Advanced OSP Technician

Detailed Course Outline

Light Brigade®
FIBER OPTIC TRAINING

This four-day course includes one day of classroom learning and three days of hands-on labs exercises focused on specific fiber optic outside plant disciplines. Developed as the "next level" of training, this class teaches more advanced knowledge and skills to students that have already had formal introductory classes or several years of experience working with fiber optics.

The course material is designed for advancing a technician's fiber installation skills and technology knowledge. This includes introductory content for FTTx and xWDM systems as well as OSP skills like emergency restoration and fiber characterization.

Prerequisites: Requires basic knowledge of fiber optic theory and terminology, as well as field experience, or formal training such as the Fiber Optics 1-2-3 course or an equivalent.

Certifications and Credits: ETA Fiber Optic Technician—Outside Plant (FOT-OSP) Certification
BICSI Continuing Education Credits
Light Brigade Digital Credentialing

Theory and Applications Review

Safety
- Visual safety with fiber optic sources
- Working with optical fibers
- Chemicals

Terminology & Concept Review
- Theory
- Fiber and cable
- Connectors
- Splicing
- Fiber and cable management
- Installation

Trends in Fiber Optics
- Outdoor cable styles with ribbon fiber
- Microduct cables
- Aerial fiber optic cables
- ADSS and OPGW cables
- 200µm fiber
- Collapsible ribbon
- Complex architectures
- Improvements in FTTx
- CWDM/DWDM

FTTx Fundamentals
- FTTx economics
- Basic FTTx architecture
- Advanced FTTx architectures
- Centralized vs distributed splits
- FTTx testing

Emergency Restoration
- Types of fiber optic damage
- Frequently encountered problems
- Failure rates of fiber optic systems
- Emergency restoration kit requirements
- Equipment used in the restoration role
- Premises restorations
- Post-restoration recommendations

Introduction to Fiber Characterization
- Fiber characterization defined
- Review of conventional testing protocols
- Chromatic and polarization mode dispersion
- Spectral attenuation

Wrap-up and Review

Hands-on Skills Learning

Participants will build and troubleshoot a fiber optic link from patch panel to patch panel through various splice closures and with multiple drops. During this "network build", students will learn the following:

Lab Safety
- Practice safety during the labs for yourself and your fellow participants.

Cable Preparation
- Prepare a stranded cable for butt-entry installation into a fiber closure/panel.

Prep Panel/Closure
- Secure cables to closure/panel and route blue tube to splice tray.

Fanout Kit
- What is a fanout kit and how do I use it?

Splice Closures
- Splice the blue tube fibers in the splice trays of the closures.

Pigtails for Panel 1
- Splice the blue tube fibers to pigtails in Panel 1.

Fuse-on Connectors for Panel 2
- Use fuse-on connectors to terminate the blue tube fibers in Panel 2.

Splicer Menu Options
- Review key splicer menu options.

Mid-entry Cable Preparation
- Prepare a stranded cable for mid-entry installation into a fiber closure/panel.

Mid-entry Closure Preparation
- Secure cables to closure and route blue tube to splice tray.

OTDR Overview
- Discuss functions, features, limitations, and accessories for effective OTDR usage.

OTDR Testing
- Use an OTDR to test and identify issues with the class-built fiber span.

Optical Loss Budgets
- Create a loss budget for the classroom assembled link.

Optical Loss Testing
- Determine optical loss for the classroom assembled link and compare to the calculated loss budget.

Fiber Identifier
- Use a fiber identifier to prevent cutting a live fiber.

VFL
- Use a visual fault locator to find failures in the classroom assembled link.

Documentation
- Discuss documentation that may be required on the job.

Ribbon Splicing
- Fusion splice ribbon fiber

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