Szkolenie: HPE

Certified Network Cabling Design Professional (CNCDP®) Training with Exam

Cel szkolenia:

This course provides in-depth knowledge needed to design and install the data network cabling system, which includes key subject matters such as technical standards, design of different cabling sub-systems, calculation of material requirements, architecture, installation, testing and acceptance. This course prepares students for the Certified Network Cabling Design Professional exam.

Course objectives

After completion of the course, participants 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 centers
- 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

Audience

The primary audience for this course is any IT, facilities or data center professional or consultant, or anyone who works in network cabling system design, implementation and operation**.**

Plan szkolenia:

- Introduction to Structured Cabling System (SCS)
  - Brief history of SCS
  - Basic copper and fiber transmission
  - Copper and fiber cabling
  - Single and multimode fiber

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- Step/graded index multimode fiber
- Difference between commercial wiring and data center cabling
- Development of standards
- Role of standards
- ANSI/TIA 568 standard
- Common standards
- The new usage of cabling to support smart buildings

- 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 Center
  - Standard diagram recap: TIA-942
  - Basic/reduced/typical data center setup
  - Traditional 3 layer network design/spine and leaf network design
  - Select termination hardware
  - Administration design
  - ToR/EoR/spine and 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 fiber backbone requirements per telecom room
  - Summarize the building backbone requirements
  - Recognized cables
  - Backbone patch panels

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- The maximum backbone distances
- Create cabling schematic design
- Converting the schematic design into patch panel/rack layout

- Building Backbone - Data Center
  - TIA-942-based backbone topology
  - TIA-942 backbone requirements
  - Recognized 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 fiber connectors
  - Pre-terminated fiber 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

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- 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
  - Fiber connectors
  - Fiber testing standard
  - Tier 1 and 2 certification
  - Fiber link definition
  - Fiber testing steps
  - Fiber inspection and cleaning
  - Calibrating the test sets - 3 methods
  - Setting up mandrel for testing
  - Fiber loss budget calculation
  - 657 bend insensitive fiber
  - Optical Time-Domain Reflectometer (OTDR)

Wymagania:

There is no specific prerequisite for this course. However, participants who have at least one or two years of experience in an IT, data center or facilities environment may be best suited. Those with no experience are welcome to participate.

Poziom trudności



Certyfikaty:

Candidates who successfully pass the exam will receive the official ‘Certified TIA-942 Design Consultant’ certificate. The certification is valid for three years after which the candidate needs to re-certify.

Prowadzący:

Authorized HPE Trainer.

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Informacje dodatkowe:

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

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