

DCT MICRO DATA CENTRE

DESIGN, INSTALL AND CONFIGURE

Duration: 3 Days

Course Code: DCT MDC-DIC

Overview:

DCT MDC-DIC is a 3-day training course aimed at providing foundational knowledge about Micro Data Centre facilities infrastructure. This course aims to equip participants with a global overview and essential knowledge about Micro Data Centres, empowering those aspiring to enter the Micro Data Centre, Colo Data Centres, ICT infrastructure, or mechanical and electrical (M&E) design industries. The course intends to lay a solid foundation for individuals looking to pursue further studies, either academically or through specialized professional certification courses in Micro Data Centre design/build, operations/governance, or standards/compliance.

Given the rapid growth of data and the subsequent need for Micro Data Centres, the demand for skilled Micro Data Centre professionals is expected to rise significantly. This course aims to prepare participants for potential career opportunities in this growing field by exposing them to the key micro data centre components such as Power, cooling, security, and safety practices.

Target Audience

The primary audience for this course is any IT, facilities, or data center professionals who work with server rooms, data centers and who are tasked with ensuring and enhancing the availability and manageability of server room or data centre environments.

Objectives:

- Provide a comprehensive overview of micro data centres, their components, and their critical role in modern technological ecosystems.
- Educate participants about the rapid growth and evolution of the micro data centre industry, highlighting potential business opportunities and the industry's significance in the digital age.
- Describe the various technologies for UPS, fire suppression, cooling, and monitoring systems, and how to select and apply them efficiently to cost-efficiently enhance the high availability of the Micro Data Centre.
- Describe how to design a micro data centre setup based on current and future IT load needs.

Pre-requisite

There are no specific prerequisites for the DCT- DIC course.

Those with one or two years of experience in a data center or facilities setting may find the course especially advantageous. However, individuals without prior experience are encouraged to join and acquire valuable insights into the micro data center industry.

Course Content (Includes DCT Essentials)

1. Introduction to Micro Data Centres

- History of Micro Data Centres
- Definition of different types of Micro Data Centres
- Benefits of Micro Data Centres in Edge Computing
- Edge Micro Data Centre and its Relation to Business
- Micro Data Centre Application Areas

2. Micro Data Centre Standards

- List of standards
- Rating definitions

3. MDC Topology Designs

- Single Rack MDC
- Multi-Rack MDC
- Outdoor IP55/66 MDC
- Containerized solution

4. MDC Power Infrastructure

- Power Sources to a Micro Data Centre
 - Utility power
 - Generator power
 - Solar Power with Hybrid Inverters
- UPS systems and Batteries
 - IT Power load calculations
 - VLRA and Lithium Batteries
 - UPS design topologies
- ATS
 - Automatic Transfer Switch deployment scenarios
- Power Cables and Busbar systems
- Power distribution board, rails/strips
- Basic, Metered, and Intelligent PDUs.

5. MDC Lighting

- In-rack Lighting
- Strip indicator lights for visual in-rack operation status

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6. MDC Cooling Infrastructure

- Differences between comfort and precision cooling
- DX cooling Systems
 - Rack Mounted Cooling that is integrated and split type.
 - In-row Cooling
- Cooling requirements calculations
- Emergency MDC cooling considerations and options

7. ICT/Network Infrastructure

- Equipment racks
 - usable space for IT appliances
- Network cabling (fiber, copper)
- Cable trays and pathways

8. Micro Data Centre Security

- Physical protection
- CCTV
- Access control
- Security management

9. Fire Suppression

- Detection systems
- Suppression systems
- Prevention systems
- Fire extinguishers
 - Rack Mount standalone type
 - EMS integrated type.
- Fire Safety

10. Monitoring and Reporting

- Monitoring considerations and requirements
- DCIM / EMS
- Alarm notification
 - Visual, Audio, Relay signals, SMS, EMAIL, App
- Logs and reports

LABS

- Design and Assemble a Micro Data Centre Cabinet.
- Install all the components into the cabinet.
- Configure the components to the corresponding DCIM interfaces.
- Power on and test the working of the MDC components.