



MS SQL Server 2016- Administering Database



INTERNATIONAL ASSOCIATION FOR
HEALTH AND OCCUPATIONAL
SAFETY AND THE ENVIRONMENT



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Course Introduction:

This course is designed to provide participants with a thorough understanding of the administration and management of SQL Server 2016 databases. As organizations increasingly rely on data-driven decision-making, the role of database administrators (DBAs) has become vital in ensuring data availability, security, performance, and reliability. This five-day course will cover essential topics such as installation, configuration, security management, backup and recovery, and performance tuning.

Participants will engage in theoretical discussions and case studies, allowing them to grasp key concepts and practices that are critical for effective database administration. By the end of the course, attendees will have the skills and knowledge necessary to manage SQL Server databases effectively, ensuring optimal performance and compliance with organizational standards.

Course Objectives:

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

- Understand the architecture and components of SQL Server 2016.
- Implement security measures for user management and access control.
- Develop effective backup and recovery strategies for databases.
- Optimize database performance using tuning techniques and tools.
- Implement high availability and disaster recovery solutions.

المركز العالمي للتدريب والتطوير
International Centre For Training & Development

Who Should Attend?

This course is intended for:

- Database administrators (DBAs) responsible for managing SQL Server databases.
- IT professionals involved in database administration and support.
- System administrators seeking to enhance their database management skills.
- Developers looking to understand database administration concepts.
- Data analysts and business intelligence professionals working with SQL Server.

Course Outline:

Day 1: Introduction to SQL Server 2016

- Overview of SQL Server architecture and components
- Installation and configuration of SQL Server 2016
- Understanding SQL Server Management Studio (SSMS)
- Navigating the SQL Server environment and tools

Day 2: Database Security and User Management

- Implementing security best practices in SQL Server
- Managing logins, roles, and permissions
- Understanding authentication modes: Windows vs. SQL Server
- Auditing and monitoring security policies

Day 3: Backup and Recovery Strategies

- Importance of backup and recovery in database management
- Types of backups: full, differential, and transaction log backups
- Implementing backup strategies and scheduling
- Performing database recovery: point-in-time recovery and restore options

Day 4: Performance Tuning and Optimization

- Monitoring SQL Server performance and identifying bottlenecks
- Understanding execution plans and query optimization
- Indexing strategies for improved performance
- Tools and techniques for performance tuning

Day 5: High Availability and Disaster Recovery

- Overview of high availability options: Always On, clustering, and replication
- Implementing disaster recovery plans and strategies
- Understanding database mirroring and log shipping
- Best practices for maintaining database availability

Course Methodology:

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

- (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

Course Fees:

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

Course Certificate:

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

Course Timings:

Daily Course Timings:

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|---------------|----------------------------|
| 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 |