Advanced OSP Technician

Detailed Course Outline

This four-day course includes 8 hours of classroom learning and 24 hours 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 ITS Continuing Education Credits
Light Brigade Certificate of Completion

Theory and Applications Review

Safety

- Working with lasers
- Visual safety using fiber optic sources
- Working with optical fibers
- Chemicals

Terminology & Concept Review

- Theory
- Fiber
- 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
- 200 µm fiber
- Collapsible ribbon
- Complex architectures
- Improvements in FTTx
- CWDM/DWDM

FTTx Fundamentals

- FTTx defined
- 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 dispersion
- Polarization mode dispersion
- Spectral attenuation

Wrap-up and Review

8039 South 192nd St. • Suite #100 • Kent, WA 98032 • (206) 575-0404 • Fax (206) 575-0405 • www.lightbrigade.com

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:

Station #1 – Cable Preparation

- OSP cable and closure preparation
- Mid-entry practices on outside plant, loose tube cables

Station #2 – Splicing

- Fusion and mechanical splicing
- Single fiber, standard ribbon and collapsible ribbon splicing
- Splice-on terminations (connectors)
- Connector testing and inspection

Station #3 – Loss Testing

- Optical loss testing
- Building LAN panels
- Total span testing
- Testing Tx and Rx power levels
- Troubleshooting
- Reflection and Optical Return Loss testing

Station #4 – OTDRs

- Proper settings on the OTDR
- Interpreting OTDR results
- Splice testing
- Reflection testing
- Span troubleshooting and restoration