

FOA - Certified Fibre Optic Technician – 3 days

COURSE DESCRIPTION:

The Certified Fibre Optic Technician (CFOT) course is a balanced mix of hands on instruction and theory to provide the knowledge required for today's fibre optic applications. The certification is internationally recognized and is intended to provide a baseline knowledge for anyone working within, or with aspirations to work in the fibre optic industry.

To gain the Certified Fibre Optic Technician qualification, you are required to complete three course modules, be competent in hands on exercises and pass the final exam.

Module 1: An Introduction To Fibre Optics (Day 1)

The Basics

- The basics of Data, Binary, Bits & Bytes, ACCII, Speed, Latency, What is Fibre, Components, Standards

Fibre Optic Standards Bodies

How Optical Materials Work

- Properties of Light, Guiding Light in a Physical Material, Refraction Index, Snell's Law, Total Internal Reflection

Principles and Technology of Fibre Optic Manufacturing

- How the manufacturing process impacts of specification of fibre optics, Impurities, Reflection, Scattering and Loss

Physical Specifications

- Geometry, Attenuation, Bandwidth

Optical Fibre Specifications

- Singlemode, Multimode, ITU and EIA Variants. The Development of the OM1/2/3/4/5 and OS1/2 Specifications

Optical Handling & Safety Considerations

- Working with Lasers, Identification of Laser Hazards

How Fibre Optic Links Work

- Electrical to Optical Conversion, Types of LEDs & Lasers, Receivers, Transmit and Receive Margins, Power Budgets

Fibre Optic Links

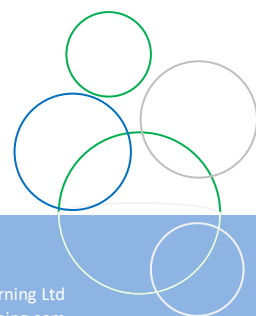
- Point-to-Point, Point-to-Multipoint, Media Converters, Wavelength Use, Transmission Specifications

Types of Fibre Optic Cable (FOC)

- Internal, Outdoor, Indoor/Outdoor, Breakout, D-Series, Patch-cords and Pigtails

Functions and specifications of Fibre Distribution Hubs/Cabinets (FDH)

- Cross connection, PON, traditional and air blown.



Fibre Optic Installation

- Internal, D-series, Breakout Cables, Cable Trays, FTTX Premise Cabling
- OSP Aerial, ADSS, Figure 8, Slotted Core, Centenary Wires and Lashing, Air Blown Fibre (ABF)
- OSP Underground, Direct Buried, Dielectric and Armoured Cables, Types of Ducting Systems, Air Blown Fibre (ABF)

Product selections

- Outside Plant Standards

Functions and Specifications of Optical Fibre Distribution Frames (OFDF)

- Cross-connect, Fusion Spliced, Single Circuit Management

Connectors in the Outside Plant (OSP) Environment

- Specifications, Reflection, Loss, Cleaning, Troubleshooting

Methods of Installation

- Underground only, Single Ended, Mid-point, Ducting, Pulling and Blowing

Manholes and Joint Closures

- Coiling, Management, Splice trays, Types of Closures, Direct Buried, Butt, In-line, Single Circuit Management, Single Element Management

FTTX Networks

- Ethernet Final Mile (EFM) Networks, Passive Optical Networks (PON), WDM-PON Developments

PON, G-PON & O-LAN

- TDM, WDM, Splitters, Amplifiers & ROADM

Module 2: Fibre Optic Cable Jointing and Termination Methods (Day 2)

Fibre Optic Tools

- Jacket preparation, cutting, cleaving and marking/ identification

Practical

- Cable & Enclosure preparation

Fibre Optic Terminations and Splicing

- Types of Connectors, Factory-made Connectors, Field Installable Connectors, End-face Conditions and Cleaning

Terminating Connectors

- Using Field Installable Connectors, Splice-on Connectors

Splicing Procedures

- Fusion and Mechanical Splicing, Environmental Considerations, Cable Preparations, Cleaving, Types of Splice Trays

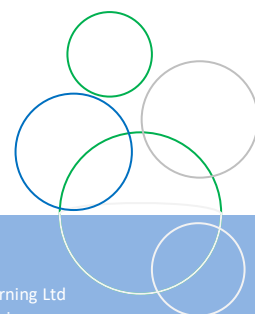
Module 3: Fibre Optic Test and Measurement (Day 3)

Units of Measurements in Fibre Optic Networks

- Relative and Absolute Measurements, dB and dBm

Understanding Transmission Electronics and Power Budgets

- Link Loss Calculations, Determining Reach, Using Attenuators



Installation Testing and Documentation

- Using Light Sources And Power Meters, Measuring Gain and Loss, Providing Commissioning and As-built Documentation

Understanding the Importance of Wavelengths

- Determining the correct wavelength to use for testing, Multimode and Single-mode testing

Determining Link Capability

- Continuity, Attenuation, Length, and Splice Losses

Basic Fibre Optic Test Equipment

- Video Scopes, Light Sources & Power Meters, Live Fibre Identifiers, Visual Fault Locators

Troubleshooting of Connectors

- Visual Inspection of Connectors, Contamination, Proactive Cleaning Regimes

Troubleshooting of Fibre Optic Links

- Using Light Source & Power Meter, Benchmarking, Using Multiple Wavelengths

Design and Function of the OTDR

- Time Domain Reflectometry, Properties of Light, Reflection Absorption and Loss, Uses of the OTDR

Troubleshooting Fibre Optic Links

- Recognising the Dead Zone, Connectors and Splices, Power Loss and Power Gain Events
- Using Test Leads and Launch Cables, Dynamic Range, Resolution and Ghosts

Practical

- Fibre Testing

CFOT Exam completed at the end of Module 3

To find out more about this course, contact CommsLearning on enquiries.ap@commslearning.com or telephone 0800 4 COMMS (4 26667)

Delivered in association with ATG Technology Group

