Fiber Optic Communication Installation and Testing Training Course

15 – 19 February 2027
Addis Ababa

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Ref: 833_224049 **Date:** 15 – 19 February 2027 **Location:** Addis Ababa **Fees:** 4500 Euro

Overview

Fiber Optic Communication Installation and Testing Training Course is a one-week course for telecommunications, network, infrastructure, field service, installation, and maintenance functions, who leave with a Fiber Optic Link Installation and Test Pack. Participants connect fiber selection, cable handling, splicing, termination, loss budgets, inspection, power-meter tests, OTDR traces, and acceptance records. The course turns separate field tasks into a controlled link lifecycle. Agile Leaders Training Center develops practical fiber optic communication capability.

Who Should Attend

- Telecommunications functions responsible for optical links and service performance
- Network infrastructure functions responsible for cable routes, equipment, and acceptance
- Installation functions responsible for cable handling, termination, and splicing
- Field service functions responsible for inspection, testing, and fault localization
- Maintenance functions responsible for records, repairs, and restoration planning

The course assumes participants can follow technical diagrams and field procedures, and leaves out certification preparation and advanced photonic device design.

Departments and Industries

The course supports departments and industries that install, test, operate, and maintain optical communication links.

- Telecommunications, network engineering, IT infrastructure, and technical support
- Installation, commissioning, field service, maintenance, and quality control
- Data centers, technology services, utilities, and transport infrastructure
- Manufacturing, energy, construction, facilities, and industrial operations
- Healthcare, education, financial services, and public-service organizations

Learning Objectives

By the end of this course, participants will be able to:

- Apply fiber, cable, connector, and link-selection criteria
- Build route, handling, splicing, and termination plans
- Use optical loss budgets and power-meter tests
- Analyze OTDR traces and localize link faults
- Evaluate inspection, cleaning, safety, and acceptance controls
- Build test records and maintenance action plans

Course Agenda

Day 1: Define Fiber Optic Links

- Light Transmission and Link Component Map
- Single-Mode and Multimode Fiber Selection Matrix
- Cable Construction and Environment Checklist
- Connector, Adapter, and Splice Inventory
- Fiber Optic Link Schematic

Day 2: Plan Installation and Termination

- Cable Route and Pulling Plan
- Bend, Tension, and Handling Control Sheet
- Fiber Preparation and Safety Checklist
- Fusion Splicing Procedure Card
- Connector Termination and Closure Record

Day 3: Calculate and Measure Link Loss

- Fiber, Connector, and Splice Loss Budget
- Reference Method and Test-Cord Setup
- Optical Light Source and Power Meter Test
- Insertion-Loss Result Comparison Sheet
- Measurement Uncertainty and Retest Log

Day 4: Test and Troubleshoot Installed Links

- Connector Inspection and Cleaning Sequence
- Visual Fault Locator Continuity Check
- OTDR Range, Pulse, and Index Setup
- OTDR Event and Trace Analysis Map
- Fault Localization and Repair Decision Tree

Day 5: Practice Fiber Link Acceptance

- Exercise: Select Link Components and Installation Controls
- Exercise: Prepare, Splice, and Terminate Fibers
- Exercise: Calculate Loss and Compare Test Results
- Exercise: Analyze OTDR Traces and Locate Faults
- Capstone: Fiber Optic Link Installation and Test Pack

Practical Exercises

The course uses suggested activities based on communication links in data centers, buildings, campuses, utilities, transport, and industrial facilities.

- Suggested activity: select fiber, cable, connectors, closures, and handling controls for an installation route and service need.
- Suggested activity: prepare fibers, record a splice and termination sequence, inspect connector condition, and document safety controls.
- Suggested activity: calculate a loss budget, configure a reference test, compare insertion loss, and record uncertainty and retest decisions.
- Suggested activity: configure an OTDR test, identify trace events, localize a fault, and assemble acceptance and maintenance records.

FAQs

Who suits fiber optic installation and testing training, and what does it assume?

Telecommunications, network, infrastructure, installation, field service, and maintenance functions suit the course; it assumes participants can follow technical diagrams and procedures without requiring advanced photonics experience.

How does fiber optic installation and testing differ from fiber optic network design training?

Fiber optic installation and testing focuses on field handling, splicing, termination, measurement, fault localization, acceptance, and maintenance; network design training focuses more broadly on topology, capacity, architecture, and equipment planning.

How is a fiber optic link loss budget used?

A fiber optic link loss budget estimates fiber, connector, splice, and passive-component losses so measured insertion loss can be compared with an agreed acceptance limit.

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What does an OTDR show during fiber optic testing?

An OTDR trace shows distance-related events such as connections, splices, reflective points, loss changes, and link ends, supporting fault location and installation review when its settings and limits are suitable.

Why are fiber optic connectors inspected and cleaned before testing?

Fiber optic connectors are inspected and cleaned because contamination or damage can increase loss, create reflection, distort results, and transfer debris to another mating surface.

Conclusion

Participants take back a Fiber Optic Link Installation and Test Pack containing selection records, route plans, handling controls, splice and termination records, loss budgets, power-meter results, OTDR analyses, acceptance files, and maintenance actions. It changes isolated field activities into a traceable link lifecycle. The pack supports controlled installation, reliable measurement, fault decisions, and retained evidence.