

DCT Copper systems and Fiber systems



1. Copper Systems

Program Duration:

5 Days

Program Objectives

Delegates are equipped with the knowledge, skills, and expertise to competently undertake the installation of the Structured Cabling Solutions Course.

Target Audience

Network Engineers

Pre-requisite

Those attending this course require basic understanding of network topology.

Program Overview

DCT Structured cabling (Copper) is a unique multi-vendor course that introduces Structured Cabling standards for Fiber installations. The class-based training offers advanced hands-on experience labs to prepare students for any deployment scenarios for structured cabling.

DCT Copper Systems Topics

a). Introduction to Balanced Twisted-Pair Cables

- Telecommunications Outlets
- Patchpanels
- Wiring Blocks

b). Cabling Standards

- Telecommunications cabling standards.
- Advantages of Standards
- Standards bodies
- ANSI/TIA/EIA Standards
- ISO/IEC Standards
- CENELEC Standards
- Cable categories/Classes

c). Horizontal Cabling

- Horizontal Channels
- Channel Lengths
- Horizontal Pathways
- Maximum Pathway Fill

d. Backbone Cabling

- Backbone Cabling Systems
- Backbone Cabling Distance Limitations

e). Work Area Cabling

- Work Area Components
- Telecommunications Outlets
- Work Area Cable Termination

f). Telecommunications Spaces

- Equipment Rooms
- Telecommunication Rooms
- Entrance Facilities

g). Electromagnetic Interference (EMI)

- What is EMI
- Power Separations/ Shielding

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DCT Copper Systems Topics

h). Installation Practices

- Cable Management
- Bend Radius
- Cable Stacking Height
- Cable Stress
- Cable Support
- Rack Clearance
- Equipment Locations
- Mounting Connecting Hardware
- Earthing And Bonding
- Cable Pulling
- Cable Termination

i). Testing(Fluke DSX)

- Permanent Link Testing
- Channel Testing
- Test Parameters

j). Administration

- Labels
- Records
- Administration Classes

k). Backbone Cabling

- What is warranty?
- Test Results
- Warranty Registration form

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2. Fiber Systems

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DCT Fiber systems Topics

a). Introduction to Fibre Optics

- What are Optical Fibres?
- Optical Fibre Construction
- Fibre Sizes

b). Optical Fibre Transmission

- Fibre optic transmission systems and data links
- Transmitting and receiving devices
- Transmission over different types of fibre
- Electromagnetic Spectrum and Wavelengths
- Fibre Optic Transmission Windows

c). Typical Types of Fiber Optic Cables

- Aerial Fiber Optic Cable
- Underground Fiber Optic Cable
- Undersea Fiber Optic Cable
- Direct Buried Fiber Optic Cable
- Ribbon Fiber Optic Cable
- Loose Tube Fiber Optic Cable
- Armored Fiber Optic Cable
- Newer Fiber Optic Cable Types

d). Fibre Splicing and Terminating

- What is fibre splicing?
- Fusion Splicing
- Mechanical Splicing

e). Fiber Optic Connectivity

- Connectors
- Adapters
- Patch cords
- Patch panels

f). Fiber Optic Distribution Systems

- Fiber enclosures
- Fiber distribution cabinets
- Fiber distribution frames
- Fiber patch panels
- Splice trays
- Slack spools
- Patch cables

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DCT Fibre Systems Topics

g). Inspecting and Cleaning Optical Fiber Connectors

- Core alignment.
- Physical contact.
- Pristine connector interface

h). Signal Degradation

- Attenuation loss
- Absorption
- Scattering
- Bending loss
- Dispersion loss
- Coupling loss

i). Fiber Optic Distribution Systems

- Fiber enclosures
- Fiber distribution cabinets
- Fiber distribution frames
- Fiber patch panels
- Splice trays
- Slack spools
- Patch cables

j). Inspecting and Cleaning Optical Fiber Connectors

- Core alignment.
- Physical contact.
- Pristine connector interface

k). Designing Fibre Optic Network

- Fiber Type
- Network Topology
- Fiber Count
- Scalability
- Redundancy
- Implementation