OUR COMPANY

KITCO Fiber Optics is a leading provider of fiber optic termination products and consulting services to the military and commercial communications industry. We specialize in the design and fabrication of fiber optic tools, tool kits and custom cable assemblies. We also produce private label kits for a number of major connector manufacturers and sell our own broad line of products. Our field services division performs on-site termination, splicing, troubleshooting and testing support, and our training division provides hands-on training and certification programs.

We are recognized within the defense industry as fiber optic connectivity experts and, for over 20 years, have customized our products and services to meet strict military standards. We work with and support major defense contractors and government agencies such as AMSEC, Boeing, General Dynamics, L3 Communications, Lockheed Martin, NASA, Northrop Grumman, SERCO and the U.S. Armed Forces.

OUR MISSION

Our mission is to be the leading provider of fiber optic connectorization products, training and services to the military and commercial communications industry. We will do this by exceeding our customers' expectations for service, quality and responsiveness in a way that also benefits our employees, our suppliers and our community.

OUR TRAINERS

KEVIN BARKS
Training Manager

EAST COAST

FELIPE GUADALUPE
Trainer

GLENN BURCH
Trainer

SCOTT DADAIAN
Trainer

BILL RALSTON
Trainer

WEST COAST

GREG HENRY
Trainer

MARK MYLAND
Trainer

GEORGE "FRANKIE" FRANCESCHI
Trainer

TRAINING OVERVIEW

KITCO's superior hands-on training is designed and delivered by the fiber optic experts and can affordably have you up to speed and certified in a week or less! Our trainers have exceptional credentials including advanced industry certifications, substantial field experience and over 140 years of combined direct classroom experience. We have trained thousands of students worldwide on terminating, splicing and testing fiber systems. KITCO's state-of-the-art training facilities are located in our headquarters in **Virginia Beach, Virginia** and in **National City, California** serving the San Diego and surrounding areas. Our classrooms feature state-of-the-art equipment and toolings with realistic mock-ups of shipboard applications that meet the latest industry requirements. Our established mobile training services provide the ability to train globally at your desired location–anywhere in the world–customizing and tailoring our courses to meet your training requirements.

"We're ready to roll at a moment's notice."

NAVSEA TRAINING

This is mandatory training for any person that currently is or has the potential to perform Navy Shipboard fiber optic installations. These personnel include (but not limited to) supervisors, fiber optic QA inspectors, installers/technicians employed by: Ship Builders, SUPSHIP, and Government/Contracted Installation/Repair Teams, AIT's, Ship/Planning Yards, OSR's, RMC's, FMA's, ISEA'S, and Industrial Activities. All personnel that currently are or have the potential of performing Navy shipboard fiber optic installations in any form (e.g., pulling fiber, installing connectors, installing fiber optic interconnection boxes, testing fiber optic links, etc.) shall obtain Navy shipboard fiber optic training from a training organization included on the Certified Fiber Optics Trainers List (CFOTL).

These modules are created and provided by the Certified Organization and are in accordance with the training curriculum requirements, as specified in Section 5 of NAVSEA Drawing 8477552.

Any organization responsible for performing fiber optic installations on new construction, alterations, or repairs of ships, whether public or private are required to attend certified training from a Certified Fiber Optic Trainer company maintained by the NSWCDD Fiber Optics Section. KITCO Fiber Optics is pleased to announce we are the first approved Certified Fiber Optic Training Company to offer this training.

In order to more effectively offer this training, KITCO has bundled certain complimentary modules such that multiple modules are presented in a course format.

MILITARY TRAINING

KITCO develops curriculum and provides training world-wide for the U.S. Armed Forces. KITCO is the only company certified by NETC (Naval Education Training Command) to meet the requirements to train Sailors. Over the last decade our KITCO instructors have worked closely with shipyard and Navy personnel terminating and testing fiber optic topologies aboard U.S. Navy ships and submarines. In addition, our instructors collaborated on the design of termination and testing equipment currently specified in MIL-STD-2042B (SH) and MIL-STD-2042C (SH) sections 5 and 6 (the standard governing the use of fiber on U.S. Navy ships). Using this experience, we provide the only commercially available shipboard training course that teaches fiber principles in strict adherence to Navy standards, and we are working closely with the U.S. Army and Marine Corps to develop battlefield maintenance and fiber optic support training.

COMMERCIAL TRAINING

We are proud to be one of the nation's premier providers of certified commercial fiber optic training. Our courses are industry recognized and approved for certifications by 3M and KITCO. Industry standards including those of the Telecommunications Industry Association (TIA) and the National Electrical Code (NEC) are incorporated into KITCO's courses. Students are offered the option of taking the Electronics Technicians Association (ETA) Certified Fiber Optic Installer (CFOI) and the Certified Fiber Optics Technician (CFOT) exams.

CONTENTS

STUDENT TESTIMONIALS

"

*I've been an instructor for the Navy and have gone through several Navy courses. This was **one of the best**. I learned more in one week here than I did in multiple weeks in other courses. Keep up the good work. Thanks!*

*All topics for this course were taught on a very personal level and easy for anyone to understand. The class environment was **fun**; I greatly enjoyed the teaching style. I've never had such an easy time learning.*

*Best class ever! Frankie was the best instructor ever—very knowledgeable about fiber optics, very **enthusiastic and friendly**.*

*The course was very easy to understand. The labs were very helpful. T**he instructor was willing to stay after class** if any additional instruction was required.*

*This course was both challenging and instructive. This is exactly what I wanted. The methods, both the hands-on and the instructor's methods were outstanding—**well worth the cost**.*

*Instructor's training style made it more helpful for me to learn the material. I enjoyed the course greatly. **Labs were very helpful** to learn the material and I appreciated the instructor's desire for our success!*

*Enjoyed the course. I feel that the instructor did a great job of teaching the course. He was very knowledgeable of all the material covered, made the class fun and **entertaining but meaningful at the same time**.*

***The instructor-to-student-ratio is better than most training environments**. Knowledgeable instructors who have the ability to teach at a basic level of understanding.*

*The instructor was extremely knowledgeable and very willing to explain any questions the class had. His teaching skills are outstanding; he knows how to keep things fun and interesting as well as put things in a way that allows an average person to understand. I thoroughly enjoyed and would **recommend this class to anyone wishing to be certified in this field**.*

*The course was **very detailed in all aspects… best school I have been to** in my naval career. I feel confident in working with fiber optic cables on my ship.*

*The instructor was outstanding. **The most I have ever learned in a Navy class**. For the first time I feel that I can fully complete the skill sets learned in the fleet. I am looking forward to sending my sailors to this class in the future.*

*Scott is by far the **best instructor I've had** in the military. Considering all of the information required and the amount of time, this class was fun. Fun = better learning. Thank you!*

*Mr. Barks is undoubtedly the SME for fiber. **Outstanding job!***

*The instructor was very knowledgeable about the subject and made it easily understandable, even for people like me with no prior experience. **The hands-on nature of this class is great!***

"

NAVSEA - *Navy Shipboard Fiber Optic Certified Training Program (NSFOCTP)*

- **CORE Module (4 hours)**
  Includes: Theory and Safety

- **CABLE HANDLING Module (16 hours)**
  Includes: Conventional and BOF Cable Handling, Penetration and Repair

- **FORMING Module (8 hours)**
  Includes: Forming, Routing and Shaping in an FOICB/ TRB and Cable End Sealing

- **BLOWN OPTICAL FIBER (BOF) Module (32 hours)**
  Includes: Tube Furcation, Cable Splicing, BOF Testing, Forming, Shaping and Routing

- **SINGLE FERRULE (SF) Module (8 hours)**
  Includes: SF Connector Inspection and Cleaning, SF Connector Termination

- **MULTI TERMINUS (MT) Module (16 hours)**
  Includes: MT Connector Inspection and Cleaning, MT Connector Termination

- **FUSION SPLICING Module (8 hours)**
  Includes: Fusion Splicing and Preparation and Attachment into a Splice Tray

- **OPTICAL TESTING Module (12 hours)**
  Includes: Inspection and Cleaning, Link Loss, Optical Return Loss, Continuity, MQJ Selection, and Attenuation Testing

- **SUPERVISOR/QA Module (32 hours)**
  Includes: Core and overview of all modules. Course is instructor led and there is no student hands-on in this training.

6000-2150- Bundle 1 Training includes all modules outlined for the Fiber Optic Technician. This course is 80-hours or 10 days, 8-hour days of training. Course includes Core, Cable Handling, Forming, Blown Optical Fiber, Single Ferrule (SF), Multi Terminus (MT), Fusion Splicing, and Optical Testing.

6000-2250- Bundle 2 Training is designed to support Fiber Optic Technician that is responsible for terminating and testing fiber optic cable assemblies onboard US Naval Ships. This 5-day, 40-hour course includes the Core, SF module, MT module and Optical Testing modules.

6000-2350- Bundle 3 Training is designed to support personnel that are responsible for installing conventional and BOF fiber optic cabling aboard US Naval Ships. The 3.5 day, 28-hour course includes the Core, Cable Handling and Forming modules.

6000-2450- Bundle 4 Training is designed to support personnel that are responsible for installing conventional cabling and Blown Optical Fiber (BOF) Cabling. Also includes training for personnel who will be performing Tube Furcation, BOF Testing, Forming and Routing in TRBs and FOICBs. The 5-day, 40-hour course includes the Core, Cable Handling, Forming, and BOF modules.

6000-2900- Bundle 5 Training is designed for personnel that work in Quality Assurance (QA) or Supervise fiber optic installations, cable building or testing of fiber topologies. This is a 32-hour, 4-day course and includes the mandatory Core module. This training is demonstration only and is designed for those personnel that are responsible for approving all aspects of the Certified Fiber Optic Installation.

Note: *The 32-hour BOF module does not qualify any individual to use the BOF Blow Head or to blow in BOF fiber aboard any US Naval vessel.*

6000-2150
Fiber Optic Installer Training

Includes all modules outlined for the Fiber Optic Technician. This course is 80-hours or 10 days, 8-hour days of training. Course includes Core, Cable Handling, Forming, *Blown Optical Fiber, Single Ferrule (SF), Multi Terminus (MT), Fusion Splicing, and Optical Testing.

- **5.2.3.1 CORE Module**
  Includes: Theory and Safety

- **5.2.3.2 Blown Optical Fiber (BOF) Module**
  Includes: Tube Furcation, Cable Splicing, BOF Testing, Forming, Shaping and Routing

- **5.2.3.3 Cable Handling, Penetration, and Repair/Modification Module**
  Includes: Conventional and BOF Cable Handling, Penetration and Repair

- **5.2.3.4 FOICB/TRB Forming, Routing, Shaping Module**
  Includes: Forming, Routing and Shaping in an FOICB/ TRB and Cable End Sealing

- **5.2.3.5 Fiber Optic Termination – Single Terminus (Light Duty) Module**
  Includes: SF Connector Inspection and Cleaning, SF Connector Termination

- **5.2.3.6 Fiber Optic Termination – Multi-Terminus (Heavy Duty) Module**
  Includes: MT- Connector Inspection and Cleaning, MT Connector Termination

- **5.2.3.7 Fiber Optic Termination - Fusion Splicing Module**
  Includes: Fusion Splicing and Preparation and Attachment into a Splice Tray

- **5.2.3.8 Optical Testing Module**
  Includes: Inspection and Cleaning, Link Loss, Optical Return Loss, Continuity, MQJ Selection, and Attenuation Testing
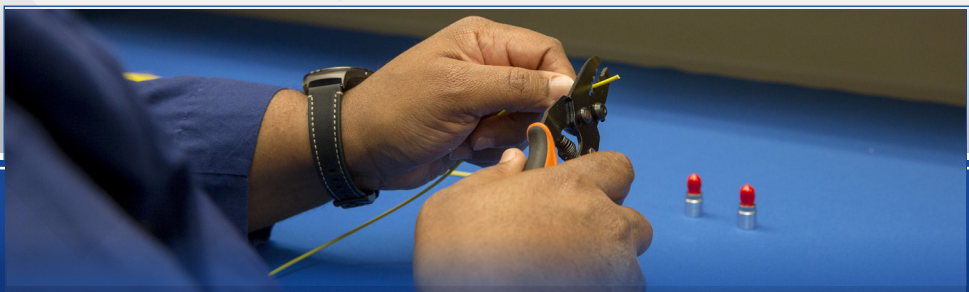
6000-2250
Fiber Optic Installer Training

Is designed to support the Fiber Optic Technician that is responsible for terminating and testing fiber optic cable assemblies onboard US Naval Ships. This 5-day, 40-hour course includes the Core, ST module, MT module and Optical Testing modules.

5.2.3.1. Core Module

The Core module is foundational material and is a prerequisite requirement for all other modules.

This curriculum shall include the following topics:

A. *Introduction to and history of Navy Shipboard Fiber Optics*
B. *Visual inspection of Fiber Optic components*
C. *Information regarding Qualified Products List (QPL) Components*
D. *Information regarding the Navy Recommended Fiber Optic Component Parts List*
E. *Information regarding the Navy Fiber Optic website*
F. *Adherence to all applicable references in Section 2 of NAVSEA Drawing 8477552*
G. *Safety requirements when handling fiber*
H. *Adherence to MIL-STD-2042C, MIL-STD-2052, MIL-HDBK-2051 and Policy Letters relating to fiber optic system design*

5.2.3.5 Fiber Optic Termination- Single Ferrule (Light Duty) Module

The Fiber Optic Termination – Single Ferrule (Light Duty) module is intended to train personnel on how to properly install and repair fiber optic single ferrule connectors in a Navy shipboard environment.

The Fiber Optic Termination – Single Ferrule (Light Duty) module shall include the following topics:

A. *ST Type Connector*
B. *Fiber Optic Connector Inspection and Cleaning*

The curriculum for this module shall adhere to:

a. *MIL-STD-2042C Part 5, Method 5B1, 5B2, 5B3, 5D3, 6M1*
b. *Policy letters relating to fiber optic system design*

6000-2250
Fiber Optic Installer Training (Continued)

5.2.3.6 Fiber Optic Termination- Multi-Terminus (Heavy Duty) Module

The Fiber Optic Termination – Multi-Terminus (Heavy Duty) module is intended to train personnel on how to properly install and repair fiber optic multi-terminus connectors in a Navy shipboard environment.

The Fiber Optic Termination-Multi-Terminus (Heavy Duty) module shall include the following topics:

A. Multi-Terminus (MT)
B. Heavy Duty Connector Mechanical Pull Test
C. Fiber Optic Inspection and Cleaning

The curriculum for this module shall adhere to:

a. MIL-STD-2042C Part 5, Method 5A1, 5A2, 5A3, 5A4, 5A5, 5A6, 5D1, 5D2, 6G1, 6M1
b. Policy letters relating to fiber optic system design

5.2.3.8 Optical Testing Module

The Optical Testing module is intended to train personnel on how to properly test fiber optic links in a Navy shipboard environment.

The Optical Testing module shall include the following topics:

A. Cable Assembly Link Loss Test
B. Cable Attenuation Test
C. Cable Continuity Test
D. Cable Topology End-to-End Attenuation Test
E. Cable Assembly Return Loss Test
F. Cable Topology End-to-End Return Loss Test
G. Fiber Optic Connector Inspection and Cleaning
H. MQJ Selection Test
   i.   MMF
   ii.   SMF

The curriculum for this module shall adhere to:

a. MIL-STD-2042C Part 6, Methods 6B1, 6C1, 6C2, 6D1, 6E1, 6E2, 6F1, 6K1, 6L1, 6M1

6000-2350
Fiber Optic Cable Installer Training

Is designed to support personnel that are responsible for installing conventional and BOF fiber optic cabling aboard US Naval Ships. The 3.5-day, 28-hour course includes the Core, Cable Handling and Forming modules.

5.2.3.1. Core Module

The Core module is foundational material and is a pre-requisite requirement for all other modules.

This curriculum shall include the following topics:

A. Introduction to and history of Navy Shipboard Fiber Optics
B. Visual inspection of Fiber Optic components
C. Information regarding Qualified Products List (QPL) Components
D. Information regarding the Navy Recommended Fiber Optic Component Parts List
E. Information regarding the Navy Fiber Optic website
F. Adherence to all applicable references in Section 2 of NAVSEA Drawing 8477552
G. Safety requirements when handling fiber
H. Adherence to MIL-STD-2042C, MIL-STD-2052, MIL-HDBK-2051 and Policy Letters relating to fiber optic system design

5.2.3.3 Cable Handling, Penetration, and Repair Modification module

The Cable Handling, Penetration and Repair/Modification module is intended to train personnel on how to properly handle, penetrate, repair, and modify fiber optic cables in a Navy shipboard environment.

This curriculum shall include the following topics:

A. Conventional and BOF Cable Handling
B. Conventional and BOF Cable Penetration
   i. Nylon Stuffing Tubes
   ii. Metal Stuffing Tubes
   iii. Multiple Cable Penetrators (MCP's)
C. Conventional and BOF Cable Jacket Repair
D. BOF Cable Splicing
E. BOF Cable Furcation

The curriculum for this module shall adhere to:

a. MIL-STD-2042C Part 1, Methods 1B1, 1C1, 1D1, 1C2
b. MIL-STD-2042C Part 2, Methods 2A1, 2B1, 2G1, 2H1, 2H2, 2H3, 2B2, 2B3
c. MIL-STD-2042C Part 3, Methods 3A1, 3B1
d. NSWCDD Fiber Optic Engineering Report, 13 October 2006, Subj: Tube Routing Box (TRB) and Fiber Optic Inter-Connection Box (FOICB) Density Evaluation Laboratory Test Summary
e. Policy letters relating to fiber optic system design

6000-2350
Fiber Optic Cable Installer Training (Continued)

5.2.3.4 FOICB/TRB Forming, Routing, Shaping module

The FOICB/TRB Forming, Routing, Shaping module is intended to train personnel on how to properly form, route, and shape fiber optic cables within FOICB's and TRB's in a Navy shipboard environment.

This curriculum shall include the following topics:

A. Conventional Cable
   i. Cable and OFCC End Sealing
   ii. Forming, shaping in an FOICB
B. BOF
   i. BOF Tube End Sealing
   ii. 8mm BOF Tube to 5mm BOF Tube Transition within a Protective Enclosure
   iii. Forming, Routing & Shaping

The curriculum for this module shall adhere to:

a. MIL-STD-2042C Part 1, Methods 1A1, 1E1
b. MIL-STD-2042C Part 2, Methods 2C1, 2I1, 2I2, 2J1, 2C2, 2L1
c. NAVSEA Drawing 8347174, Method 2L1
d. NSWCDD Fiber Optic Engineering Report, 13 October 2006, Subject: Tube Routing Box (TRB) and Fiber Optic Inter-Connection Box (FOICB) Density Evaluation Laboratory Test Summary

6000-2450
Fiber Optic Cable Installer & *BOF Training

Is designed to support personnel that are responsible for installing conventional cabling and Blown Optical Fiber (BOF) Cabling. Also includes training for personnel who will be performing Tube Furcation, BOF Testing, Forming and Routing in TRBs and FOICBs. The 5-day, 40-hour course includes the Core, Cable Handling, Forming, and BOF modules.

This course is made up of the 6000-2350 Cable Handling course plus the 5.2.3.2 Blown Optical Fiber Module.

5.2.3.2 Blown Optical Fiber (BOF) Module

The BOF module is intended to train personnel on how to install, repair, and test BOF in a Navy shipboard environment.

This curriculum will include the following topics:

A. *Cable Handling and Penetration*
B. *Forming, Shaping and Routing*
C. *8mm BOF Tube to 5mm BOF Tube Transition within Protective Enclosure*
D. *Tube Furcation to include MIL-STD-2042C, Method 2E1 BOF Tube Furcation Fabrication*
E. *Testing*
   i. Ball Bearing (BB) Test
   ii. Cable Pressurization Test
   iii. Cable Seal Verification Test

The curriculum for the BOF module shall adhere to:

a. *MIL-STD-2042C Part 1, Methods 1C1, 1D1, 1C2*
b. *MIL-STD-2042C Part 2, Methods 2E1, 2F1, 2G1, 2H1, 2I1, 2I2, 2J1, 2H2, 2H3, 2L1, 2F2, 2F3, 2F4*
c. *MIL-STD-2042C Part 6, Methods 6H1, 6I1, 6J1*
d. *NSWCDD Fiber Optic Engineering Report, 13 Oct 2006, Subj: Tube Routing Box (TRB) and Fiber Optic Interconnection Box (FOICB) Density Evaluation Laboratory Test Summary.*
e. *Policy letters relating to fiber optic system design*

6000-2900
Supervisor and Quality Assurance (QA) Training

Is designed for those personnel who are responsible for approving all aspects of the Certified Fiber Optic Installation. This is a 32-hour, 4-day course that includes the Core module.

All personnel that currently have the potential of Supervising or performing QA inspections of Navy shipboard fiber optic installations in any form (e.g., blowing fiber, pulling fiber, installing connectors, installing fiber optic interconnection boxes, testing fiber optic links, etc.) shall obtain Navy shipboard fiber optic training from a training organization included on the Certified Fiber Optic Training List (CFOTL). KITCO Fiber Optics is pleased to announce we are the first company to be approved to offer this training, and we are on the CFOTL. Each individual fiber optic Supervisor or QA inspector shall have an up-to-date certification for the work they are performing from a certified training organization on the CFOTL. Fiber Optic Supervisor or QA inspector personnel shall obtain Navy shipboard fiber optic training (CLASSROOM ONLY) in the following areas:

(Core module included with each):

5.2.3.1 Core
5.2.3.2 Blown Optical Fiber (BOF)
5.2.3.3 Cable Handling, Penetration, and Repair/Modification
5.2.3.4 FOICB/TRB Forming, Routing, Shaping
5.2.3.5 Fiber Optic Termination – Single Terminus (Light Duty)
5.2.3.6 Fiber Optic Termination – Multi-Terminus (Heavy Duty)
5.2.3.7 Fiber Optic Termination – Fusion Splicing
5.2.3.8 Optical Testing

Each individual fiber optic Supervisor or QA inspector shall present their training certification card, upon request, while performing Navy shipboard fiber optic work. The certification shall remain valid for 3 years before requiring recertification.

CERTIFIED MILITARY/ SHIPBOARD COURSE

40-HOUR COURSE

Since 1999, our 5-day Shipboard Fiber Optics Course has been approved by NETC as an equivalent to their Fiber Optic Maintenance Technician Course (A-670-0063). KITCO is the Navy's preferred provider of this course which is taught for the Navy at various naval bases and fleet concentration centers around the world in strict adherence to MIL-STD-2042() and NSTM-408. All of our instructors have real world experience, having spent, literally, thousands of hours terminating, splicing and testing fiber optic cable systems on over 200 U.S. Navy ships and submarines.

COURSE OVERVIEW:
Students who successfully complete our training course will have the experience and confidence to terminate Single Terminus (ST) and Multiple Terminus (MT) connectors, COTS SC connectors, test, troubleshoot and analyze shipboard fiber optic systems in accordance with MIL-STD-2042().

WHO SHOULD ATTEND:
This course is taught to those organizations who are responsible for repairing and maintaining an existing FOCP such as U.S. Navy Sailors and NATO Navy personnel through foreign military sales (FMS).

RECOMMENDED PREREQUISITES:
None. At KITCO, we understand the need to provide you with recognized industry certified training. Successful completion of the 5-day course and test qualifies you to receive the certifications noted.

ETA CFOI CERTIFICATION (OPTIONAL):
Students are offered the option of taking the Electronics Technicians Association (ETA) Certified Fiber Optic Installer (CFOI) exam for an additional fee of $150.00. Upon successful completion, you will be certified as an ETA Certified Fiber Optics Installer.

SHIPBOARD 38999 CONNECTOR COURSE

40-HOUR COURSE

COURSE OVERVIEW:

Our Shipboard 38999 Connector Course is designed to meet the requirements of military installations onboard ships. Students will terminate a variety of ST, SC and FC connectors as well as M29504/4 and M29504/5 termini pins and sockets. Industry standards including those of the Telecommunications Industry Association/ Electronics Industries Alliance (TIA/ EIA) and the National Electrical Code (NEC) are incorporated into the training and students are offered the option of taking the Electronics Technicians Association (ETA) Certified Fiber Optic Installer (CFOI) exam.

WHO SHOULD ATTEND:

Our course is designed for those students who will be installing and maintaining fiber optic systems and equipment on naval ships. After completing this course, each student will be able to successfully install, test and troubleshoot fiber optic cables and systems onboard naval ships. Students will become proficient in the termination processes for a variety of connectors used ion various Shipboard Systems..

RECOMMENDED PREREQUISITES:

None. Successful completion of the 5-day course and test qualifies you for the certifications noted.

ETA CFOI CERTIFICATION (OPTIONAL):

For an additional fee of $150.00 we will administer the ETA Certified Fiber Optic Installer (CFOI) exam. Upon successful completion you wil be certified as an ETA Certified Fiber Optic Installer.

ALL COURSE MATERIAL INCLUDED. ETA TESTING (CFOI): $150.00

HERMAPHRODITIC CONNECTOR COURSE

16-HOUR COURSE

Delphi's Harsh Environment Hermaphroditic Fiber Optic Connectors provide consistent optical performance when utilized in the harshest environments. They are available in 4-, 6-, and 12-channel configurations for both military and commercial applications. Military applications include pierside connectivity (ViViD) and tactical field use.

COURSE OVERVIEW:

KITCO's 2-day course is designed to meet the requirements of both military and commercial applications. Our mission is to provide our students with the hands-on knowledge and ability to successfully terminate and test a hermaphroditic connector.

WHO SHOULD ATTEND:

Anyone involved in design, configuration, installation, testing, troubleshooting, or fiber optic system maintenance: technicians, system analysts, design engineers, managers, telecommunication professionals, etc.

RECOMMENDED PREREQUISITES:

5-Day NAVSEA 6000-2250 Terminate and Test

At KITCO, we understand the need to provide you with recognized industry certified training. Our 2-day Hermaphroditic Connector Course will qualify you for the certifications noted.

BLOWN OPTICAL FIBER (BOF) INSTALLATION COURSE

—————————————— 16-HOUR COURSE

COURSE OVERVIEW:

This course provides the student with the history and development of the BOF technology, discusses the advantages and applications of BOF and establishes the "hands-on" experience necessary to properly set up and use the special equipment associated with BOF. Each student will set up the BOF equipment, perform specific maintenance functions on the equipment, and conduct a pre-installation BOF pressure test and projectile test. Once these tests are completed, each student will successfully blow four fibers into the BOF cable plant and perform a seal verification test on a pre-existing terminated BOF cable plant. This module provides each student with the unique experience of troubleshooting an existing BOF cable plant with various pre-installed faults. Each student is required to determine the probable causes and correct the problems.

The course will also provide the student with "hands-on" instruction in the techniques and requirements for forming, shaping and routing Blown Optical Fiber (BOF) cable into Tube Routing Boxes (TRBs) and Distribution Boxes (DBs). Topics include: cable entrance to equipment (TRB and DUs), tube forming and shaping, interconnection organization, cable slack requirements, internal tube routing, box marking, BOF tube bend diameters, BOF tube end terminating (hands-on), multiple cable penetrators, nylon stuffing tubes, BOF outer jacket stripping exercise and use of tools (hands-on), forming and shaping into a TRB and DU (hands-on), installation of tube couplers and tees (hands-on), installation of jumpers (hands-on), sealing of BOF tube cables (hands-on) and protection from mechanical damage requirements.

WHO SHOULD ATTEND:

Anyone involved in the installation, maintenance, design, testing or troubleshooting of Blown Optical Fiber topologies onboard U.S. Naval Ships and/or U.S. Naval Submarines or personnel working in the commercial sector involved with any aspect of Blown Optical Fiber Topologies. Technicians and supervisors, who are employed by companies that hold a lease agreement with General Cable to install General Cable's Blown Optical Fiber Tubing, Cable and Fiber. General Cable holds the master license and requires all companies holding lease agreements with them to ensure that their technicians involved in the installation process of Blown Optical Fiber be certified by attending a 2-day Installation Course offered solely by KITCO Fiber Optics.

RECOMMENDED PREREQUISITES:

None. At KITCO, we understand the need to provide you with recognized industry certified training. Successful completion of the Blown Optical Fiber Installation Course qualifies you to receive the certifications noted.

FLAT FEE FOR A GROUP OF UP TO 12 PARTICIPANTS (SAME COMPANY)

ALL COURSE MATERIAL AND LICENSES ARE INCLUDED

DATES: UPON REQUEST. CALL US AT 1-866-643-5220 OR 757-216-2222

MILITARY AVIATION TECHNICIAN'S COURSE

———————— 40-HOUR COURSE

COURSE OVERVIEW:

Our Certified Military Aviation Courses are designed to meet the requirements of the SAE ARP5602 (Society of Automotive Engineers) Knowledge Competencies and Skill Set requirements as well as the NAVAIR NA-01-1A-505-4 (Military Aircraft Fiber Optic Cabling). Students who complete this training are eligible to take the Aerospace Fiber Optic Installer examination (AFI108), the Aerospace Fiber Optics Technician examination (AFT107) or the Aerospace Fiber Optics fabricator examination (SAEFAB). In addition all aviation students may take the Fiber Optic Evaluation and Endface Cleaning examination (FEEC117) based on the ARINC 805 standard.

This course teaches the following connectors and termini:

MILSPEC

- ST Connectors
- LC Connectors
- M29504/4 Termini Oin (Style 1)
- M29504/5 Termini Socket (Style 1)
- D38999 Multi-Terminus circular connectors

Note: Custom connector training can be on a case-by-case basis. Let us know your particular requirements. Custom courses will be priced out accordingly.

WHO SHOULD ATTEND:

Our course is designed for those students who will be installing, connecting, cleaning and evaluating, repairing, testing and troubleshooting fiber optic systems and equipment on military aircraft. After completing this course, each student will be able to install and maintain fiber optic cables and systems onboard military aircraft.

According to MIL-STD 1678 the training required to work on military aircraft is as follows;

Actions shall be taken to ensure personnel are trained by training organizations certified for the training required proficiency skill sets. Organizations shall ensure that military maintainers, depot artisans, prime and sub-prime contractors, and others within the fiber optic community (both Governments and commercial) have

MILITARY AVIATION
TECHNICIAN'S COURSE *(Continued)*

initial and maintain an adequate skill set for their assigned fiber optic responsibilities. Implement reoccurring training or otherwise augment as needed to ensure skill set sustainment. Perishable skill sets are those that are lost or degraded rapidly (usually within months) if not practiced or performed. On military platforms, the fiber optic cable assemblies intended to be inspected and maintained are cable harnesses, (1) equipment (electronic module/package) such as an ATC, LRC, LRM, LRU or WRA with internal fiber optics, (2) circuit card modules and assemblies with internal optics, and (3) other miscellaneous cabling.

RECOMMENDED PREREQUISITES:

Successful completion of the knowledge competencies and skill sets as set forth in the ARP5602 and qualifies you to take the following ETA (Electronics Industry Association) exams:

- Aerospace Fiber Optic Installer examination (AFI108) based on SAE ARP5602
- Aerospace Fiber Optics Fabricator examination (SAEFAB) based on SAE ARP5602
- Aerospace Fiber Optics Technician examination (AFT107) based on SAE ARP5602
- Fiber Optics Evaluation and Endface Cleaning examination (FEEC117) based on the ARINC 805 standard.

Note: There is an additional $175.00 fee participate in each examination

COMMERCIAL AVIATION TECHNICIAN'S COURSE

———— 40-HOUR COURSE

COURSE OVERVIEW:

Our certified Commercial Aviation Technician's Fiber Optic Course is designed to meet the AIRINC 807-3 (Aircraft Radio Incorporated) Knowledge Competencies and Skill Sets associated with Commercial Aviation Fiber Optic training. Those who complete the course have the choice of taking the Aerospace Fiber Optics fabricator examination (SAEFAB). In addition all aviation students may take the Fiber Optics Evaluation and Endface Cleaning examination (FEEC117) based on the ARINC 805 standard.

This training course covers the following Commercial Aviation fiver optic connectors/termini:

Commercial

- LC Connectors
- ST Connectors
- ARINC 801 Termini (Loose-Structure)
- EN4531 ELIO Termini
- MIL-DTL38999 Circular Connectors

Note: Custom connector training can be on a case-by-case basis. Let us know your particular requirements. Custom courses will be priced out accordingly.

WHO SHOULD ATTEND:

Our course is designed for those students who will be installing and maintaining fiber optic systems and equipment on commercial aircraft. After completing this course, each student will be able to install, connect, repair, evaluate and clean, test and troubleshoot fiber optic cables and systems onboard Commercial aircraft.

RECOMMENDED PREREQUISITES:

Successful completion of the knowledge competencies and skill sets as set forth in the ARP5602 and qualifies you to take the following ETA (Electronics Industry Association) exams:

• Aerospace Fiber Optic Installer examination (AFI108)
• Aerospace Fiber Optics Fabricator examination (SAEFAB)
• Aerospace Fiber Optics Technician examination (AFT107)
• Fiber Optics Evaluation and Endface Cleaning examination (FEEC117) based on the ARINC 805 standard.

Note: There is an additional $175.00 fee participate in each examination

TACTICAL FIBER OPTIC CABLE ASSEMBLY COURSE

40-HOUR COURSE

Our 5-day Tactical Fiber Optics Course is designed for personnel who are responsible for maintaining tactical fiber optic cable reel assemblies. This course is similar to the program we developed for the U.S. Army's Patriot System Fiber Optic Repair course taught at USAOMEMS in Ft Bliss, TX, and is taught in strict adherence to MIL-STD-2042 ( ). All of our instructors have real world experience, having spent literally thousands of hours terminating, splicing and testing fiber optic cable systems.

COURSE OVERVIEW:

Students who successfully complete our training course will have the experience and confidence to terminate Single Terminus (ST), Multiple Terminus (MT) connectors, Biconic Connectors and 4-channel M83526 connectors. Students will also learn to properly inspect, test, troubleshoot and repair tactical fiber optic cable reel assemblies in accordance with MIL-STD-2042 ( ) using Optical Time Domain Reflectometers, Light Source and Power Meters and Visual Fault Locators. Students will also learn to repair damaged cable by removing the bad cable, fusion splice the cable together and protect it with a splice protection sleeve and splice enclosure.

WHO SHOULD ATTEND:

Anyone involved with the installation of fiber optic components, testing, and troubleshooting harsh environment tactical fiber optic cable assemblies.

RECOMMENDED PREREQUISITES:

None. At KITCO, we understand the need to provide you with recognized industry certified training. Successful completion of the 5-day course and test qualifies you to receive the certifications noted.

ETA CFOI CERTIFICATION (OPTIONAL):

Students are offered the option of taking the Electronics Technicians Association (ETA) Certified Fiber Optic Installer (CFOI) exam for an additional fee of $150.00. Upon successful completion, you will be certified as an ETA Certified Fiber Optics Installer.

CERTIFIED TECHNICIAN COURSE

———————————————— 40-HOUR COURSE

COURSE OVERVIEW:

Our mission is to provide our students with the hands-on knowledge and the ability to successfully terminate a variety of ST, SC, FC and Small Form Factor (SFF) connectors; perform fusion splicing, mechanical splicing, and assemble a splice enclosure. Students will perform cable preparation for fusion and mechanical splicing. Additionally, students will be trained to fully test and troubleshoot fiber optic cables and fiber optic systems using an Optical Time Domain Reflectometer (OTDR).

WHO SHOULD ATTEND:

Anyone involved in design, configuration, installation, testing, troubleshooting or fiber optic system maintenance: technicians, system analysts, design engineers, managers, telecommunication professionals, etc.

RECOMMENDED PREREQUISITES:

None. At KITCO, our instructors are 3M factory trained technicians and we understand the need to provide you with recognized industry certified training. Our 5-day Certified Technician Course will qualify you to receive the certifications noted.

ETA CERTIFICATION(S):

Electronics Technicians Association (ETA) exams are optional; they offer a great opportunity to become certified in a relatively short time. At the completion of day three, we can administer the ETA Certified Fiber Optic Installer exam for an additional fee of $150.00. Then, at the completion of day five, for an additional fee of $150.00, we can administer the ETA Certified Fiber Optic Technician exam.

ETA TESTING (CFOI): $150.00

ETA TESTING (CFOT): $150.00

IN ORDER TO BECOME CERTIFIED AS A FIBER OPTIC TECHNICIAN, YOU MUST PASS BOTH THE CFOI AND THE CFOT EXAM.

ETA RE-CERTIFICATION/ REFRESHER COURSE

16-HOUR COURSE

COURSE OVERVIEW:
The goal of our fiber training is to provide our students with the hands-on knowledge and ability to successfully complete the Electronics Technician Association (ETA) Certified Fiber Optic Installer (CFOI) examination. Students will be refreshed in Fiber Optic Theory, hands-on termination of ST and SC connectors and how to assemble a mechanical splice. Additionally, students will be familiarized with Small Form Factor (SFF) connectors and current Telecommunications Industry Association/Electronics Industry Alliance (TIA/EIA) standards. Students will also be refreshed in link loss testing using a Light Source and Power Meter.

WHO SHOULD ATTEND:
Anyone who was a Certified Fiber Optic Installer (CFOI) and is not currently working in Fiber Optics but wishes to become a current CFOI. Or anyone who is lacking the ETA required 24 classroom hours of additional Fiber Optic Training.

RECOMMENDED PREREQUISITES:
5-day Certified Technician Course or 5-day Certified Shipboard Course, or Shipboard 38999 Connector Course.

At KITCO, we understand the need to provide you with recognized industry certified training. Our 2-day ETA Re-Certification Course will qualify you for the certifications noted.

ETA (ELECTRONICS TECHNICIANS ASSOCIATION) CERTIFICATION:
For an additional fee of $150.00, we will administer the ETA Fiber Optic Installer (CFOI) examination. Upon successful completion, you will be certified as an ETA Certified Fiber Optics Installer. All Aviation Certifications are $175.00 each.

If taking the refresher for ETA Fiber Optic Technician, you only have to take the CFOT test to keep your certification up-to-date.

ETA CERTIFICATION

ETA (ELECTRONICS TECHNICIANS ASSOCIATION)

Since 1978, the Electronics Technicians Association, International (ETA) has certified thousands of electronics technicians worldwide who excel in areas of electronics installation, service and support. An electronics technician who successfully passes an ETA certification program is professionally recognized as having the ability to uphold the necessary de facto electronics industry standards.

The ETA is an independent electronics certification and testing organization dedicated to serving the needs and interests of electronics technicians worldwide.

ETA FIBER OPTIC INSTALLER CERTIFICATION

ETA's Fiber Optics Installer Certification (FOI) Program represents the fiber industry's most advanced and comprehensive method of certifying technicians in the world's fastest growing field: Fiber Optics Installation.

ETA certified technicians are professionally recognized as having the necessary knowledge and technical skills to meet international de facto electronics industry standards. Wearing CFOI after your name implies that you are a skilled artisan. Businesses displaying CFOI certificates provide customer assurance. CFOIs get hired first by thousands of employers.

ETA CERTIFIED FIBER OPTIC TECHNICIAN CERTIFICATION

An electronics technician who successfully passes an ETA certification exam is recognized as having the necessary knowledge and technical skills to meet international standards. ETA Certified Technicians are on the fast track when it comes to employment and professional advancement. They are recognized worldwide.

ETA AVIATION CERTIFICATIONS

All ETA Aviation Certifications meet the requirements of SAE and ARINC standards for military and commercial applications.

ETA RECERTIFICATION

Having met the requirements of the ETA Fiber Optics Installation Certification, it must be renewed every four years. ETA certification is awarded to individuals, not organizations or institutions. Your certification is personal and is a professional accomplishment. If you leave any organization or institution, you retain your certification along with all its benefits.

EXAM FEES

Both the Fiber Optics Installer Certification and the Technician Certification are valid for 4 years and cost $150.00 each. All Aviation Certifications are $175.00 each.

TO LEARN MORE ABOUT THE ETA
http//:www.eta-i.org

CUSTOMIZE YOUR COURSE

TRAINING REQUIREMENTS

We will customize any of our training courses and tailor them to meet your training requirements. Call us to discuss your training requirements and to request a quote. Whether you require Blown Optical Fiber Training, termination instruction for LC or 3M Hot Melt connectors or training procedures for ribbon fiber or fan-out kits, we can accommodate your needs and customize your training.

ON-SITE TRAINING

With our established mobile training services, we have the ability to train at your location, **anywhere in the world!** Any of our fiber optic termination training courses can be taught at your facility to meet your requirements and schedule. We provide a full line of tool kits and test equipment for training, but if you require training on your equipment our instructors can train your technicians using your tools, kits and test equipment. We can tailor any of our training courses to meet your schedule and operational requirements, from 1 day to 1 week, 2 weeks, or longer. By sending our instructors to your location, you can eliminate travel expenses incurred by sending your employees to our facility for training. We can also train your technicians after your normal business hours. We are flexible to meet your training needs!

PRICE: QUOTES BY REQUEST

"We're ready to roll at a moment's notice."