

DCT Data Center Cooling

Program Duration:

5 Days

Program Objectives

- Introduction to data center cooling and mechanical systems.
- Redundancy concepts for mechanical and cooling systems.
- Understanding of mechanical & plumbing systems and control.
- How differing priorities, locations, and more change the cooling design



Target Audience

- Architects
- Engineering design professionals
- Facilities operations
- Contractors
- Technicians
- Mechanical engineers

Pre-requisites

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

Program Overview

The DCT Data Center Cooling course, covers the mechanical cooling systems that support data centers and prevent them from overheating. As the data center power and density has increased every year, the need to remove the heat generated has become a more important factor for the design and operation of the facility.

Data Centre Cooling Course Outline (Include DCT Essentials)

1. Introduction: Concepts, definitions
2. The need for cooling
3. Heat Transfer
4. Heat gains
5. Temperature and humidity requirements
6. Ventilation rates
7. Air quality
8. Cooling loads
9. HVAC equipment
10. Data center cooling systems
11. Basics of how cooling systems work
12. Operating conditions - the typical mechanical terms, cooling operations, and redundancy levels
13. Air cooling solutions - air cooling and operating parameters for typical datacenters
14. Computational Fluid Dynamics - what it is, how these tools are used, and what to look for when analyzing a data center flow model
15. Types of Datacenter cooling systems
16. Air Cooling
17. Direct Liquid Cooling
18. Cooling Equipment types
19. Direct Expansion Systems relationship
20. Chiller based cooling
21. Air management and control systems
22. Raised Floor cooling
23. Non-raised floor cooling
24. Aisle containment
25. Hot aisle
26. Cold aisle
27. Operating the data center cooling systems
28. Reliability and Risk mitigation
29. Recommendations and Best practices
30. Measuring, monitoring, and routine checks
31. HVAC efficiency and Power Usage Effectiveness (PUE) relationship