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المركز العالمي للتدريب والتطوير

International Centre For Training & Development

Data Center Infrastructure and Operations Specialist

Course Introduction:

The rapid growth of digital technologies has made data centers the backbone of modern businesses, enabling continuous access to vital information and services. A well-managed and resilient data center infrastructure is critical for ensuring optimal performance, energy efficiency, and security. This 5-day training program for Data Center Infrastructure and Operations Specialists is designed to provide participants with comprehensive knowledge and practical skills to effectively design, manage, and maintain data center environments.

Course Objectives:

By the end of the training, participants will be able to:

- Understand the components and architecture of data center infrastructure
- Learn best practices for managing power, cooling, and environmental systems
- Gain knowledge of network infrastructure design and optimization
- Develop strategies for maintaining data center security and uptime
- Understand disaster recovery and business continuity planning for data centers
- Explore emerging trends and technologies in data center management

Who Should Attend?

This course is designed for all:

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- Data center managers and operations specialists
- IT infrastructure professionals
- Network engineers and administrators
- Facility managers responsible for IT environments
- Professionals involved in data center design, maintenance, or optimization

Course Outline:

Introduction to Data Center Infrastructure

- Understanding Data Center Architecture
    - Key components of data center infrastructure
    - Types of data centers (enterprise, colocation, edge)
- Power and Cooling Systems Overview

- UPS systems, generators, and power distribution units
- Cooling technologies and environmental management

Network Infrastructure and Connectivity

- Network Design Principles
  - Topologies, cabling, and routing protocols
  - Redundancy and load balancing strategies
- Data Center Network Security
  - Firewalls, intrusion detection, and segmentation
  - Securing physical and virtual networks

Operations and Maintenance Best Practices

- Monitoring and Performance Optimization
  - Tools for real-time monitoring and analytics
  - Proactive maintenance strategies
- Documentation and Change Management
  - Standard operating procedures (SOPs)
  - Managing upgrades and changes

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Security, Risk Management, and Compliance

- Physical and Environmental Security
  - Access control systems and surveillance
  - Environmental hazard mitigation
- Risk Assessment and Compliance
  - Industry standards and regulatory requirements (ISO, TIA-942)
  - Conducting security audits

Disaster Recovery and Emerging Trends

- Disaster Recovery and Business Continuity
  - Backup strategies and redundancy planning

- Incident response and recovery procedures

- Emerging Trends and Future Technologies
  - Edge computing, AI, and green data centers
  - Evolving best practices for sustainability

Course Methodology:

A variety of methodologies will be used during the course that including:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

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Course Certificate:

International Center for Training & Development (**ICTD**) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Fees:

To be advised as per course location. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session

10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session

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