Certified Courses

Professional Certificate

Fiber Optic - Communication Training

INTRODUCTION

- Fiber Optic is one of the communication media that is broadly used in industrial places. Fiber Optics are immune to external stray magnetic fields or cross talk. This course provides knowledge and skills which will enable evaluation of system upgrades with improved data transfer to overcome present day problems. This Fiber Optic – Communication training course provides an understanding of the theory of optics and its application in the transmission of data along fiber optic cabling.

This training course will cover the following:

- How to understand the difference and application of both SM and MM cables
- How to troubleshoot fiber optic systems
- How to splice fiber cables
- How to use OTDR to maintain the fiber optic system

PROGRAMME OBJECTIVES

Upon the successful completing the Fiber Optic course, participants will be able to:

- Define the optics Fundamentals
- Use of fiber optic cabling for communications
- Test fiber optic cables
- Know the skills required in fiber Splicing
- Be able to use Connectors/ Pig Tails
- Source and meter testing
- Use VFL for fault troubleshooting
- Use OTDR for testing fiber systems
- Use fiber optics in laser applications

WHO SHOULD ATTEND?

- This course is especially useful for engineers & Technicians involved in optical telecommunications as well as those designing and testing fiber optics replacement systems

TRAINING METHODOLOGY

- This Fiber Optic – Communication training course combines many effective adult learning methods like: Presentation, illustrative video clips, practical workshop for fiber cable splicing, fusion, OTDR simulation, use of excel calculators and templates and computer aided tools to design fiber systems and compute the related terms in fiber optic systems.

PROGRAMME SUMMARY

- This Fiber Optic – Communication Training course is both knowledgeable and practical one. Delegates will gain the essential knowledge and skills to design, inspect and troubleshooting fiber systems. The course includes how to use Visual Laser and OTDR, fiber meters, Laser sources to detect any problems in the fiber system. Furthermore, the course demonstrates how to, install pigtails and splice the cables in case of problems using either mechanical and matching gel methods or using fusion. The course spans five days, each day includes a number of activities specially designed to make sure the required skills and knowledge has been achieved.

PROGRAM OUTLINE

Introduction to Fiber Communication

- Fiber vs Copper
- Optical Fiber Types
- Internal refraction
- Cladding
- Fiber materials and properties
- Fiber Optics Properties
- Light guiding
- Waveguides
- Modes
- Dispersion
- Types of optical fibers
- dBm and Db

Fiber System Components

- Transmitters, Receivers and Repeaters
- Types of transmitters
- Basics of receivers and detectors
- Amplification and regeneration to overcome attenuation

Fiber Optic Splicing

- Types of fiber splices
- Mechanical splices
- Electrical fusion splices
- Connector structure
- Types of connectors
- Installation of connectors
- Pig tails
- Fiber Optic Patch Panels

Fiber Systems Design

- Bit rate and Power loss
- System design
- Budget computation
- Fiber Transmission Systems
- Types of transmission systems
- Multiplexing
- Transmission formats

Fiber Testing and Inspection

- Fiber inspection
- Microscopic inspection
- VFL
- Fiber Optic testing
- Fundamental concepts of optical measurement
- Standard fiber optic equipment tests
- Standard fiber optic cable tests
- Continuity testing
- loss test
- OTDR
- Fiber Famous LANs and MANs

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