



**Fibreplus Ltd**  
**Network Specialists**

Fibreplus Ltd. provide universally recognised qualifications, which are City & Guilds Based and industry recognised. Also further bespoke courses pertaining to fibre/copper also active & passive equipment training and gain certification directly from Fibreplus Ltd..

Some ask the question what previous experience do I require? In short none, People come from all walks of life; some to add to their existing experience other from other trades i.e. plumbers, forklift operators lorry drivers and cleaning, but just seeking a change in career.

With the wide range of courses delivered at Fibreplus Ltd. training centre in Wiltshire, it's the ideal way to get started or further your skills in voice / data communications. It will provide you with the knowledge and Understanding, usually obtained by experience, which will assist you in design, installation and testing systems.

Why choose Fibreplus Ltd. for your training requirements? Probably because the equipment you are most likely to encounter in the field is provided as part of our training. This means your training is delivered utilising cutting edge technology from leading vendors within the industry

So what are the benefits of choosing Fibreplus Ltd.

- 60% Practical Training
- 100% pass rate achieved to date.
- Maximum class size (12)
- Largest ratio of equipment per student.
- Use of cutting edge equipment within the fibre industry
- Industry recognised training
- Air conditioned classroom

**City & Guilds 3666 Courses covering Fibre Optic and Copper**

Basic Understanding of Telecommunications	Theory	1 Day
Fibre Optics installation and testing within and external environment	Theory & Practical	5 Day
Fibre Optics installation and testing within and external environment	Theory & Practical	5 Day
Copper installation and testing Cat5—Cat7 Telecoms digital/analogue	Theory & Practical	5 Day

**Fibre Optic Test & Measurement**

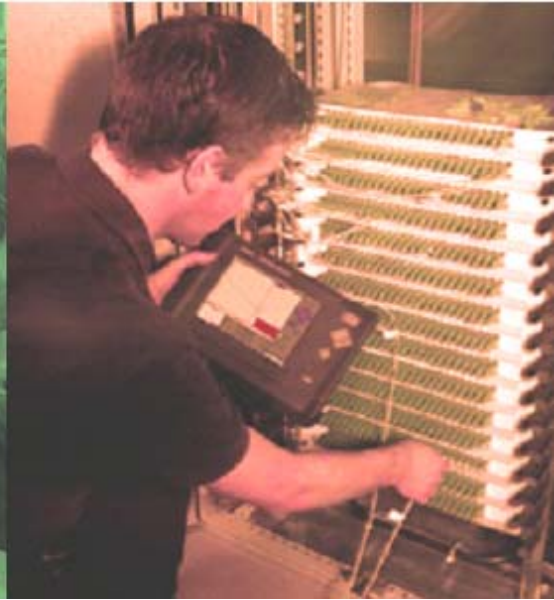
Optical Test Equipment Overview	Theory	1 Day
Test & Measurement (OTDR, VLS & ILM)	Theory & Practical	3 Day
Advanced Test & Measurement (to include PMD & CD)	Theory & Practical	5 Day

**Design, Standards & Costing**

Standards European & International	Theory	1 Day
Visio & CAD Schematics & Design	Theory & Practical	2 Day
System Design & Job Costing	Theory & Practical	3 or 5 Day

**Bespoke**

OPTO Electrical	Theory & Practical	1 or 2 Day
High Tensile Splicing	Theory & Practical	1 Day



## Fibre Optics (Single / Multi Mode)

**Description:** An intensive "Fast Track" course designed to incorporate both Single / Multi-Mode test and installation of fibre optic cabling for applications including video, CCTV and datacoms. This course is ideal for executives looking for an accelerated course to obtain a better understanding of Single / Multi-Mode installation practice.

**Venue:** Fibreplus Ltd. Training Centre, Westbury, Wiltshire

**Duration:** Five Days

**Dates:** This course is offered continuously throughout the year. Please refer to the online calendar

**Price:** Please refer to current price list. **FIBREPLUS PRICE GUARANTEE.** We guarantee that you will not be able to find this course at a lower fee anywhere else in the UK on a like for like basis.

### Course Content

#### Introduction

- Telecommunications
- Pros and cons of fibre optics
- Measurement units
- Components

#### Optical Fibres

- How fibre works
- Multi mode and Single mode
- Parameters of operation
- Bandwidth, Frequency & Wavelength
- Refractive Index

#### Safety

- BS.7671 recommendations
- Safe working practices
- Laser radiation and safety

#### Fibre Types

- Multi & Single mode explained
- G652 to G657 also OM1, OM2, OM3 & OS1

#### Cable Types

- Cable types, use and construction
- OPGW, ADDS, Loose Tube, & Tight Buffered

#### Cable Installation and Preparation

- Cable handling issues
- Techniques and tools

#### Jointing of Fibre Optics

- Splice through and mid span
- Patch Panel components

#### Connectors

- Connectors basics and types
- Polishes i.e. Super, Flat, Angled and Super Angled
- Use of microscope and identifying issues
- Practical Workshop

#### Optical Splitters & Couplers

- WDM, DWDM & CWDM

#### Splicing

- Fusion splicing / Mechanical splicing
- Splicing - new developments
- Splicing pigtails v's direct connectorisation
- Cleaving
- Trouble shooting
- Splicing parameters
- Routine maintenance
- Arc Calibration

#### Installation & Planning Considerations

- Procedures to European & International Standards
- ISO 11801
- BS EN 50174
- BS EN 60825

#### Test Equipment and Correct Procedures

- Using the VLS
- Setting up ILM Kit and referencing
- Light Source & Power Meter (ILM) Testing
- Workshop with Practical ILM Kit Use
- Understanding all Test equipment
- Understanding OTDR features and principles
- Event types i.e. Reflective and Non-Reflective
- Macro & Micro Bending explained
- Correct Fault Locating Principles
- Test Leads, Launch & Tail Leads
- OTDR Trace Analysis & Bi-Directional trace interpretation
- OTDR capability and limitation explained
- Workshop with Practical OTDR Use

#### Assessment

- Practical and Written assessments
- Simulated installation exercise



### Test and Measurement Course OTDR & ILM 3 Day

- Description:** Designed to provide you with the knowledge and skills necessary for professional test and measurement in the field. You will work on our training simulators where we have introduced all possible faults you may encounter in the field, giving you the experience and knowledge not provided by PowerPoint or theory alone.
- Venue:** Fibreplus Training Centre, Westbury, Wiltshire
- Prerequisite:** This course requires a good knowledge of fibre optic, please refer to our City & Guilds 3666 Qualification or Fibreplus Ltd. Accredited 5 day course to achieve the knowledge required to get the most from this course.
- Duration:** Three Days
- Dates:** This course is offered continuously throughout the year. Please refer to the [online](#) calendar for the start date of the next convenient course.
- Price:** Please refer to current price list. **FIBREPLUS PRICE GUARANTEE.** We guarantee that you will not be able to find this course at a lower fee anywhere else in the UK. We will match any lower fee.

#### Basic Understanding of the terms:

- Wavelength, Frequency, dB Loss, dBm Power
- Fibres i.e. OM1, OM2 OM3 & OS1 G652 to G657
- Bandwidth Limitations, Dispersion, Attenuation
- Absorption and scattering, Electromagnetic Spectrum
- Optical Bands O, E, S, C, L & U

#### System Testing Procedures

##### Stage 1

**Acceptance Testing** of the Optical fibre Drum  
Internal & External Checks, Length & Attenuation Co efficiency  
**Testing Laid Cable**

- Testing of the fibre section
- Termination options for testing
- Loss testing  
Attenuation Co efficiency

##### Stage 2

Final Testing of complete system

- Termination options for testing
- Loss testing  
Micro Bending  
Macro Bending  
Attenuation
- Over sheath resistance testing
- Earthing & Bonding
- Checking Labels Identification i.e. Laser / Cable / Fibre
- Documentation & Schematics

#### Equipment

- Launch & Tail Leads
- Single mode
- Multi-mode 50 & 62.5 fibre issues

#### BFA & Mechanical Splices

- Use of Bare Fibre Adapters for testing
- Correct uses of Mechanical Splices

#### Mandrels and their use

#### Microscope

- Use & Importance

#### Understanding Connectors & Adapters

Type i.e. SC, FC/PC, MPx, LC & ST etc.  
Polish i.e. Flat, Angled, Super & Super Angled  
Faults:- Assessing performance of Connector and Adapters

#### Loss Test Set

- Understanding correct uses
- Active Equipment Testing
- Results and Documentation

#### Visible Light Source (VFL)

- Limitations & Uses

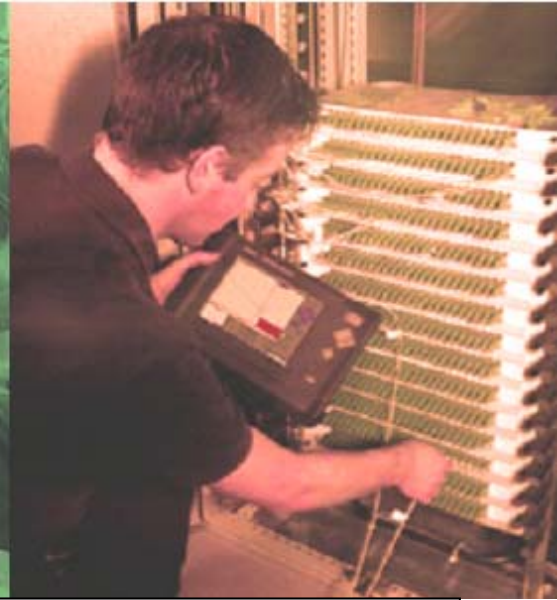
#### Fibre Identifier

#### OTDR (Optical Time Domain Reflectometer)

- Understanding correct use
- Reflective & Non-Reflective Events
- Interpreting Results
- Fault Locating
- Launch & Tail Leads
- Results and Documentation

#### Schematics & Test Documentation

#### Maintenance & Trouble shooting



### Advanced Test and Measurement Course OTDR & ILM 5 Day

<b>Description:</b>	Designed to provide you with the knowledge and skills necessary for professional test and measurement in the field. You will work on our training simulators where we have introduced all possible faults you may encounter in the field, giving you the experience and knowledge not provided by PowerPoint or theory alone.
<b>Venue:</b>	Fibreplus Training Centre, Wiltshire
<b>Prerequisite:</b>	This course requires a good knowledge of fibre optic, please refer to our City & Guilds 3666 Qualification or Fibreplus Accredited 5 day course to achieve the knowledge required to get the most from this course.
<b>Duration:</b>	Five Days
<b>Dates:</b>	This course is offered continuously throughout the year. Please refer to the <a href="#">online</a> calendar enclosed for the start date of the next convenient course.
<b>Price:</b>	Please refer to current price list. <b>FIBREPLUS PRICE GUARANTEE.</b> We guarantee that you will not be able to find this course at a lower fee anywhere else in the UK. We will match any lower fee.

#### Basic Understanding of the terms:

- Wavelength, Frequency, dB Loss, dBm Power
- Fibres i.e. OM1, OM2 OM3 & OS1 G652 to G657
- Bandwidth Limitations, Dispersion, Attenuation
- Absorption and scattering, Electromagnetic Spectrum
- Optical Bands O, E, S, C, L & U

#### System Testing Procedures

##### Stage 1

**Acceptance Testing** of the Optical fibre Drum  
Internal & External Checks, Length & Attenuation Co efficiency

##### Testing Laid Cable

- Testing of the fibre section
- Termination options for testing
- Loss testing  
Attenuation Co efficiency

##### Stage 2

##### Final Testing of complete system

- Termination options for testing
- Loss testing  
Micro Bending  
Macro Bending  
Attenuation
- Over sheath resistance testing
- Earthing & Bonding
- Checking Labels Identification i.e. Laser / Cable / Fibre
- Documentation & Schematics

#### Equipment

Launch & Tail Leads  
Reference Leads Issues  
Single mode Multi-mode 50 & 62.5 fibre issues

#### BFA & Mechanical Splices

- Use of Bare Fibre Adapters for testing
- Correct uses of Mechanical Splices

#### Mandrels and their use

#### Microscope Use & Importance

#### Understanding Connectors & Adapters

Type i.e. SC, FC/PC, MPx, LC & ST etc.  
Polish i.e. Flat, Angled, Super & Super Angled  
Faults:- Assessing performance of Connector and Adapters

#### Loss Test Set (ILM Testing)

- Understanding the various ILM Kits
- Cutback methods
- Various Referencing methods
- Understanding correct uses
- Active Equipment Testing
- Results and Documentation

#### Visible Light Source (VFL)

Limitations & Uses

#### Fibre Identifier

#### OTDR (Optical Time Domain Reflectometer)

- Understanding correct use
- Reflective & Non-Reflective Events
- Interpreting Results
- Fault Locating
- Launch & Tail Leads
- Results and Documentation
- OTDR Dynamic Range

#### PMD & CD Testing

- Testing for Length & Bandwidth Limitations

#### Schematics & Test Documentation

#### Maintenance & Trouble shooting




# Fibreplus Ltd

## Network Specialists

### Fibre / Copper Cable Installation, Design & Testing

- Description:** For those undergoing training or those employed as installation technicians in the telecommunications and media network also beneficial for the IT- Managers giving an insight to problems that are caused by cable infrastructure. This course covers the integration of telecommunications (PBX's Analogue & Digital) within the structured cable system
- Venue:** Fibreplus Training Centre, Wiltshire
- Duration:** Five Days
- Dates:** This course is offered continuously throughout the year. Please refer to the [online Calendar](#) enclosed for the start date of the next convenient course.
- Price:** Please refer to current price list. **FIBREPLUS PRICE GUARANTEE.** we guarantee that you will not be able to find this course at a lower fee anywhere else in the UK. We will match any lower fee.

#### Introduction

Pros and Cons of Wireless, Copper, Fibre Optic & Coax.

#### Design Criteria & Limitations

- Distance, Security, Bandwidth & Cost

#### Cable Type and Choices

- Category or Class
- Copper Components & Equipment
- Coaxial, 1308, UTP, FTP, STP & Multipair
- Fibre i.e. Multi /Single Mode
- OM1, OM2, OM3 or OS1

#### Safety and Permission issues

- PPE
- Working & Height
- BS 7671
- Asbestos
- Building Grade and Permissions
- Fire Stopping

#### European & International Standards

- ISO 11801
- EN 50173
- TIA/EIA 568-A

#### Installing Copper & Fibre Optic Structured Cabling

- Correct Termination Methods
- Digital & Analogue Telco Patch choices
- Correct cable laying procedures
- Cable support and Containment
- Segregation Limitations
- Earth bonding
- Labelling & Documentation

#### Termination Copper Cabling

- 568a or 568B
- Shielding Issues
- IDC type i.e. Krone, 110 or Block66
- Correct use of tooling for connectors

#### Testing Different Copper / Fibre Cabling

- Acceptance Testing
- Schematics
- OTDR Traces
- Loss Test Results
- Copper Test Reports
- Copper Tests i.e. Next, Crosstalk & ACR etc.
- Earth Impedance Check and Report

#### Understanding various types of testers

- Tone and Oscillators
- Wiremapper
- Certification Testers i.e. Fluke & Omni scanner etc.

#### Setting up copper test equipment

- Standards
- NVP
- Shielded or UTP, Class or CAT, Channel or Fixed
- Copper Channel & Fixed / Permanent Link Tests

#### Fault Finding

- Split Pairs
- Disconnections
- Reversals
- Crossed Pairs

#### ASSESSMENT

- Written assessment
- Simulated installation exercise



# City & Guilds

## 3666 Unit 1

City & Guilds

## Basic Principles of Communication Systems (Core Unit 1) 3666-01

- Description:** For those undergoing training or those employed as installation technicians in the telecommunications and media network also beneficial for the IT Managers & IT specialists. Core unit 01, A requirement to achieve a complete 3666 full accreditation along with one of the following optional 3666 units 2, 3 or 4.
- Venue:** Fibreplus Training Centre, Wiltshire
- Duration:** Three Days
- Dates:** This course is offered continuously throughout the year. Please refer to the online Calendar enclosed for the start date of the next convenient course.
- Price:** Please refer to current price list. **FIBREPLUS PRICE GUARANTEE.** We guarantee, you will not be able to find this course at a lower advertised fee anywhere else in the UK, or we will provide your course at 5% less.

### Risk Assessment & Method Statement

- Assess risks and create a method statement

### Health and Safety at Work Reg.

- PPE,
- PUWER
- Confined Space Regulation,
- Electrical at Work Regulation BS 7671
- Working at Height Regulation
- Control Of Substances Harmful To Health
- Confined Space Regulation
- Laser Safety BS60825
- Asbestos Regulation

### Understanding of communications systems

#### SI Units and symbols

- Electrical Symbols and Units
- Measurement
- Frequency

### Understanding of basic electricity

- Ohms Law
- The Atom
- AC/DC
- EMI

### Transmission Characteristics

- Principles of Voice, Video & Data systems
- Understanding of Bandwidth & Frequency
- Digital & Analogue
- RF transmission

### Cable Type and Choices

- Category or Class
- Copper Components & Equipment
- Coaxial, 1308, UTP, FTP, STP & Multipair
- Fibre i.e. Multi /Single Mode
- OM1, OM2, OM3 or OS1

### Different types of Emitters & Detectors

- LED
- Laser
- VCSELs
- Photo Diode, PIN & APD

### Theoretical Knowledge of cable installation

- Bandwidth Limitations
- Length, Distance Limitations
- Variants of Copper & Fibre Optics

### Understanding of systems

- TDM
- DWDM
- WDM
- Multiplexing

### Understanding of European & International Standards

- ITU
- Cenelec
- BS EN50173
- BS EN 50174 1-2
- ISO 11801
- ASSESSMENT

### Cable Separation & Segregation

- IT Cabling Screened & Unscreened
- Power Screened & Unscreened
- Containment and Tray Population

### City & Guilds Multiple Choice Assessment



**City &**  
**Guilts**

**3666 Unit 2**

## City & Guilds

### Fibre optic cabling in an **Internal** environment

(Unit 2) 3666-02

- Description:** Unit 2, requirement to achieve a complete 3666 full accreditation, for installation of Single / Multi-Mode Fibre within an internal environment.
- Venue:** Fibreplus Training Centre, Wiltshire
- Duration:** Five Days
- Dates:** This course is offered continuously throughout the year. Please refer to the online calendar for the start date of the next convenient course.

#### Introduction

- Telecommunications
- Pros and cons of fibre optics
- Measurement units
- Components

#### Optical Fibres

- How fibre works
- Multi mode and Single mode
- Parameters of operation
- Bandwidth, Frequency & Wavelength
- Refractive Index

#### Safety

- BS.7671 recommendations
- Safe working practices
- Laser radiation and safety

#### Fibre Types

- Multi & Single mode for internal installations
- OM1, OM2, OM3 & OS1

#### Cable Types

- Cable types, use and construction
- Loose Tube, & Tight Buffered
- Distribution & Breakout

#### Cable Installation and Preparation

- Cable handling issues
- Techniques and tools

#### Jointing of Fibre Optics

- Splice through and mid span
- Patch Panel components

#### Connectors

- Connectors basics and types
- Polishes i.e. Super, Flat, Angled and Super Angled
- Use of microscope and identifying issues
- Practical Workshop

#### Optical Splitters & Couplers

- WDM, DWDM & CWDM

#### Splicing

- Fusion splicing / Mechanical splicing
- Splicing - new developments
- Splicing pigtails v's direct connectorisation
- Cleaving
- Trouble shooting
- Splicing parameters
- Routine maintenance
- Arc Calibration

#### Installation & Planning Considerations

- Procedures to European & International Standards
- ISO 11801
- BS EN 50174
- BS EN 60825

#### Patch Panel & Distribution Boxes

- Optical Distribution Frames
- Distribution Boxes
- Breakout ~Boxes

#### Test Equipment and Correct Procedures

- Using the VLS
- Setting up ILM Kit and referencing
- Light Source & Power Meter (ILM) Testing
- Workshop with Practical ILM Kit Use
- Understanding all Test equipment
- Understanding OTDR features and principles
- Event types i.e. Reflective and Non-Reflective
- Macro & Micro Bending explained
- Correct Fault Locating Principles
- Test Leads, Launch & Tail Leads
- OTDR Trace Analysis & Bi-Directional trace interpretation
- OTDR capability and limitation explained
- Workshop with Practical OTDR Use

#### Assessment

- Practical and Written assessments
- C&G Multiple Choice Exam
- Simulated installation exercise



# City & Guilds

3666 Unit 3

## City & Guilds

### Fibre optic Cabling in an **External** environment

(Unit 3) 3666-03

- Description:** Unit 3, optional to achieve a complete 3666 full accreditation, for installation of fibre optic in an external environment.
- Venue:** Fireplus Training Centre, Wiltshire
- Duration:** Five Days
- Dates:** This course is offered continuously throughout the year. Please refer to the calendar enclosed for the start date of the next convenient course.
- Price:** Please refer to current price list. **FIBREPLUS PRICE GUARANTEE.** We guarantee you will not be able to find this course at a lower advertised fee anywhere else in the UK. or we will provide your course at 5% less.

#### Introduction

- Telecommunications
- Pros and cons of fibre optics
- Measurement units
- Components

#### Optical Fibres

- How fibre works
- Multi mode and Single mode
- Parameters of operation
- Bandwidth, Frequency & Wavelength
- Refractive Index

#### Safety

- BS.7671 recommendations
- Safe working practices
- Laser radiation and safety

#### Fibre Types

- Single Mode Variants
- Dispersion Shifted
- Non Zero Dispersion Shifted
- Leaf & Ribbon
- G652 to G657

#### Cable Types

- Cable types, use and construction
- OPGW, ADDS, Loose Tube, & Tight Buffered

#### Cable Installation and Preparation

- Cable handling issues
- Techniques and tools

#### Jointing of Fibre Optics

- Splice through and mid span
- Patch Panel components

#### Connectors

- Connectors basics and types
- Polishes i.e. Super, Flat, Angled and Super Angled
- Use of microscope and identifying issues
- Practical Workshop

#### Optical Splitters & Couplers

- WDM, DWDM & CWDM

#### Understanding of systems

- TDM
- DWDM
- WDM
- Multiplexing

#### Splicing

- Fusion splicing / Mechanical splicing
- Splicing - new developments
- Splicing pigtails v's direct connectorisation
- Cleaving
- Trouble shooting
- Splicing parameters
- Routine maintenance
- Arc Calibration

#### Installation & Planning Considerations

- Procedures to European & International Standards
- ISO 11801
- BS EN 50174
- BS EN 60825

#### Test Equipment and Correct Procedures

- Using the VLS
- Setting up ILM Kit and referencing
- Light Source & Power Meter (ILM) Testing
- Workshop with Practical ILM Kit Use
- Understanding all Test equipment
- Understanding OTDR features and principles
- Event types i.e. Reflective and Non-Reflective
- Macro & Micro Bending explained
- Correct Fault Locating Principles
- Test Leads, Launch & Tail Leads
- OTDR Trace Analysis & Bi-Directional trace interpretation
- OTDR capability and limitation explained
- Workshop with Practical OTDR Use

#### Assessment

- Practical and Written assessments
- C&G Multiple Choice Exam
- Simulated installation exercise



# City & Guilds

## 3666 Unit 4

### City & Guilds Copper cabling in an internal environment (Copper) Optional Unit 3666-04

- Description:** For those undergoing training or those employed as installation technicians in the telecommunications and media network also beneficial for the IT Managers giving an insight to problems that are caused by cable infrastructure.
- Venue:** Fibreplus Training Centre, Wiltshire
- Duration:** Five Days
- Dates:** This course is offered continuously throughout the year. Please refer to the online Calendar for the start date of the next convenient course for you.
- Price:** Please refer to current price list. **FIBREPLUS PRICE GUARANTEE.** We guarantee you will not be able to find this course at a lower advertised fee anywhere else in the UK, or we will provide your course at 5% less.

#### Introduction

Pros and Cons of Copper & Coax.

#### Design Criteria & Limitations

- Distance, Security, Bandwidth & Cost

#### Cable Type and Choices

- Category 5e, 6 & 7 or Class 5e, 6 & 7
- Copper Components & Active Equipment
- Coaxial, 1308, UTP, FTP, STP & Multipair

#### Safety and Permission issues

- PPE
- Working & Height
- BS 7671
- Asbestos
- Building Grade and Permissions
- Fire Stopping

#### European & International Standards

- ISO 11801
- EN 50173
- TIA/EIA 568-A

#### Installing Copper & Fibre Optic Structured Cabling

- Correct Termination Methods
- Digital & Analogue Telco Patch choices
- Correct cable laying procedures
- Cable support and Containment
- Segregation Limitations
- Earth bonding
- Labelling & Documentation

#### Balans

- RGB
- Telephone
- Coaxial

#### Termination Copper Cabling

- 568a or 568B
- Shielding Issues
- IDC type i.e. Krone, 110 or Block66
- Correct use of tooling for connectors

#### Testing Different Copper / Fibre Cabling

- Acceptance Testing
- Schematics
- Copper Test Reports
- Copper Tests i.e. Next, Crosstalk & ACR etc.
- Earth Impedance Check and Report

#### Understanding various types of testers

- Tone and Oscillators
- Wiremapper
- Certification Testers i.e. Fluke & Omni scanner etc.

#### Setting up copper test equipment

- Testing Standards
- NVP
- Shielded or UTP, Class or CAT, Channel or Fixed
- Copper Channel & Fixed / Permanent Link Tests

#### Fault Finding

- Split Pairs
- Disconnections
- Reversals
- Crossed Pairs

#### ASSESSMENT

- Written assessment
- Simulated installation exercise