

Hands-On

# ETA Fiber Optic Technician Outside Plant (FOT-OSP) Certification



## Course Description

This Hands-On 4-day course (Optional 3 Day without ETA Certification, you will receive a BTS Certificate of Completion) has been customized to provide technicians with a refresher and practical understanding of fiber optic theory and fiber applications for singlemode Outside Plant fiber including proper placement and splicing (This is not a Fiber Splicing course See our other courses for Fiber Splicing and Testing).

This is a Certification Course, it is designed to Confirm the technicians fiber optic knowledge.

This is an ETA Approved course and covers all aspects of the Electronics Technicians Association International requirements for the FOT-OSP certification giving the participant a refresher on applicable methods and standards.

The course is comprised of 2.5 days of review on Outside Plant Fiber (OSP) , Connector installation methods, testing standards and methodologies. Testing is 1.5 days and comprised of a written and a hands-on skills test including cable and splice case prep.

Successful participants will receive ETA Certification that is valid for 4 years.

Our instructors have actual field experience and have faced the same obstacles as your team. Our Real World Experience allows us to provide the participants with the answers and the skills to overcome their daily challenges.



## Students Will Learn

- **Fiber Review of Fiber Optics And Light Transmission**
- **Overview of Basic Fiber Optic Testing Practices**
- **The Proper Set-Up, use, and Interpretation of Results Using an OTDR (Optical Time Domain Reflectometer) On a Fiber Circuit.**
- **Over-All Length of Fiber Circuit Under Test. Length Of Each Segment Of Fiber In-Circuit.**
- **Acceptable vs. Unacceptable Splice /Connector Loss**
- **dB Loss in Each Segment of Fiber in Circuit.**
- **Understanding Loss vs. Power Budgets.**

- **Effects of Micro Bending On Waveform.**
- **Broken Fiber in Circuit.**
- **Wavelength of Laser Setting.**
- **Understanding OTDR Laser Pulse Widths.**
- **Index of Refraction and How it Affects Fiber Testing.**
- **Distance Scale Setting.**
- **Review of Decibel Ratios and dB Scale Setting.**
- **Chromatic and Polarization Mode Dispersion**
- **Reflectance and the Contributions to Optical Return Loss (ORL)**
- **And More...**

## Target Audience

Technicians, installers, splicers, contractors, telecom managers, engineers, and anyone involved in repairing, installing, maintaining, designing, evaluating, or provisioning active and passive WDM, DWDM and OTN systems.

## Prerequisites

A firm understanding of telecommunications and basic fiber optic splicing, termination, and testing are required prior to taking this course. This training is available in additional BTS courses.

## Course Outline

### Module I: Fiber Optic Systems

Advanced Fiber Optic Systems  
 Active network design features  
 WDM technology and how its used in FTTH

### Module II: Testing and Troubleshooting Fiber Systems

Understanding attenuation  
 Causes of attenuation  
 Testing attenuation at different wavelengths  
 Understanding back reflection  
 Understanding optical return loss (ORL)  
 APC (Angled Physical contact) connector versus UPC connectors  
 Dispersion characteristics and pulse spreading issues  
 Loss budgets and power requirements, Engineered vs. Actual Measured Loss (EML/AML)  
 Testing CD and PMD (Equipment for hands-on should be provided by the customer so technicians will learn on equipment)

that will be used in the field)

### **Module III: G.650.3 Fiber Characterization**

Understand the G.650.3 Standard  
Required test equipment  
Setup of the OTDR  
Analyzing OTDR traces  
CD and PMD Testing  
2-point and 4-point measurements  
Testing at different wavelengths  
Attenuation Profile (AP)  
Measure fiber length, loss and back reflection  
Measure to events and how to add template events  
Setup of the power meter and light source  
Interpreting PM and light source results  
Using visible light sources (VFL)

### **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**

4 Days