Certified Data Centre Expert

Course Duration: 40 Hours **Course code: CDCE**

1. Course Overview

This course is designed to provide participants with advanced knowledge and expertise in designing, managing, and optimizing modern data center infrastructures. It focuses on best practices, high availability, disaster recovery, security, sustainability, and strategic planning to ensure operational excellence.

2. What you'll learn?

By the end of this course, participants will be able to:

- Design scalable and resilient data center infrastructures
- Implement high availability, redundancy, and disaster recovery solutions
- Manage power, cooling, and environmental systems efficiently
- Ensure data center security and compliance with industry standards
- Plan for energy efficiency and sustainability initiatives
- Lead large-scale data center projects and manage operations teams
- Evaluate emerging technologies and trends in data center management

3. Target Audience

- Senior IT infrastructure engineers and architects
- Data center managers and operators
- Facilities and operations managers
- Professionals responsible for enterprise-level data center planning and management

4. Pre-Requisites

Familiarity with:

- Data center operations and infrastructure
- Networking, storage, and virtualization technologies
- Power, cooling, and physical infrastructure management

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- IT service management and security concepts

5. Course content

Module 1: Course Introduction

- Introduction and objectives
- Course contents and roadmap
- References and resources

Module 2: Advanced Data Center Infrastructure

- Data center tiers and classifications (Tier I-IV)
- Design principles for scalable and resilient infrastructure
- Physical layout planning and optimization

Module 3: Power and Electrical Systems

- High availability power architectures
- UPS systems, generators, and backup power
- Power distribution and monitoring
- Energy efficiency best practices

Module 4: Cooling and Environmental Management

- HVAC systems and precision cooling
- Hot/cold aisle containment
- Environmental monitoring and automation
- Sustainable cooling solutions

Module 5: Networking and Connectivity

- High-speed LAN/WAN connectivity
- Redundant network architectures
- Network security and segmentation
- Data center interconnects and cloud integration

Module 6: Storage and Virtualization Management

- Enterprise storage solutions
- Virtualization technologies and hyperconvergence
- Storage redundancy and disaster recovery
- Performance optimization

Module 7: Security and Compliance

- Physical security: access control, CCTV, and alarms
- Cybersecurity best practices
- Regulatory compliance (ISO 27001, SOC, etc.)
- Risk assessment and mitigation

Module 8: Data Center Operations and Monitoring

- Monitoring tools and dashboards
- Incident management and root cause analysis
- Capacity planning and lifecycle management
- Operational efficiency metrics

Module 9: Disaster Recovery and Business Continuity

- DR planning and strategies
- Backup and replication techniques
- Testing and validation of DR plans
- Recovery Time Objective (RTO) and Recovery Point Objective (RPO) planning

Module 10: Project Management and Leadership

- Leading data center projects
- Budgeting, resource allocation, and vendor management
- Change management and operational readiness
- Team leadership and strategic decision-making

Module 11: Sustainability and Green Data Centers

- Energy-efficient design principles

- Renewable energy integration
- Carbon footprint reduction strategies
- Green certifications and compliance

Module 12: Course Wrap-Up and Certification Preparation

- Summary of key concepts
- Case studies and real-world scenarios
- Exam tips and preparation strategies
- Future trends and emerging technologies in data center management