



# MS SQL Server 2016

## Administering a SQL Database Infrastructure

(Course 20764-C)

### Course Objective :

The five-day course provides students with the knowledge and skills to develop a Microsoft SQL Server database. This course focuses on the utility of SQL server product features and tools related to developing a database.

Upon completion of the course, students will be able to design and implement tables, views, stored procedures and functions; ensure data integrity through constraints; respond to data manipulation using triggers and implement managed codes.

### Prerequisite

Participants should have :

- Basic knowledge of Microsoft operating system and its core functionality
- Working knowledge of Transact-SQL
- Working knowledge of relational databases
- Some experience with database design

### Training Methodology & Materials:

- Practical hands-on sessions, 70% lab-based and 30% theory-based.
- Additional and well-designed labs handouts are given to enhance further enhance the courseware given.

### Certificate Of Attendance :

e-Certificate Of Attendance will be awarded to participants completing the course achieving minimum 75% attendance.

### Training Duration:

Full-Time : 5 Weekdays  
Time : 9.30am – 5.30pm

### Course Fee:

Normal Course Fee : S\$2500  
Regn Fee : S\$50

All fees subject to prevailing GST. Fees exclude Microsoft Exam.

## DETAILED COURSE OUTLINE

### **Module 01: SQL Server Security**

- Authenticating Connections to SQL Server
- Authorizing Logins to Connect to databases
- Authorization Across Servers
- Partially Contained Databases

### **Module 02 : Assigning Server and Database Roles**

- Working with server roles
- Working with Fixed Database Roles
- Assigning User-Defined Database Roles

### **Module 03: Authorizing Users to Access Resources**

- Authorizing User Access to Objects
- Authorizing Users to Execute Code
- Configuring Permissions at the Schema Level

### **Module 04 : Protecting Data with Encryption and Auditing**

- Options for auditing data access in SQL Server
- Implementing SQL Server Audit
- Managing SQL Server Audit
- Protecting Data with Encryption

### **Module 05: Recovery Models and Backup Strategies**

- Understanding Backup Strategies
- SQL Server Transaction Logs
- Planning Backup Strategies

### **Module 06: Backing Up SQL Server Databases**

- Backing Up Databases and Transaction Logs
- Managing Database Backups
- Advanced Database Options

### **Module 07: Restoring SQL Server 2016 Databases**

- Understanding the Restore Process
- Restoring Databases
- Advanced Restore Scenarios
- Point-in-Time Recovery

### **Module 08: Automating SQL Server Management**

- Automating SQL Server management
- Working with SQL Server Agent
- Managing SQL Server Agent Jobs
- Multi-server Management

**Module 09: Configuring Security for SQL Server Agent**

- Understanding SQL Server Agent Security
- Configuring Credentials
- Configuring Proxy Accounts

**Module 10: Monitoring SQL Server with Alerts and Notifications**

- Monitoring SQL Server Errors
- Configuring Database Mail
- Operators, Alerts, and Notifications
- Alerts in Azure SQL Database

**Module 11: Introduction to Managing SQL Server by using PowerShell**

- Getting Started with Windows PowerShell
- Configure SQL Server using PowerShell
- Administer and Maintain SQL Server with PowerShell
- Managing Azure SQL Databases using PowerShell

**Module 12: Tracing Access to SQL Server with Extended events**

- Extended Events Core Concepts
- Working with Extended Events

**Module 13: Monitoring SQL Server**

- Monitoring activity
- Capturing and Managing Performance Data
- Analyzing Collected Performance Data
- SQL Server Utility

**Module 14: Troubleshooting SQL Server**

- A Trouble Shooting Methodology for SQL Server
- Resolving Service Related Issues
- Resolving Connectivity and Log-in issues

**Module 15: Importing and Exporting Data**

- Transferring Data to and from SQL Server
- Importing and Exporting Table Data
- Using bcp and BULK INSERT to Import Data
- Deploying and Upgrading Data-Tier Application

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