

Certified Fiber Optic Technician - FOA

4.5 Days, 3.6 CEUs

In this course, students will learn how to understand the limitations of bending, effects of temperature, how to effectively splice and connectorize fiber optics, troubleshoot a system and confirm the quality connections and splices. All these skills are necessary to properly install and repair fiber optics systems.

Participants completing the course exercises and lab requirements will be given the Fiber Optic Association (FOA) exam for Certified Fiber Optic Technicians. This exam is proctored by a certified FOA instructor and participants must score the minimum (70%) to meet the FOA certification requirements.

Pre-Requisites:

This course is intended for electrical contractors, electricians, IT technicians, communications technicians, and any personnel that specifies, installs, and restores fiber optics systems.

PPE Requirements:

AVO is committed to the personal safety of each participant and requires appropriate apparel for lab activities. Long pants and ANSI rated "safety-toe" work shoes are acceptable as meeting this requirement.

Learning Objectives:

Upon completion of this course and lab practice, the participant will demonstrate by attaining a minimum average of 80% (between lab and final exam), that he/she is able to:

- Identify and specify components for a fiber optic system.
- Determine the appropriate fiber for different applications, install fiber optic cable and test for EIA/TIA acceptable losses.
- Utilize fiber optic test equipment, including an optical time domain reflectometer (OTDR), light source and power meter.
- Install and test mechanical and fusion splices to EIA/TIA standards.
- Identify damage to cables and the associated causes, also budget for losses in fiber optic systems.
- Utilize attenuators to adjust power levels (DBM) at the receiver.

SCOPE

Day 1*

- I. **Introduction**
 - A. Schedule
 - B. Course Outline
 - C. FOA
- II. **FIBER BACKGROUND**
 - A. History of Fiber Optics
 - B. Justifying Fiber Installations
- III. **Basics of Fiber Optics**
 - A. Optical Fiber
 - B. Index of Refraction
 - C. Fiber Applications
 - D. Fiber Performance
- IV. **Fiber Optic Applications**
 - A. Economics
 - B. Telephony
 - C. CATV
 - D. Premises Cabling and Local Area Networks
- V. **Fiber Optic Cables**
 - A. Construction of Fiber Optic Cables
 - B. Types of Fiber Optic Cables
 - C. Selection of Fiber Optic Cables

VI. Specifying Fiber Optic Cable

- A. Installation Specifications
- B. Environmental Specifications
- C. Future Proofing

Day 2

VII. Fiber Optic Connectors and Splices, and Tools

- A. Fiber Joints and Connectors
- B. Strip, Clean, and Cleave
- C. Polish Techniques
- D. Lab - Fiber Connectorization (4 Hours)

VIII. Fiber Optic Hardware

- A. Premises Cabling
- B. Outside Plant Hardware
- C. Trenching

IX. Getting Started in Fiber Optics

- A. Cabling
- B. Training
- C. Tools and Test Equipment
- D. Marketing

X. Guidelines for Fiber Optic Design and Installation

- A. General
- B. Cable
- C. Connector

Day 3

XI. Cable Plant Loss Budget Analysis

- A. Calculate Loss Budget
- B. Passive Component Loss
- C. Equipment Link Loss Budget Calculation

XII. Fiber Optic Installation Safety

- A. Safety Procedures
- B. Safe Work Practices
- C. Personal Safety Equipment
- D. Maintaining a Safe Work Area
- E. Basic Safety Rules

XIII. Planning the Installation

- A. Measuring for Conduit Pulls
- B. Splicing
- C. Terminations
- D. Efficient Pulling
- E. Initial Planning Walkout

XIV. Fiber Optic Plant Documentation

- A. Cable Plant Record Keeping
- B. The Documentation Process
- C. Maintaining Documentation

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SCOPE (Cont.)

Day 3 (Cont.)

XV. Estimating and Bidding Fiber Optic Installations

- A. Estimating Skills
- B. Tools
- C. Site Visit
- D. Fiber Optic Installations

XVI. Fiber Optic Cable Pulling

- A. Avoiding Disasters
- B. Despooling Cable
- C. Procedures for Pulling Cables
- D. Proper Stripping Method

Day 4

XVII. Fiber Optic Restoration

- A. Planning for Restoration
- B. Identifying Problems
- C. Restoring Service
- D. Storing Spare Cable

XVIII. Fiber Optic Testing

- A. Overview
- B. Optical Power
- C. Fiber Testing
- D. Connector and Splice Testing
- E. Cable Plant Testing
- F. Peripheral Equipment Testing
- G. Lab - Fiber Optic Splicing and Testing (4 Hours)

Day 5 (Half Day)

XIX. Review, CFOT Exam

*Class scheduling times may vary based on discussions and size of class

STANDARD EQUIPMENT LIST

CERTIFIED FIBER OPTIC TECHNICIAN -FOA

REVISED 3/30/17 BY: TOM NORWOOD / J. JACKSON

COURSE NUMBER 404C, REV2

4.5 DAYS

TEXT

1 / STUDENT	<i>FIBER OPTICS TECHNICIANS MANUAL - 4TH EDITION</i> (HAYES) (DELMAR PUBLISHING) (ISBN-13-978-1-4354-9965-2)
1 / STUDENT	CFOT STUDENT PACKET
1 / STUDENT	CURRENT FOA AFOT EXAM (FROM FOA INTERNET SITE WITH EQUAL NUMBER OF A, B, AND C.)

EQUIPMENT FROM RENTELCO

2 / CLASS	FUSION SPLICER WITH CLEAVER (CURRENT MODELS)
1 / CLASS	MULTIMODE OTDR (CURRENT MODEL W/FC)
1 / CLASS	SINGLEMODE OTDR (CURRENT MODEL W/FC)
1 / CLASS	LIGHT SOURCE
1 / CLASS	POWER METER
1 / CLASS	MM JUMPER & ADDAPTOR KIT
1 / CLASS	SM JUMPER & ADDAPTOR KIT

ADDITIONAL TOOLS AND EQUIPMENT

1 / STUDENT	STANDARD SAFETY GLASSES (REMAIN WITH STUDENT)
3 / STUDENT	TYPE ST 62.5/125mm CONNECTOR
3 / CLASS	1 - Km SPOOL OF SINGLEMODE FIBER
3 / CLASS	1 - Km SPOOL OF MULTIMODE FIBER
1 / 2 STUDENTS	FIBER OPTIC TOOL KIT
2 / CLASS	ST-ST MULTIMODE JUMPER
2 / CLASS	ST-ST CONNECTOR BARREL
2 / CLASS	SC / FC CONNECTOR BARREL
2 / CLASS	ST / FC CONNECTOR BARREL
3 / STUDENT	SC ANAEROBIC CONNECTOR – MM – ZIRCONIA
1 / CLASS	ANAEROBIC ADHESIVE KIT
1 / 2 STUDENTS	FIS HEAT CURE EPOXY (BROWN CURE 2.0 GRAMS)
3 / CLASS	MULTIMODE MECHANICAL SPLICE (2 DIFFERENT ONES)
3 / CLASS	SINGLEMODE MECHANICAL SPLICE (2 DIFFERENT ONES)
2 / CLASS	ELECTRIC HEAT GUN
4 METERS / STUDENT	62.5 /125mm MULTIMODE SIMPLEX CABLE (3mm O.D.)
1 / CLASS	MULTIMODE LAUNCH CABLE
1 / CLASS	SINGLEMODE LAUNCH CABLE
1 / CLASS	FIBER OPTIC CABLE PROPS

STANDARD EQUIPMENT LIST

CERTIFIED FIBER OPTIC TECHNICIAN -FOA

AUDIO VISUAL EQUIPMENT

1 / CLASS POWERPOINT PROJECTOR
1 / CLASS BOARD WHITE WITH MARKERS

SPECIAL INSTRUCTIONS FOR MATERIALS/CONSUMABLES:

CURRENTLY PURCHASED THROUGH “FIBER INSTRUMENT SALES”

www.fiberinstrumentsales.com

- 1) SIMPLEX CABLE (PATCHCORD)----- 3.0 mm Simplex Cable Part # M62-SX01-C3NRO
- 2) SC CONNECTOR-----Type SC Connector FIS part # 13066AR
- 3) ST CONNECTOR-----Type ST Connector FIS part # F10066100 (100 count)
- 4) REPLACEMENT CONSUMABLES--- Replacement Consumables FIS part # F1-0053D
- 5) Use current FIS Product Catalog for additional purchases that occur from time to time based on use.