

This certificate is aimed at new entrants, e.g. cable installers or for adults looking to enhance their promotion prospects e.g. network engineers. It is also suitable for learners who want career progression within the industry/related sector or to develop the skills learnt from other qualifications and need evidence towards their underpinning knowledge. The Level 3 Certificate in Designing & Planning Communications Networks combines the study of current telecommunications and computer networks, planning and management. The distinction between these career pathways has become blurred with issues such as bandwidth, security and quality of service becoming common with both.

This qualification also provides progression for learners who have completed the City & Guilds Level 2 Award in Communications Cabling and the Level 2 Diploma in ICT Systems & Principles.

Note

To receive the full 3667-03 certificate, the core unit 1 must be completed along with at least one of the optional units.

The units contained within this certificate are part of the QCF and can contribute credits to the following qualification:

- City & Guilds 7540-13 Certificate in ICT systems and Principles for Advanced Apprentices.

Unit 1: 10 credits

Unit 2: 10 credits

Unit 3: 11 credits

Unit 4: 11 credits

City & Guilds 3667-03 Unit 1 (Mandatory core unit) **Concepts of Design & Planning a Network Cable Infrastructure**

This unit covers the principles of designing and planning communications infrastructures in a range of environments.

Main topics covered:

- Terms & definitions used.
- Different types of communications infrastructures.
- Principles of planning and the importance of its drivers.
- Importance of UK 3rd party issues.
- Relevance of Operator License, other legislative requirements and Codes of Practice.
- Customer needs regarding engineering scope of works.
- Use of Project Management tools & techniques and other supporting documents.

City & Guilds 3667-03 Unit 2 (Optional unit) **Design & Planning for an Internal Network Cable Infrastructure**

This unit covers the designing and planning of communications infrastructures in an internal environment.

Main topics covered:

- Site surveys for the provisions of an internal Networking Cabling Infrastructure (NCI).
- Options for the provisions of an internal NCI services.
- Selecting the optimum routes.
- Designing the provisions of an internal NCI.
- Designing & planning an internal NCI.
- Coordination of internal NCI provisions.

City & Guilds 3667-03 Unit 3 (Optional unit) **Design & Planning for an External Overhead Network Cable Infrastructure**

This unit covers the designing and planning of communications infrastructures in an external overhead environment.

Main topics covered:

- Site surveys for the provisions of an external overhead cabling infrastructure.
- Selecting the optimum routes.
- Designing the provisions of an external overhead cabling
- Designing & planning for external overhead cabling infrastructures.
- Workflow activities for the provision of an external overhead cabling infrastructure.

City & Guilds 3667-03 Unit 4 (Optional unit) **Design & Planning for an External Underground Network Cable Infrastructure**

This unit covers the designing and planning of communications infrastructures in an external underground environment.

Main topics covered:

- Site surveys for the provisions of an external underground cabling infrastructure.
- Selecting the optimum routes.
- Designing the provisions of an external underground cabling infrastructure.
- Designing & planning for external underground cabling infrastructures.
- Workflow activities for the provision of an external overhead cabling infrastructure.

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 or learners looking to progress within the industry and develop additional skills in design and planning. As the core unit it is a requirement to achieve a complete 3667-03 full accreditation along with one of the following optional 3667-03 units 2, 3 or 4.

Venue: Main Fibreplus Ltd Training Centre: Westbury Wiltshire.

Centres: **Westbury - Dunfermline - Peterborough - Lancaster - Surrey**

Duration: **Combined with either unit 2, 3 or 4, typically over a period of 5 or 10 days.**

Dates: Available most weeks throughout the year, refer to Calendar and call for booking availability.

Price: Please refer to current price list. **FIBREPLUS PRICE GUARANTEE.** Not to be beaten on a like for like basis.

Design Concepts

Types of Communications Infrastructures

- CCTV
- CATV
- Broadcast
- Access
- WAN
- LAN
- Mobile

Network Classes

- Underground
- Overhead
- Radio
- Satellite
- Free Space Optical
- Internal

Network Infrastructure

- Duct
- Chambers
- Trunking
- Earthing
- Cables
- Termination Equipment
- Poles
- Joints

Understanding of Standards

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

Planning Concepts

Principles of Planning

- Define the role and reason for planning
- Drivers for planning
- Annual charges
- Inherent costs

Customer Needs and Engineering Scope of Works

- Translate customer needs to Scope of Works
- Interpret Drawings
- Growth Potential
- Strategic needs and phasing

Sources of Information

- Customer Order
- Building Drawings
- Specifications
- Local Authority

Preliminary Surveys

- Budget Estimates
- 3rd Party Issues
- Identify potential routes and issues

Detailed Survey

- Determine Optimum Route
- Engineering and 3rd Party Issues
- Accurate Time and Cost Estimate
- Assured Routes

UK 3rd Party Issues

- Way leave
- Impacts
- Method Statements
- NRSWA
- Critical Junctions

Operator License and Legislative Requirements

- Telecommunications Act
- Interconnection Regulation
- Highways Act
- New Roads and Street Works Act
- HASAW
- Environmental Health Act
- Traffic Management Act
- Town and Country Planning Act
- Code Powers
- Code of Practice

Project Management Tools and Techniques

- GANTT Charts
- Network Diagrams
- Critical Path
- Resource Allocation
- As-Built Records
- Geographical and Non-Geographical Records

Exam and Assessment Method

- **City & Guilds 15 question Written Exam**



Main Training Centre

Fibreplus Ltd. Unit 1 - 4 Brook Lane,
Westbury, Wiltshire. BA13 4ES

Tel:- 01225 636041 email:-enq@fibreplus.co.uk

- Description:** For those undergoing training or those employed as installation technicians of telecommunications and media networks. Also beneficial for the IT Managers & IT specialists or learners looking to progress within the industry and develop additional skills in design and planning of internal networks. Unit 2 is one of three options required to achieve a complete 3667-03 full accreditation along with the core unit 1.
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Design Concepts

Design Schematics

- Valid Information
- Present and Future Requirements
- Identify Components and Quantities
- Optimisation
- Document Hazards
- Constraints and Limitations
- Design Tools

Fibre Types

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

Installation & Planning Considerations

- Procedures to European & International Standards
- ISO 11801
- BS EN 50174
- BS EN 50173
- BS EN 60825

Cable Types

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

Network Infrastructure

- Trunking
- Earthing
- Cables
- Termination Equipment

Patch Panel & Distribution Boxes

- Optical Distribution Frames
- Distribution Boxes
- Breakout Boxes

Planning Concepts

Costing

- Itemised
- Contingencies
- Confidentiality
- Records

Works Activities

- Comply with relevant legislation, regulations and safe working practices
- Optimise resources
- Maintain Existing Services
- Control Risks
- Procedures to be followed

Provisioning Options

- Risk/Cost Benefit
- Sensitivity Analysis
- Future Demands
- Forecasting
- Evaluate Different Options
- Long Term Requirements
- Authority to Proceed
- Documentation

Plans and Records

- Floor Plans
- Utilisation Records
- Duct Prints
- Rack Layouts
- Records

Legislation and Regulations

- Radio Frequency Allocation
- Planning Authority
- Highways Authority

Detailed Plans

- Identify Equipment Locations
- Risks and How to Control Them
- Work Flow
- Manpower
- Resource Management
- Timescales

Co-ordinate the Provision

- Works Program
- Timescales
- Resource Management
- Dependencies
- Critical Path Activities
- Specialist
- Reviews
- Safety and Quality Standards

Exam and Assessment Method

- Assessed design project.



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Design Concepts

Design Schematics

- Valid Information
- Present and Future Requirements
- Identify Components and Quantities
- Optimisation
- Document Hazards
- Constraints and Limitations
- Design Tools

Fibre Types

- Multi/Single mode for external installations
- OM1, OM2, OM3 & OS1, OS2
- G652, G653, G654, G655, etc.

Installation & Planning Considerations

- Site Surveys
- Procedures to European & International Standards
- ISO 11801
- BS EN 50174
- BS EN50173
- BS EN 60825

Cable Types

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

Network Infrastructure

- Duct
- Chambers
- Cables
- Termination Equipment
- Poles
- Joints

Planning Concepts

Legislation and Regulations

- Access Restrictions
- Overhead Power Lines
- Planning Authority
- Highways Authority

Detailed Plans

- Pole/duct Locations
- Identify Equipment Locations
- Risks and How to Control Them
- Work Flow
- Manpower
- Resource Management
- Timescales

Site Surveys

- Equipment Areas
- Available Space
- Existing and Planned Systems
- Cable Routes
- Survey Tools
- Hazards and Environmental Constraints
- Topographical Constraints
- Health and Safety Issues
- Power and Environmental Services
- Building Entry
- Variations

Costing

- Itemised
- Contingencies
- Confidentiality
- Records

Provisioning Options

- Risk/Cost Benefit
- Sensitivity Analysis
- Future Demands
- Forecasting
- Evaluate Different Options
- Long Term Requirements
- Authority to Proceed
- Documentation

Works Activities

- Comply with relevant legislation, regulations and safe working practices
- Optimise resources
- Accommodation and Support Services
- Specialist Equipment
- Maintain Existing Services
- Control Risks
- Procedures to be followed
- Acceptance Testing

Plans and Records

- OS Maps
- Utilisation Records
- Duct Prints
- Rack Layouts
- Records

Co-ordinate the Provision

- Works Program
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Exam and Assessment Method

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Design Concepts

Design Schematics

- Valid Information
- Present and Future Requirements
- Identify Components and Quantities
- Optimisation
- Document Hazards
- Constraints and Limitations
- Design Tools

Fibre Types

- Multi/Single mode for external installations
- OM1, OM2, OM3 & OS1, OS2
- G652, G653, G654, G655, etc.

Installation & Planning Considerations

- Site Surveys
- Procedures to European & International Standards
- ISO 11801
- BS EN 50174
- BS EN50173
- BS EN 60825

Cable Types

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

Network Infrastructure

- Duct
- Chambers
- Cables
- Termination Equipment
- Joints

Planning Concepts

Legislation and Regulations

- Access Restrictions
- Overhead Power Lines
- Planning Authority
- Highways Authority

Detailed Plans

- Duct and chamber Locations
- Identify Equipment Locations
- Risks and How to Control Them
- Work Flow
- Manpower
- Resource Management
- Timescales

Site Surveys

- Equipment Areas
- Available Space
- Existing and Planned Systems
- Cable Routes
- Survey Tools
- Hazards and Environmental Constraints
- Topographical Constraints
- Health and Safety Issues
- Power and Environmental Services
- Building Entry
- Variations

Costing

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