

Hands-On

# ETA Fiber Optic Installer (FOT-FOI) 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 and multimode fiber. It also includes an introduction to fiber 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-FOI certification giving the participant a refresher on applicable methods and standards.

The course is comprised of 2.5 days of review on Inside Plant Fiber (ISP) and 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.

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 Manufacturing Methods.**
- **Fiber Optic Theory and Waveguide Functions.**
- **Singlemode (OSP) And Multimode (ISP) Fiber Types.**
- **The Causes of Attenuation, Optical Reflection and Refraction.**
- **Optical Dispersion Characteristics and Pulse Spreading Issues.**
- **Loose Tube Style Trunk Cables**
- **Distribution and Feeder Cables.**
- **Fusion Splicer Applications and Fiber Alignment Systems**

- Mechanical Splicing Uses and Applications
- Optical Connector Styles and Applications
- Back Reflection Issues and Angled Physical Contact Connectors
- Patch Panels and Functions for Distribution and Transmission
- ISP/OSP Style Splice Closure Styles and Function
- Cable Entry Methods and Splitter Configurations
- Drop Cable Connectivity and Security
- Cable Installation Methods as Direct Bury, Aerial and Ducted
- Emergency Restoration Issues, Future Planning, Restoration Kits
- Safety Practices
- Topologies for Urban and Rural Communities
- Splitters, ONTs/OLTs/ODNs
- Intro to Optical Testing and Troubleshooting.
- Visible Light Sources, OTDRs And Power Meters
- Testing Methods For ISP/OSP Systems
- And More...

## Target Audience

Technicians, installers, splicers, contractors, telecom managers, electricians, and anyone involved in repairing, installing, maintaining, designing, evaluating, or provisioning fiber optic systems and local area networks.

## Prerequisites

A basic 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 General Studies

Common Industry Terminology  
 History of Fiber Optics  
 Advantages/Disadvantages of Fiber Optics  
 Basics of a Fiber Optic Communications System  
 Fiber Types and Manufacturing Processes (Lecture and Video)

### Module II: Fiber Optic Safety Issues

LASER Safety and Warning labels  
 Types of LASERs  
 LASER Output Power Levels

Eye Safety Precautions  
Safe Glass Disposal Practices  
Food and Drinks Not Safe  
Proper Person Cleanliness  
Safe Work Surroundings  
Confined Spaces Issues

### **Module III: Fiber Optic Cable Installation**

Project Considerations  
Cable Pre-testing  
Cable Reels Identification and Handling  
Proper Cable Pulling Techniques  
Outdoor Cable Design Characteristics  
Direct Bury Cable Installation  
Directional Boring Methods  
Buried Cable Depths  
Man Holes and Vaults  
Cable Pulling Specifications  
Tensile Strength and Bend Radius  
Avoiding Installation Obstacles  
Grounding and Bonding Fiber Cables  
Identifying Cable Types  
Work Area Protection Issues

### **Module IV: Fiber Optic Connectors**

Connector Types  
Different types  
Use of connectors  
ST Style Connector Assembly; Hand and/or Machine Polishing and Inspection  
SC Style Connector Assembly; Hand and/or Machine Polishing and Inspection  
FC, LC, MIL-C Series, Biconic, etc.

### **Module V: Splicing**

Mechanical and Fusion Splicing  
Fusion Splicer Types and Operations  
Precision Cleaver Operation  
Set-up Fusion Splicer and Cleaver Work Stations  
Practice Fiber Stripping, Cleaning, and Cleaving  
Practice In-Line Fusion Splicing  
Practice Pigtail Fusion Splicing  
Qualify Acceptable Splices

### **Module VI: Fiber Optic Testing**

The dB Scale and Units of Loss  
OTDR Functions for Testing

OTDR Testing for Splices, Distances and Back Reflection  
OTDR Trace Guidelines  
The Dead Zone  
Trace Events and Interpretation  
Testing at Various Wavelengths  
System Loss Parameters  
Calculating System Loss  
Total System OTDR Testing  
Optical Loss Test Sets (OLTS)  
Referencing the Test Set First  
Measuring Cable System Loss  
Documenting Test results

## **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