DCT DATA CENTER POWER

Duration: 5 Days | **Course Code: DCT-DC-PWR**

Overview:

The DCT Data Center Power course dives more deeply into the electrical and power systems and components that support data centers. With data centers using about 5% of the world's energy and growing, these power systems are ever-expanding and improving. The Course covers the many aspects of the most typical electrical systems and equipment for data centers, including terminology, standards, acronyms, operation, efficiency, and more.

Target Audience:

- Architects
- Engineering design professionals
- Facilities operations
- Contractors
- Technicians
- Electrical engineers, technicians, operators

Objectives:

- Introduction to data center electrical and power systems.
- Redundancy concepts for electrical distribution and equipment.
- Understanding of electrical equipment, systems, and controls
- How differing priorties and data center types change the electrical design

Pre-requisite

- Basic understanding of data centers, layouts, and common terms.

Course Outline (Incudes DCT Essentials)

1. Introduction to Data Center
2. Data center Power Requirements
3. Power units - VA, W and VAR - Power Triangle
4. DC and AC systems power supply systems
5. Power flow in Data Center and Mission Critical Systems
6. Sizing of Data Center Power & Critical Systems
7. Electrical Codes and Standards for Data Centers
8. Power Topologies - single phase vs three phase
9. & AC and DC Power Supply
10. Sources of ElectricalPower - Gensets, Utility, Solar, Nuclear etc
11. Electrical Conductors, Cables, Cable trays and conduits
12. Types of Cables and Conductors
13. Sizing of Data Center cables and conductors
14. Cables trays and cable trunkings
15. Cable conduits - PVC and Metallic
16. Power Protection Devices
17. Circuit breakers, Fuses, Relays, Isolators, Switches sizing
18. Voltage Regulation and Stablization devices
19. Line diagrams and electrical power layout drawings
20. Lightning Arrestor
21. Power Distribution
22. Power Distribution in data center
23. Switch room Switch gear and devices
24. Distribution Panels and Boards
25. Critical vs Raw power distribution standards
26. Floor vs Overheard Power Distribution
27. Rack Power Distribution - PDUs
28. EPO Guidelines and Layout
29. Transformers
30. ATS and MBS systems
31. Power factor correction systems & Surge Suppression systems
32. PUE
33. Data Center energy efficiency and power efficiency
34. Measuring, Monitoring & Routine Checks
35. Trends in Data Center Power Systems
36. Standby Power Systems
37. UPS systems

DCT DATA CENTER POWER

Duration: 5 Days

Course Code: DCT-DC-PWR

Course Outline (Incudes DCT Essentials)

37. UPS systems
38. What is a UPS system?
39. Types of UPS system
40. Sizing of UPS systems
41. UPS Components: Batteries , UPS Room, SNMP etc
42. UPS Configurations - Parallel and Eco Modes
43. Redundancy Systems and Topologies N, N+1, 2(N+1)
44. Generators
45. Generators room specifications
46. Fuel Management
47. Earthing, and Grounding Bonding
48. Lighting
49. Operation and Maintenance of Power Equipments
50. Electrical system maintenance on the following - UPS, Batteries, PDUs, Transformers, Switchboards, Switchgears,
51. SNMP and IoT in DC Maintenance