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College

Kannegieter College provides the most relevant and real life Data Centre courses available in Europe. The courses are led by Barry Elliott or Matt Flowerday, the well-known experts on Data Centres. Using their practical experience derived from designing and auditing computer rooms and Data Centres this 3-day course focuses on the best practices in the specification, sizing and design of computer rooms and Data Centres and their power, cooling, communication, fire and security systems.
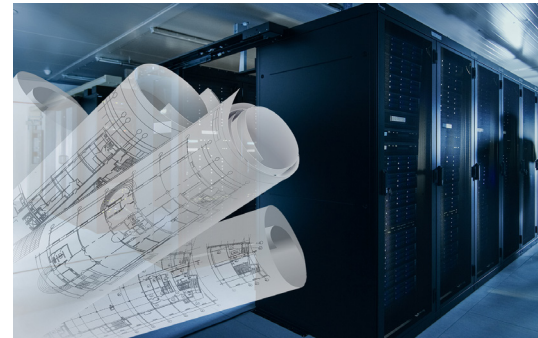
Who should take this course

- IT managers and directors
- Data centre managers and directors
- Facilities managers
- Engineers and consultants involved in data centre specifications

Prerequisites

There are no formal prerequisites for the course but attendees should be familiar with general IT and engineering practices.

What will you learn?

This comprehensive data centre design course covers everything from defining the best rack layout for your computer room to understanding the size of the UPS and generator required to provide back-up power. You will learn how cooling systems work, which cooling system is best for your facility and what capacity it needs to be. Data centre design and auditing is what our instructors do when they are not training. If you have a question they will have the answer.

Course content

- Introduction to data centers.
    - What is a Data Centre?
    - Limiting factors on design
    - Technical Standards
    - What will it cost?
    - Ratings, Tiers and Classes for reliability
    - Data Centre Efficiency – PUE
- Building a new data centre.
    - The steps in the process of building a new data centre
    - The role of the designer
    - Where most of the money goes
    - The importance of handover documentation and commissioning
- IT systems.
    - The basic building blocks of the IT systems and their function
    - How changing technology affects design
    - Differences between Telecoms Equipment and IT (Data) Equipment
    - Principles for improving cooling efficiency of the IT equipment

cursuscode
KCO 0500

DCD | Certified Data Centre Design Course

Course content

- Spaces and places.
  - Ideal locations
  - Engineered spaces needed for a data centre
  - Architectural requirements
  - Sizing the computer room from an IT requirement
  - Calculating floor strength
  - Room heights
  - Access and DDA requirements
  - Fire escapes and emergency lighting
  - Other facilities management issues
- Raised access floors.
  - Calculating floor strength
  - Distributed and point loads
  - Standards
  - Correct sealing
  - Calculating floor heights
  - Zinc whisker contamination
- Racks and computer room layouts.
  - Hot and cold aisle concept
  - 7 and 8 tile pitch models
  - Server and communications racks
  - 2 and 4 post designs
- Air-conditioning.
  - Air conditioning and cooling principles
  - Laws of thermodynamics
  - Precision v comfort cooling
  - Available technologies
  - DX v central chiller options
  - Dry cooler
  - ASHRAE, TIA and CIBSE requirements
  - Low humidity problems
  - Ventilation and filtration requirements
  - New TUI Tier definitions of cooling
  - Energy saving techniques e.g. dry cooler, air economiser, water economiser
  - Solar thermal gain
  - How to calculate heat loads and aircon sizing
  - kW v tons v BTU of cooling
  - How much heat comes from IT equipment
  - Hot aisle/cold aisle options
  - Enclosed cold and hot aisles
  - Other rack cooling options
  - Side to side cooling for large Cisco switches
  - Water cooled racks
  - CO_2 cooled racks
  - Spot cooling
  - Air flow calculations
  - Rating, Tiering, Class requirements
  - CFD analysis

Course content

- Power.
    - EN50600/TIA942 & N, N+1 and 2N power models
    - EU Code of Conduct requirements
    - AC v DC
    - Power, kW and kVA
    - Power factor issues
    - Single v 3 phase distribution
    - Rating, Tier and Class 1-4 models
    - Calculate power needs: UPS and generator sizing
    - UPS options: Off-line, on line dual conversion, delta, transformerless, Battery and kinetic energy systems
    - Emergency Power Off requirements
    - Power Distribution units
- Earthing, grounding and bonding.
    - European, USA and world standards
    - EN 50310 and TIA 607
    - Grounding bars
    - Equipotential bonding
    - Signal reference grids
- Fire systems.
    - Fire safety plans
    - Fire detection methods
    - Aspirating smoke detection (VESDA)
    - Integrating fire, BMS, HVAC and power systems
    - Fire suppression techniques
    - Inert gas v halocarbon techniques
    - Water mist and low oxygen (hypoxic) methods
    - Low risk fire cabling (US and European)
- Security.
    - Security Standards
    - CCTV methods
    - Access control
    - Physical security measures
- IT cabeling systems.
    - Evolution of computers, LANs and cabling
    - International cabling standards
    - Definitions of Cat 3, Cat5, Cat6, Cat6A and Cat 7
    - Cabling Components
    - High Speed Networking
    - Defining screened and unscreened (shielded and unshielded) cables
    - Cable sizes
    - Copper & Fibre connectors and patch panels
    - Pre-terminated cabling solutions
    - Fibre Optics
    - Matching LANs to cables
    - Defining optical fibres e.g. OM3, OM4 etc
    - Latest OM4 and OS2 fibres
    - Advantages of optical fibre
    - Value engineering cable and LAN plant
    - Cabling System Design
    - 2, 3 and 4 connector systems

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Course content

- IT cabeling systems.
  - The ISO 11801 hierarchical model
  - Intelligent patching options
  - Rating and Class 1 -4 requirements
  - Different cabling models
  - Best generic designs
  - US v EU standards and terminology
- Cable containment.
  - Separation of services to EU and USA standards
  - Calculating fill factors
  - Cable containment options
  - Effect of different cable sizes
  - Fire stopping
- Monitoring systems DCIM and BMS
  - BMS Vs DCIM
  - System costs
  - Key functions of BMS and DCIM
  - Key implementation considerations

Get certified

If you complete this DCD data centre design course and pass the exam you will be awarded a certificate and the right to use the DCD logo and the DCD designation after your name whilst your certificate is valid.

Praktische informatie

Kosten
€ 2145,-

Studieduur
3 dagen

Lestijd
09.00 - 17.00 uur

Lesplaatsen
Amersfoort of Brussel

Minimale groepsgrootte
6 personen

Bezoek onze website voor meer informatie over actuele cursusdata. Inschrijven kan via het online inschrijfformulier.

Cursus op maat
Kannegieter College kan deze cursus incompany verzorgen op elke gewenste locatie in Nederland of België.

Op al onze cursussen zijn de Algemene Leverings- en Betalingsvoorwaarden van Kannegieter BV van toepassing evenals de Algemene Voorwaarden van Kannegieter College.

cursuscode
KCO 0500