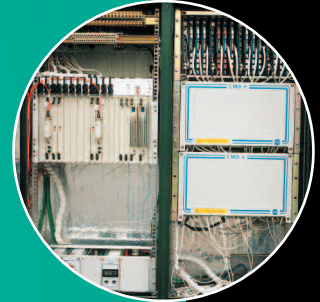


Access Networks

Modern access networks are being built across Europe deploying the latest technologies from ADSL to Fibre To The Home 21st century networks technologies and topologies set new challenges for the technicians and engineers working in the access network domain. This qualification provides the learners with the underpinning knowledge and practical skills to meet the challenges and needs of the industry.



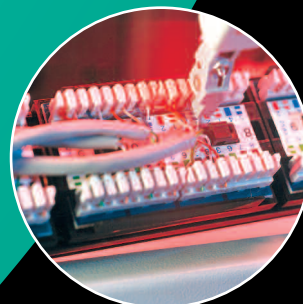
Outside Plant



*Network Testing
and Activation*



Overhead Networks



Termination Techniques

UNIT 1

ACCESS NETWORKS SYSTEMS

Module 1

Overview of Core, Metropolitan and Access Networks

You will learn:

- Where Access Networks fit into a national telecommunications network. OSI Seven Layer Model

Module 2

HFC Networks

You will learn:

- Resistance Circuits and Ohms Law
- AC Waveforms
- Decibels and Reference Levels
- Digitising Analogue Information and Data Signal Generation
- Modulation Techniques, PCM, QAM, QPSK, COFDM, AM, FM
- Analogue and Digital Television Signals, MPEG-2 Encoding
- Digital CATV and Telephony System Topology (Digital Media Centre, Regional Headends and Hub Sites)
- Fibre Nodes and Repeater Amplifiers
- Coaxial and Optical Fibre Cables and Associated Components
- CNR and Bit Error Ratio
- Forward and Reverse Paths
- Functions of Subscriber Installed Equipment – Set Top Box, Cable Modem
- Test Equipment

Module 3

Passive Optical Networks

You will learn:

- Emerging Technologies
- FTTX
- PON
- FTTH
- BPON, GPON, GEAPON, APON
- Optical Line Terminal (OLT)
- Optical Network Terminal (ONT)
- Fibre Optic Splitters
- OSP & ISP

Module 4

21st Century Access Networks

You will learn:

- Key Technologies
- Internet Protocol (IP)
- Multi-Protocol Label Switching (MPLS)
- Synchronous Digital Hierarchy (SDH)
- Session Initiation Protocol (SIP)

- Virtual Local Area Network (VLAN)
- Wave Division Multiplexing (WDM)
- ATM, XDSL, MSAM
- Telephony theory (analogue and digital), ISDN, access and core networks
- Basic elements of TDM systems – switching, multiplexing, PDH, SDH, basic and primary rates, ISDN 2 Mbs circuits, ADSL and ATM
- Functions of customer installed equipment – telephone circuit, Centrex, Fax

Module 5

Installation of Access Networks

You will learn:

- Health & Safety, Risk Assessment working at height
- Customer Skills
- Common Sense of Decorum
- Preparation, Tooling, Equipment
- Surveying Drop Path
- ISP
- OSP
- Coaxial Cables
- Siamese drop cables
- IDC Termination Techniques
- Telephone Cables
- Coaxial F Connectors
- Multiple Pair Voice CW1308
- DPs
- MDF's
- Test Equipment
- Multi-meters 9083
- TDR's
- Spirient Hawk Testers
- Gas Testing OSP

UNIT 2

INSTALLATION, MAINTENANCE AND SERVICE OF ACCESS NETWORKS

Module 6

Installation of Subscribers Equipment

You will learn:

- Installation of Customer Premises Equipment (CPE)
- Network Terminal Equipment (NTE)
- Telephony circuits, Modems and set top boxes home hubs coaxial drop cables
- Access Network Subscribers Installation
- Access Testing Copper, Fault-Finding & Rectification Telephony, CATV and Modems
- Use of Test Equipment
- SLM

- TDR's
- Telephone Butt Sets
- Tone and Probe Generators
- Fault Diagnosis

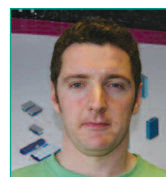
Module 7

Optical Fibre Access Networks

You will learn:

- Optical Fibre Light Basics
- Fibre Splicing & Connectorising
- Insertion Loss Measurement (ILM)
- Smart Test Equipment
- Access Network Testing Optical Fibres
- Access OTDR Testing

Success stories



STEWART WYLIE

Ex Army

Cable Installer, Canada



BILL PRIDEAUX

Ex Royal Navy Chef

Cable TV Installer



NATHAN CHERRY

Ex Royal Irish

Fibre Engineer in Afghanistan

See more success stories at: www.cable-training.co.uk and view the 'been there done that' section.

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