

## “MCSA:SQL 2016 Database Administration ”

*Course 20765C: Provisioning SQL Databases*

### Module 1: SQL Server Components

- Introduction to the SQL Server Platform
- Overview of SQL Server Architecture
- SQL Server Services and Configuration Options

### Module 2: Installing SQL Server Considerations for SQL Installing Server

- TempDB Files
- Installing SQL Server
- Automating Installation

### Lab : Installing SQL Server

### Module 3: Upgrading SQL Server to SQL Server 2017

- Upgrade Requirements
- Upgrade SQL Server Services
- Side by Side Upgrade: Migrating SQL Server Data and Applications

### Lab : Upgrading SQL Server

### Module 4: Working with Databases

- Introduction to Data Storage with SQL Server
- Managing Storage for System Databases
- Managing Storage for User Databases
- Moving and Copying Database Files
- Buffer Pool Extension

### Lab : Managing Database Storage

### Module 5: Performing Database Maintenance

- Ensuring Database Integrity
- Maintaining Indexes
- Automating Routine Database Maintenance

### Lab : Performing Database Maintenance

### Module 6: Database Storage Options

- SQL Server storage Performance

- SMB Fileshare
- SQL Server Storage in Microsoft Azure
- Stretch Databases

Lab : Implementing Stretch Database

Module 7: Planning to Deploy SQL Server on Microsoft Azure

- SQL Server Virtual Machines in Azure
- Azure Storage
- Azure SQL Authentication
- Deploying an Azure SQL Database

Lab : Plan and Deploy an Azure SQL Database

Module 8: Migrating Databases to Azure SQL Database

- Database Migration Testing Tools
- Database Migration Compatibility Issues
- Migrating a SQL Server Database to Azure SQL Database

Lab : Migrating SQL Server Databases to Azure

Module 9: Deploying SQL Server on a Microsoft Azure Virtual Machine

- Deploying SQL Server on an Azure VM
- The Deploy Database to a Microsoft Azure VM Wizard

Lab : Deploying SQL Server on an Azure Virtual Machine

Module 10: Managing databases in the Cloud

- Managing Azure SQL Database Security
- Configure Azure storage
- Azure Automation

Lab : Managing Databases in the Cloud

Module 1: SQL Server Security

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

Lab : Authenticating Users

Module 2: Assigning Server and Database Roles

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

Lab : Assigning server and database roles

Module 3: Authorizing Users to Access Resources

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

Lab : Authorizing users to access resources

Module 4: 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

Lab : Using Auditing and Encryption

Module 5: Recovery Models and Backup Strategies

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

Lab : Understanding SQL Server recovery models

Module 6: Backing Up SQL Server Databases

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

Lab : Backing Up Databases

Module 7: Restoring SQL Server 2016 Databases

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

Lab : Restoring SQL Server Databases

Module 8: Automating SQL Server Management

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

Lab : Automating SQL Server Management

Module 9: Configuring Security for SQL Server Agent

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

Lab : Configuring Security for SQL Server Agent

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

Lab : Monitoring SQL Server with Alerts and Notifications

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

Lab : Using PowerShell to Manage SQL Server

Module 12: Tracing Access to SQL Server with Extended events

- Extended Events Core Concepts
- Working with Extended Events

Lab : Extended Events

Module 13: Monitoring SQL Server

- Monitoring activity
- Capturing and Managing Performance Data
- Analyzing Collected Performance Data

- SQL Server Utility

Lab : Monitoring SQL Server

Module 14: Troubleshooting SQL Server

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

Lab : Troubleshooting Common 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

Lab : Importing and Exporting Data

