Station #3 – OTDR Testing

Theory and Operation
OTDR Use in FTTx Installations
FTTx OTDR Signatures
Measuring Reflectance
Testing Splitters

Station #4 – Optical Loss Testing

FTTx Test Equipment
Testing OLT / ONT Power Levels
Test Points in FTTx Installations
Upstream / Downstream Testing
Troubleshooting
FTTx Documentation

“The instructor’s expertise was clearly evident.... Excellent job of presenting the material and applying it to situations we are dealing with in our daily activities.” – Mike Bounds, PIONEER TELEPHONE