

FIBER OPTIC TRAINING

CLASS FORMAT:

Lab + classroom

The participant is able to “learn-by-doing” in the course; this knowledge can be transferred to the workplace.

CLASS SIZE:

NTT recommends a class of 12 participants to obtain the best results.

NTT TO PROVIDE:

- 3-days (24 contact hours) of on-site instruction
- Textbook, “Basic Fiber Optics”
- Classroom consumables
- Completion certificates
- Shipping and travel logistics

CLIENT TO PROVIDE:

- Classroom, with easy access, of 750 square feet or greater
- Projection screen, white board and/or flip chart(s)
- A dock facility or a forklift to unload the training equipment
- A pallet jack to move the crates around after they have been unloaded may also be needed
- The equipment should be placed in the training room for the NTT instructor to test and set up prior to course starting

SHIPPING:

- 1 Crate at 650 lbs (one crate at 51” x 42” x 52”, one set of equipment) or 4 cases at 420 lbs (four cases at 38” x 22” x 21”).



Maintain your fiber optic network and learn the skills to minimize network downtime. Learn the ins-and-outs of design considerations and specification requirements. Work on budget/loss analysis techniques for fiber optic circuits. Learn safety requirements and proper techniques for terminating and splicing fiber.

Students can request to take the CFOT® (Certified Fiber Optic Technician) exam, after the completion of the course. This certification is nationally recognized from the Fiber Optic Association.

COURSE AGENDA

FIBER OPTIC BASICS

- Introduction to fiber optics
- The components of fiber optic systems
- Optical transmitters: LEDs and lasers
- Safety rules and procedures for working with fiber optics
- Singlemode and multimode fiber optic systems
- Windows of optical transmission
- Bandwidth: optical
- Modal and chromatic dispersion
- Spectral width
- Attenuation and return loss

FIBER OPTIC CABLES

- Fiber optic cable construction: core/cladding/buffer/jacket
- Buffer types: loose tube and tight buffer
- Outer jacket and strength, member types and applications
- Understanding fiber cable specification sheets
- Types of fiber optic cables and applications
- Tensile strength, bend radius
- Micro and macro bends
- ANSI/EIA/TIA and NEC® standards
- Fiber cable specifications: OFNP, OFNR, OFCP, OFCR
- Fiber optic cable handling techniques

FIBER OPTIC CONNECTORS, SPLICES, & TERMINATIONS

- Connector types: SC, ST, FSD, SMA, Biconic
- Connector terminating techniques: epoxy, UV, Hotmelt™, and crimp
- Connector testing and inspection
- Splice cases, innerduct, patch panels and other hardware
- Mechanical and fusion splicing techniques

FIBER OPTIC TRAINING

COURSE AGENDA

FIBER OPTIC NETWORKS

- General topic discussion

FIBER OPTIC NETWORK DESIGN CONSIDERATIONS

- Fiber optic applications (current and future)
- Future proofing your design
- Determining cable, hardware and equipment requirements
- Design, installation, and implementation considerations
- Budget/loss analysis to insure correct network operation

FIBER OPTIC INSTALLATION REQUIREMENTS

- Installing, planning and restorial requirements
- Direct buried, OSP conduit, aerial and inside plant
- Tools and techniques
- General rules and items of concern for fiber installation
- Pathway selection, installation and inspections
- Code considerations
- Firestopping fiber optic cables

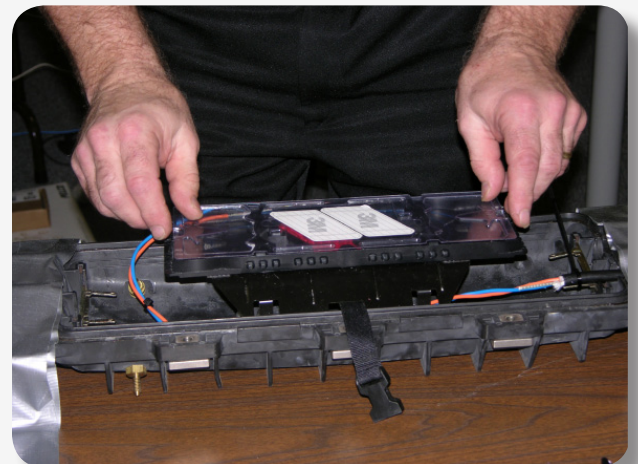


FIBER OPTIC TEST EQUIPMENT

- OTDR optical time-domain reflectometer, power meter and light source, continuity checker and fiber optic tracer
- OTDR testing and documentation the correct way
- Using power meters to test cable (dB) and equipment (dBm)
- Test procedures: FOTP-95, FOTP-171, OFSTP-14, FOTP-107
- Fiber optic inspection with microscopes
- Troubleshooting fiber optic networks the easy way

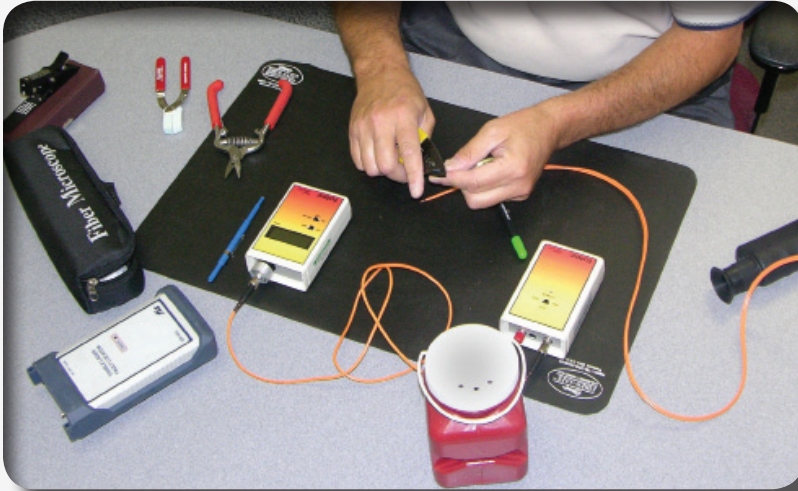
HANDS-ON LABS

- Learn fiber optic safety procedures and practices
- Inspect multimode fiber optic connectors for quality
- Build and inspect Hotmelt™ multimode ST connectors
- Build and inspect epoxy multimode
- ST Connectors
- Build and inspect epoxy multimode SC connectors.
- Use a power meter and light source to evaluate fiber circuits
- Build and test a mechanical splice
- Practice OTDR operations and testing



Preparation of the fibers is very important. After the splice tray and closure have been prepared, all buffers and fibers need to be identified.

FIBER OPTIC TRAINING



After polishing the connector, it is necessary to inspect the face of the fiber to insure that there are no scratches, fractures, chips, etc

