

Certified Network Cabling Design Professional

Course Duration: 16 Hours

Course code: CNCDP

1. Course Overview

This course equips participants with the knowledge and skills to design, plan, and implement structured network cabling systems. The focus is on standards-based cabling design, system performance, and compliance with industry regulations. Participants will also learn to select appropriate materials, manage projects, and ensure long-term reliability and scalability of network infrastructure.

2. What you'll learn?

By the end of the course, learners should be able to:

- Understand standards and regulations for network cabling systems (TIA/EIA, ISO/IEC)
- Design structured cabling for enterprise, data center, and industrial networks
- Select appropriate cabling types (copper, fiber) and components
- Plan for performance, scalability, and future-proofing
- Test and certify cabling installations
- Manage cabling projects, budgets, and vendor relationships
- Troubleshoot common cabling and connectivity issues

3. Target Audience

- Network designers and engineers
- IT infrastructure planners and managers
- Data center and telecom engineers
- Facility managers involved in network infrastructure projects

4. Pre-Requisites

- Familiarity with:
- Basic networking concepts and protocols
- Physical layer concepts in networking (OSI Layer 1)

- IT infrastructure and data center basics

5. Course content

Module 1: Course Introduction

- Introduction
- Course contents

Module 2: Overview of Structured Cabling

- Structured cabling concepts and benefits
- Industry standards and regulations (TIA/EIA-568, ISO/IEC 11801)
- Cabling components and topology types

Module 3: Copper Cabling Systems

- Twisted pair cabling (Cat5e, Cat6, Cat6a, Cat8)
- Connector types (RJ45, keystone, patch panels)
- Installation best practices and guidelines
- Performance considerations and testing

Module 4: Fiber Optic Cabling Systems

- Single-mode vs. multi-mode fiber
- Fiber connectors and termination techniques
- Patch panels, splicing, and optical distribution
- Testing, certification, and troubleshooting

Module 5: Cabling Design Principles

- Network layout and topology planning
- Capacity planning and future-proofing
- Pathways, racks, and cable management
- Environmental considerations (EMI, temperature, humidity)

Module 6: Data Center Cabling Design

- High-density cabling for servers and storage

- Rack and row planning
- Redundancy and fault-tolerant design
- Standards for data center cabling

Module 7: Telecommunications Room and Work Area Design

- Telecommunications room layout and infrastructure
- Work area outlets and patching considerations
- Labeling and documentation best practices
- Managing horizontal and vertical cabling

Module 8: Testing and Certification

- Cable testing tools and techniques
- OTDR and copper testing methods
- Certification standards and reporting
- Troubleshooting and quality assurance

Module 9: Project Management for Cabling Design

- Budgeting and resource allocation
- Vendor and contractor management
- Installation planning and scheduling
- Documentation and compliance reporting

Module 10: Safety and Compliance

- Workplace safety practices
- Regulatory compliance (NEC, OSHA, local codes)
- Risk assessment and mitigation
- Fire safety and emergency planning

Module 11: Advanced Cabling Practices

- High-speed cabling for emerging technologies
- Structured cabling for IoT and industrial environments
- Network scalability and modular design

- Green cabling and energy efficiency considerations

Module 12: Course Wrap-Up and Certification Preparation

- Summary of key concepts
- Recommended resources for further learning

