

Fibre Optic Sciences Course

The course includes lunch and all study materials. The two-day Fibre Optic Sciences Course covers both practical and theoretical aspects. Course attendees will gain familiarization with terminating optical components and how to certify a fibre optic network. Participants are required to complete a test at the end of the course.

The course is BICSI registered and any participant can use the points gained to retain their BICSI recognition.

Day One

- 9.00am **Registration**
- 9.30am **Start**
- **Standards**
- U.K. and European fibre related standards
- **Introduction to fibre optics and areas where optical fibre networks are used**
- Origin of optical fibre technology
- Advantages of fibre optics over copper
- Fibre optic networks CATV, LAN, WAN and optical topologies
- **10.30am Coffee Break (15 mins)**
- **Fibre optic cable construction and core alignment**
- 62.5/125 μm , 50/125 μm , 9/125 μm
- Loose tube, tight buffered and armoured shielded cable
- Characteristics of singlemode and multimode
- **Patch panels, pigtails and connectors**
- Tilt and slide patch panels, fibre wall breakout boxes, fibre connector type and pigtails
- **Preterminated fibre solutions**
- RapidNet, MPO and MTP
- **Health and Safety**
- Safety with chemicals, lasers, fibre cable and cable drums
- **Cable Installation**
- Working bend radius & tensile loads for cable installation
- Pulling practices for installing fibre cables
- **How do I terminate fibre cable? (Theory session)**
- Cable preparation and securing fibre cables in a variety of fibre patch panels and boxes
- Correct polishing methods for cold and hot cure glues
- Cleaning methods for fibre optic connectors
- **12.30pm Lunch (30 mins)**
- Hot and cold cure termination practices, LC, STII, SC connectors (**Practical session**)
Including coffee break (15mins)
- **Operating Distances**
- Categories, bandwidth, distances, data rates and transmitter types
- **Testing theory for optical cabling, including Loss Budget calculations, OTDR and P&LSM**
- Trace events including attenuation, dead zones, ghosts, noise, gains & loss, scattering, reflections, absorption and types of fibre optic faults
- Fibre identification and how to check fibre polarity
- **5.00pm Finish**

Day Two

- 9.00am **Start**
- **Multimode testing including OTDR, P&LSM (Practical session)**
- Certify and document performance reports, reference setting on a P&LSM
- **10.30am Coffee Break (15 mins)**
- **Fusion Splicing (Theory and Practical)**
- Cable preparation for splicing cables and pigtails
- Fusion splicing featuring troubleshooting tips and time saving techniques
- Fusion splicer maintenance and cleaning
- **12.30pm Lunch (30 mins)**
- **Singlemode testing including OTDR, P&LSM (Practical session)**
- Singlemode recommended and maximum loss budgets
- **Coffee break (15mins)**
- **Problem Solving and Trouble Shooting with a OTDR**
- Conclusion of Theory
- **Test**
- **5.00pm Finish** with Optional Tour of HellermannTyton Building

