Fiber Optic Fundamentals and Test Applications

Course Number	Delivery Method	Course Length	Language of Instruction
TT-FIBER	Instructor-Led at Customer Site	1 Day	English
TT-FIBER-VC	Instructor-led via Virtual Classroom	3 two-hour Sessions	English

Synopsis
This course is designed to give a detailed overview of fiber optic technology. After an understanding of the technology is established, participants learn to test a fiber optic system.

Prerequisites
Introduction to Telecommunications (TT-TELCOM) or equivalent.

Who Should Attend
Technicians, engineers, and technical support personnel who are directly or indirectly responsible for installing and troubleshooting fiber optic systems.

Course Goals
Upon completion of this course, participants will be able to:

- Describe how light travels through fiber optic cables
- Detail the various types of fiber optic cables and connectors
- Identify the causes of loss in a fiber optic system
- Detail common fiber optic tests

Course Outline

Introduction (VC Session 1)
- Orientation and Course Goals
- Fiber Optic Uses
- Optical Systems
- Fiber Optic Advantages
- Fiber Handling/Safety

Fiber Optic Basics
- Principles of Light
- Fiber Construction
- Fiber Types
- Fiber Connections and Splices
- Fiber Losses
- Light Sources
- Optical Detectors Types
- Fiber Cables Types & Design

Fiber Handling (VC Session 2)
- Safety
- Care & Cleaning

Fiber Cleaning Resources
- The importance of cleaning
- Manual fiber cleaners
- Compressed dry air
- Lint-free wipes
- Ferrule swabs
- Isopropyl alcohol
- Anti-static work surfaces
- Inspection microscopes
- Digital inspection probes

Fiber Care
- Technical Specifications
- Proper fiber handling, cleaning, & inspection techniques
- Analyzing endfaces
- Labs (On-Site Only)

To order and schedule training, call toll free 1-866-228-3762
Or visit www.jdsu.com/training.

Virtual Classroom session breakouts are approximate.

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Fiber Testing Resources (VC Session 3)

- The need for basic testing
- Visual fault locator (VFL)
- Optical time domain reflectometer (OTDR)
- Optical power meter (OPS)
- Optical light source (OLS)
- Optical continuous wave reflectometer
- Fiber cleaning kit
- Associated connectors and adaptors

Performing Basic Fiber Tests

- VFL
- OTDR
- Optical insertion loss
- Optical return loss
- Optical receiver sensitivity

Fiber Measurements

- Length of fiber
- Locating fusion splices, mechanical splicing and optical cross-connects
- Locate Splice Gains
- Bidirectional testing
- Locate Fiber Anomalies-Fiber breaks, End of Fiber, Micro/Macro Bends
- Measure Insertion Loss Caused By Patch Panels & Fusion Splices

Troubleshooting Fiber Faults

- Basic troubleshooting steps
- The importance of cleaning
- Identifying fibers with the VFL
- Analyze fiber link with the OTDR

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