# Fiber Optics

**Course Objectives:**

- Understand the physical attributes of light as a carrier of data

- Understand how fiber cable act as a medium for carrying light effectively

- The main differences between fiber optic and copper cabling

- The main Components of a Fiber Cable

- Fiber cable types, connectors and enclosures

- Splicing and testing Fiber Cable

- Fiber To The Home(FTTH)

**Course Contents:**

- Fiber Optics Basics Workshop

- Outside Plant Installation

- Termination (Connectors) and Splicing

- Optical LANs (OLANs) and Data Center Cabling

- Fiber Optics Networking Standards

- Fiber Optics Cable and Connector Identification.

- Outside Plant Cable Introduction.

- Termination of Fiber Connectors, Introduction to Splicing

- (Mechanical & Fusion).  Introduction to fiber optics network troubleshooting.

**Course Learning Outcomes:**

- Outside Plant Fiber Cable preparation

- Introduction to Basic OTDR Functions and Traces

- Use of the OTDR, VFL, Power Source and light Meter Functions

- Continuity Testing, Troubleshooting, Managing Tools and Equipment

- Layout, install or maintain fiber optic cabling systems

- Demonstrate a practical knowledge of fiber optic theory, codes, standards and installation practices

- Demonstrate a practical knowledge of individual hands-on skills including:

  - Performing industry standard fiber optic terminations

  - Preparing cables for inside and outside applications

  - Performing fusion splicing and splice tray preparation

  - Testing with the OTDR and optical loss test equipment

- Learn color coding of fiber cables and connectors

- Practice on optical fiber cable splicing and termination

- Practice on cable management in different types of fiber cable closures and patch panels

- Perform a comprehensive testing and prepare a professional testing report

- Build an FTTH Network

- Build a complete outside plant network

- Perform OLTS and polarity test on Data center (MPO inspection).