CNCDP®

CERTIFIED NETWORK CABLING DESIGN PROFESSIONAL

The Company

EPI is a data centre specialist company of European origin operating world-wide in over 60 countries through direct operations and a large partner network. EPI offers an extensive range of data centre services on auditing, certification and training. EPI's focus is on mission-critical, high-availability environments. Established in 1987, EPI has developed an international reputation for delivering high quality technical expertise, with flexible and innovative services, techniques and methodologies.

All our services are aimed at helping our customers to:
- Increase **Availability** of their mission-critical infrastructure
- Improve **Efficiency**, **Effectiveness** and **Manageability**
- **Minimise risk** of business interruption

Our Clients share a common need to protect their valuable data, run their mission-critical infrastructure efficiently and to be protected on a 24 x 7 basis. By protecting the interests of our customers, EPI is committed to an intensive program of comprehensive services development backed by engineering and support excellence.

Quality Systems and Procedures have always been at the heart of every stage of our service delivery to ensure consistent and high quality services. We are known for our thoroughness, flexibility and responsiveness. We focus on providing servicess that fit each organisation and each project with a drive to deliver quality on time, every time.

Let us put our expertise to work for you!

Data Centre Services

Audit & Certification
- Data Centre Standards
  - ANSI/TIA-942
  - DCOS®
- International Standards
  - ISO 9001   - ISO 22301
  - ISO 14001   - ISO 27001
  - ISO 14644   - ISO 37001
  - ISO/IE 20000-1   - ISO 45001
  - ISO 22237   - ISO 50001
- Singapore Standards
  - SS 506
  - SS 507
  - SS 564
- European Standards
  - ISO/IEC TS 22237

Professional Training & Certifications
- Data Centre
  DCFC®, CDCP®, CDCS®, CDCE®, CDFOS®, CDFOM®, CDRP®, CDMS®, CTDC®, CTIA®, CTEA®
- IT
  CITO®, CITM®, CITD®

Non-Certification Training
- Digital Transformation

Frameworks
- IT&DCF® - IT & Data Centre Framework
- DCCF® - Data Centre Competence Framework
- DCTF® - Data Centre Training Framework
- ITTF - IT Training Framework

Standard
- DCOS® - Data Centre Operations Standard

Introduction

With few exceptions, enterprises today rely on IT for the delivery of business-critical services - often directly to the end consumer. It is therefore vital that the mission-critical data centre is designed, maintained and operated with high-availability and efficiency in mind. Among all the facilities, network cabling is the foundation for the network and one of the major contributors to the availability of the data center.

CNCDP® is a 2-day course designed to expose participants to in-depth knowledge in designing and installing the data network cabling system which includes key subject matters such as; technical standards, designing of different cabling sub-systems, calculation of material requirements, architecture, installation, testing and acceptance.

Roadmap

Design / Build

CDCE®
Certified Data Centre Expert

CDCS®
Certified Data Centre Specialist

CDCP®
Certified Data Centre Professional

CNCDP®
Certified Network Cabling Design Professional

Audience

The primary audience for this course is any IT, facilities or data centre professional, consultant and/or those who work in network cabling system design, implementation and operation.

Global Accreditation
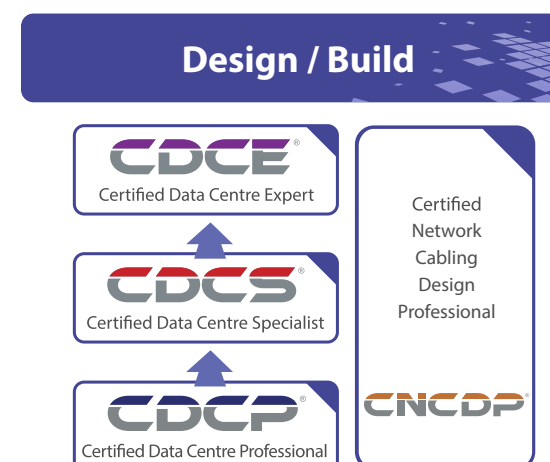

World-wide accredited by EXIN

Prerequisites

There is no specific prerequisite for the CNCDP® course. However, participants who already have at least one or two years' experience in a IT, data centre or facilities environment may be best suited. Those with no experience just yet are most welcome to participate.

Course Benefits ☑

After completion of the course the participant will be able to:
- ☑ Understand the various standards for network cabling systems, the models and how to apply these to the network design
- ☑ Design the user cabling and patching system for commercial buildings
- ☑ Design the network cabling and patching system for data centres
- ☑ Design the backbones for both indoor and outdoor cabling
- ☑ Select the proper cabling containment/ pathways for network installations
- ☑ Apply the correct installation practices and avoid common mistakes
- ☑ Define the right testing criteria and methods for copper and fiber systems

Introduction to Structured Cabling System (SCS)
- Brief history of SCS
- Basic copper and fibre transmission
- Copper and fibre cabling
- Single and multimode fibre
- Step/graded index multimode fibre
- Difference between Commercial Wiring and data centre cabling
- Development of standards
- Role of standards
- ANSI/TIA 568 standard
- Common standards
- The new usage of cabling to support Smart building

Horizontal and Administration - Commercial Building
- Standard diagram recap: ANSI/TIA-568
- Functional elements and example
- Scenario A: Determine the number of work areas
- Scenario B: Determine the number of user locations
- Zone wiring
- Administration: Interconnect and cross-connect
- Angled and flat panels
- Creating a cabling schematic design
- Convert schematic into physical layout
- Calculating the material list

Horizontal and Administration - Data Centre
- Standard diagram recap: TIA-942
- Basic/Reduced/Typical data centre setup
- Traditional 3 layers network design/ Spine and Leaf network design
- Select termination hardware
- Administration design
- ToR/EoR/Spine & Leaf cabling design
- Network and cabling resiliency
- Create cabling schematic design for ToR/EoR
- Convert into patch panel/rack layout
- Calculate the material list for ToR/EoR

Building Backbone - Commercial Building
- Backbone diagram
- Calculate the copper backbone requirements per Telecom Room (TR)
- Calculate the fibre backbone requirements per Telecom Room
- Summarize the building backbone requirements
- Recognised cables
- Backbone Patch panels
- The maximum backbone distances
- Create cabling schematic design
- Converting the schematic design into patch panel/ rack layout

Building Backbone - Data Centre
- TIA-942 based backbone topology
- TIA-942 backbone requirements
- Recognised backbone cable
- ToR/EoR/Spine and Leaf
- Backbone distance estimation
- Resiliency of backbone cable routes
- Creating cabling schematic design
- Converting the schematic design into patch panel/ rack layout
- Field and Fusion Termination for fibre connectors
- Pre-terminated fibre trunk and copper cables

Architectural Considerations
- ANSI/TIA569-D Cable pathway and spaces
- Common requirements for the rooms
- Definition of the rooms
- Entrance Room/Demarcation
- Ceiling and floor pathways types
- Cable trays/basket/ladder/conduit
- Inner duct/sleeve/slot
- Calculating of pathway size
- Cable run best practices
- Cable management/AIM
- Grounding and bonding
- Separation distance requirements for copper cabling to power cabling
- Fire stopping
- Fire rated barrier
- Fire rated jacket cable

Campus / Outdoor Backbone
- Common campus cable installation and cable types : Aerial cable / Direct-buried / Underground in-conduit
- Outdoor cable installation planning
- Lightning / surge protection
- Approved ground for surge protector
- Creating a schematic diagram
- Converting a schematic into a physical layout

Site Inspection and Testing
- Visual site inspection notes
- Installation common issues
- Copper testing standard
- Permanent link / Channel / Patch cord / MPTL testing configuration
- Fibre connectors
- Fibre testing standard
- Tier 1 & 2 certification
- Fibre link definition
- Fibre testing steps
- Fibre inspection and cleaning
- Calibrating the test sets - 3 methods
- Setting up mandrel for testing
- Fibre loss budget calculation
- G.657 Bend insensitive fibre
- Optical Time-Domain Reflectometer (OTDR)

EXAM: Certified Network Cabling Design Professional

Delivery Structure and Methods

The CNCDP® course is lectured by an EPI Certified Instructor using a combination of lectures and question-and-answer sessions to discuss participants' specific needs and challenges experienced in their own aa environments. Participants are able to tap into the extensive experience of the trainer enabling them to validate and improve their own environments thus adding tremendous business value. CNCDP® course is available in the following delivery methods:

- ILT – Instructor Led Training
- VILT – Virtual ILT
- TOD – Training On Demand

Examination

The exam is a 60-minute closed book exam, with 40 multiple-choice questions. The candidate requires a minimum of 27 correct answers to pass the exam.

Certification

Candidates who successfully pass the exam will receive the official 'Certified Network Cabling Design Professional' certificate. The certification is valid for three years after which the student needs to re-certify.

Global Accreditation & Recognition

The CNCDP® course is accredited by EXIN, which is a global, independent and not-for-profit accreditation and examination provider. EXIN's mission is to improve the quality of the IT and data centre sectors, the proficiency of IT and data centre professionals and the IT users, by means of accreditation of course material as well as independent examination and certification.
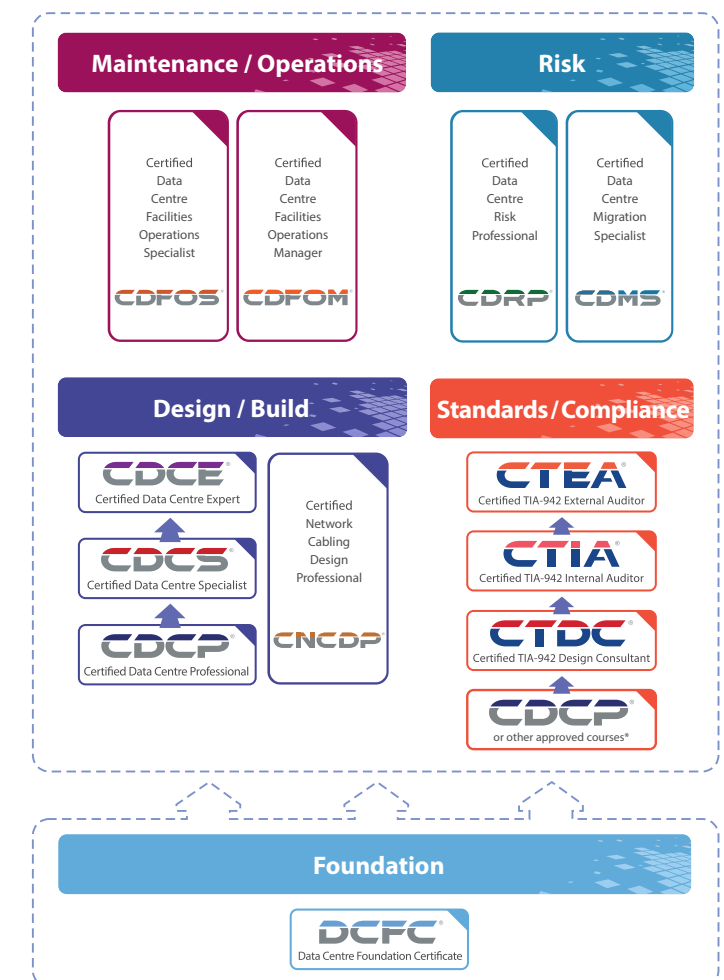
Recommended Next Course

To further extend your skills, we recommend the CDCP® training. CDCP® exposes participants to the key components of the data centre design and design improvements.

Course Schedule

Our courses are available in over 60 countries. The classes are availble on public schedule as well as private group training. Visit www.epi-ap.com or contact your local authorised reseller/partner.

EPI Data Centre Training Framework©

The **EPI Data Centre Training Framework©** provides a structured course curriculum for individuals working in and around data centre facilities and data centre operational management. It addresses the various disciplines required to design and manage a high-availability, efficient data centre. EPI's data centre course curriculum is not only the first in the world, it is also by far the largest in the industry. Many companies have specified these courses as prerequisites for their staff working in and around the data centre and use them as part of their career planning initiatives. Recognised globally, these certifications add value to both companies and individuals.

Maintenance / Operations
- Certified Data Centre Facilities Operations Specialist — CDFOS
- Certified Data Centre Facilities Operations Manager — CDFOM

Risk
- Certified Data Centre Risk Professional — CDRP
- Certified Data Centre Migration Specialist — CDMS

Design / Build
- Certified Data Centre Expert — CDCE
- Certified Data Centre Specialist — CDCS
- Certified Data Centre Professional — CDCP
- Certified Network Cabling Design Professional — CNCDP

Standards / Compliance
- Certified TIA-942 External Auditor — CTEA
- Certified TIA-942 Internal Auditor — CTIA
- Certified TIA-942 Design Consultant — CTDC
- CDCP or other approved courses*

Foundation
- Data Centre Foundation Certificate — DCFC