DCT COPPER SYSTEMS AND FIBER SYSTEMS

The DCT Structured Cabling course introduces multi-vendor structured cabling standards for copper and fiber installations, equipping participants with essential skills for modern network infrastructure.

Certification provided with Credly by Pearson

Duration: 5 Days

Course Code: DCT - INFR- SC

Copper systems - Overview:

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

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

Pre-requisite
- Those attending this course require basic understanding of network topology.

Certificates:
• Giganet Certified Installer
• Siemon RI (Registered Installer)
• DCT Certified Installer

Target Audience
Network Engineers

Labs
Terminations, Troubleshooting and testing on: • Category 6 UTP Cabling system • Category 6A FTP Cabling system • Trouble shooting and Testing of both Cat 6 and Cat 6A cabling with LAN tester and basic Fluke performance tester.

Certificates:
- Giganet Certified Installer (Copper)
- Siemon Installer (RI)
- DCT Certified Installer (Copper)

Course Content (Incudes DCT Essentials)

Introduction to Balanced Twisted-Pair Cables Connecting Hardware
• Telecommunications Outlets
• Patchpanels
• Wiring Blocks

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

Horizontal Cabling
• Horizontal Channels
• Channel Lengths
• Horizontal Pathways
• Maximum Pathway Fill

Backbone Cabling
• Backbone Cabling Systems
• Backbone Cabling Distance Limitations

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

Telecommunications Spaces
- Equipment Rooms
- Telecommunication Rooms
- Entrance Facilities

Electromagnetic Interference (EMI)
- What is EMI
- Power Separations/ Shielding

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

Testing
- Permanent Link Testing
- Channel Testing
- Test Parameters

Administration
• Labels
• Records
• Administration Classes

Warranties
• What is warranty?
• Test Results
• Warranty Registration form

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Duration: 5 Days

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Fiber systems - 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.

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

Pre-requisite
- Those attending this course require basic understanding of network topology

Certificates:
- Giganet Certified Installer
- Siemon RI (Registered Installer)
- DCT Certified Installer

Target Audience
Network Engineers

Labs
TTerminations, splicing of fiber, Troubleshooting, and testing on: Fiber cabling with VFL, Lash light and basic Fluke performance tester.

Certificates:
- Giganet Certified Installer (Fiber)
- Siemon Installer (RI)
- DCT Certified Installer (Fiber)

Course Content (Incudes DCT Essentials)

Introduction to Fibre Optics
- What are Optical Fibres?
- Optical Fibre Construction
- Fibre Sizes

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

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

Fibre Splicing and Terminating
- What is fibre splicing?
- Fusion Splicing
- Mechanical Splicing

Fiber Optic Connectivity
- Connectors
- Adapters
- patch cords
- patch panels

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

Inspecting and Cleaning Optical Fiber Connectors
- Core alignment.
- Physical contact.
- Pristine connector interface

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

Fiber Optic Distribution Systems
- Fiber enclosures
- Fiber distribution cabinets
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Inspecting and Cleaning Optical Fiber Connectors
- Core alignment.
- Physical contact.
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Designing Fibre Optic Network
- Fiber Type
- Network Topology
- Fiber Count
- Scalability
- Redundancy
- Implementation

Course Outline

Fibre Optic Safety
• Know the standards that apply to your work
• Keep it clean • Understand the chemicals you're handling
• Be aware of your environment
• Use the right tools

Fibre Optic Cable Installation
• Conduct a thorough site survey prior to cable placement
• Develop a cable pulling plan
• Follow proper procedures
• Do not exceed cable minimum bend radius
• Do not exceed cable maximum recommended load
• Document the installation.

Fibre Optics Testing (Fluke DSX)
• Types of test required
• Flashlight and Visual Fault Locator
• Fibre Microscope
• Attenuation testing using Light Source and Power Meter
• Channel Attenuation Calculation
• Optical Time Domain Reflectometer

The Best Practices for Troubleshooting Fiber Optic Testing Issues
• Inaccurate Test Results
• Prevention Strategies (inaccurate results)
• Troubleshooting Techniques (Inaccurate results)
• High Optical Power Loss
• Prevention Strategies (High Optical Power Loss)
• Troubleshooting Techniques (High Optical Power Loss)
• Excessive Return Loss
• Prevention Strategies (Excessive Return Loss)
• Troubleshooting Techniques (Excessive Return Loss