City & Guilds 3667-02

Level 2 Award in Communication Cabling

The City & Guilds 3667-02 Awards in Communications Cabling are suitable for those interested in becoming communication cabling installers or those currently doing the job and seeking certification.

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UNIT 1
Principles of Communication Cabling

COURSE CONTENT
- Identify safe working practices in communication systems
- Basic principles of SI unit symbols
- Basic principles of communication systems
- Basic principles of data communication

Identify Safe Working Practices in Communication Systems
- Undertaking installation
- Carrying out preparation
- Precautions when carrying out an communications installations
- Terminating cables

Basic Principles of SI Unit Symbols
- Basic SI units
- Names and symbols for preferred SI prefixes
- Waves and wave motion
- Amplitude, wavelength, frequency and the unit frequency
- Relationship between velocity, frequency and wavelength

Basic Principles of Communications Systems
- Types of communication systems
- Methods of communication
- Differences between analogue and digital signals
- Advantages & disadvantages of fibre versus copper

Basic Principles of Data Communication
- Advantages & disadvantages of digital versus analogue
- Types of computer networks
- Advantages & disadvantages of serial versus parallel data communication

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UNIT 2
Fibre Optic Cabling in an Internal Environment

COURSE CONTENT

- Safety regarding working with fibre optics in an internal environment
- Recommended installation procedures and standards
- Preparation of cable/fibres for connectorisation & splicing
- Splicing of optical fibres, connector termination & testing of fibre optic links

Working Safely with Optical Fibres in an Internal Environment
- Safe working procedures of installation of fibre cables
- Safe working in preparation of fibre cables
- Special precautions and safe working procedures in relation to splicing and termination

Recommended Installation Procedures
- Use of fibre optics in LAN's
- Types of optical fibres
- Fibre specifications and parameters
- Fibre and cable test methods and documentation
- Components within an optical fibre communication system
- Best practices and fibre management of installation

Preparation for Fibre Connectorisation and Splicing
- Cable characteristics
- Constructional features of fibre optic cables
- Cutting & stripping tools
- Fibre preparation, cleaning and techniques used

Splicing Together Optical Fibre
- Principles and methods of splicing
- Cleaving
- Fusion and mechanical splicing equipment and applications
- Performance in relation to industry standards
- Troubleshooting

Terminating Fibre Optic Cable by Fitting Connectors
- Types and use of common connectors
- Termination tools and materials
- Fitting procedures for connectors
- Common faults in termination
- Performance tests

Testing Fibre Optic Links
- Measuring Loss
- Test equipment, their features and testing procedures
- Operating test equipment
- Understanding and identifying test results

Exam & Assessment Method
- City and Guilds multiple choice assessment - 1 hr

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UNIT 3
Fibre Optic Cabling in an External Environment

COURSE CONTENT
- Safety regarding working with fibre optics in an external environment
- Recommended installation procedures and standards
- Preparation of cable/fibres for connectorisation & splicing
- Splicing of optical fibres, connector termination & testing of fibre optic links

Working Safely with Optical Fibres in an External Environment
- Safe working procedures and regulations in regards to; Splicing, Testing and Industry legislation/guidance

Recommended Installation Procedures
- Fibre optics in communication networks
- Fibre specifications and parameters
- Test and inspection methods
- Components and equipment
- Best practices and fibre management
- Testing methods
- Cabling laying procedures

Preparing Fibre Optic Cable for Fibre Splicing
- Identifying Cables
- Constructional features of singlemode fibre
- Cable cutting and stripping tools
- Fibre cleaning materials and techniques
- Preparing cable for splicing

Joining Fibre Optic Cables by Splicing
- Cable jointing environment
- Working principles of splicing
- Preparing bare fibre
- Splicing fibres
- Sealing and cable retention for joint enclosure

Terminating Fibre Optic Cables by Splicing
- Suitable connectors for telecoms environment
- Cable termination
- Cleaving, tools and techniques

Testing Fibre Optic Links
- Test methods
- Testing equipment i.e ILM, OTDR
- Understanding results
- Documenting and comparing results

Exam & Assessment Method
- City & Guilds multiple choice assessment - 1 hr
- Assessed practical exercises

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UNIT 4
Copper Cabling in an Internal Environment

COURSE CONTENT
- Safety regarding working with copper cabling in an internal environment
- Basic electrical theory and safety
- Recommended installation procedures and standards
- Preparation of cable/fibres for connectorisation & splicing
- Splicing of optical fibres, connector termination & testing of fibre optic links

Working Safely with Copper Cabling in an Internal Environment
- Safe working procedures in line with industry guidance and regulations in regards to; installation, preparation, electrical safety, battery/electrically powered test equipment
- Risk assessment

Basic Electrical Theory and Safety in Regard to Data Communications Cabling
- Electrical symbols and basic theory
- What are MHz and Mbits
- Testing parameters
- Copper communications signalling
- Management and rules of copper cable installation
- Copper cabling wiring diagrams

Installing Copper Communication Cabling
- Site surveys
- Cable laying procedures
- Cable types topologies for installation
- Classes, standards and categories of cabling
- Rules and special precautions observed for installation and site surveys

Terminating Copper Communication Cabling
- Terminating hardware with manufacturers guidance
- Cable preparation and terminating tools
- What is IDC methods
- What is LJU's
- Rules and special precautions of termination
- Identifying appropriate situations and environments

Testing FTP, UTP and Multicore Copper Links
- FTP & UTP copper cable links
- Multicore installation
- Telephone cabling systems
- Testing cabling plan installations
- National and international testing standards
- Measurement methods
- Testing telephone cabling

Exam & Assessment Method
- City & Guilds multiple choice assessment - 1 hr
- Assessed practical exercises