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## Administering Microsoft® SQL Server® Databases

**Duration: 5 Days**    **Course Code: M20462**    **Version: D**    **Delivery Method: Virtual Learning**

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### Overview:

This five-day instructor-led course provides students with the knowledge and skills to maintain a Microsoft SQL Server 2014 database. The course focuses on teaching individuals how to use SQL Server 2014 product features and tools related to maintaining a database. Note: This course is designed for customers who are interested in learning SQL Server 2012 or SQL Server 2014. It covers the new features in SQL Server 2014, but also the important capabilities across the SQL Server data platform.

### Virtual Learning

This interactive training can be taken from any location, your office or home and is delivered by a trainer. This training does not have any delegates in the class with the instructor, since all delegates are virtually connected. Virtual delegates do not travel to this course, Global Knowledge will send you all the information needed before the start of the course and you can test the logins.

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### Target Audience:

The primary audience for this course is individuals who administer and maintain SQL Server databases. These individuals perform database administration and maintenance as their primary area of responsibility, or work in environments where databases play a key role in their primary job. The secondary audience for this course is individuals who develop applications that deliver content from SQL Server databases.

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### Objectives:

- Describe core database administration tasks and tools.
  - Install and configure SQL Server 2014.
  - Configure SQL Server databases and storage.
  - Plan and implement a backup strategy.
  - Restore databases from backups.
  - Import and export data.
  - Monitor SQL Server.
  - Trace SQL Server activity.
  - Manage SQL Server security.
  - Audit data access and encrypt data.
  - Perform ongoing database maintenance.
  - Automate SQL Server maintenance with SQL Server Agent Jobs.
  - Configure Database Mail, alerts and notifications.
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### Prerequisites:

- **This course requires that you meet the following prerequisites:**
  - Basic knowledge of the Microsoft Windows operating system and its core functionality.
  - Working knowledge of Transact-SQL.
  - Working knowledge of relational databases.
  - Some experience with database design.
  - **Students who attend this training can meet the prerequisites by attending the following courses, or obtaining equivalent knowledge and skills:**
  - 20461C: Querying Microsoft SQL Server 2014
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## Content:

### Module 1: Introduction to SQL Server 2014 Database Administration

- Database Administration Overview
- Introduction to the SQL Server Platform
- Database Management Tools and Techniques
- Lab : Using SQL Server Administrative Tools
- Using SQL Server Management Studio
- Using the sqlcmd Utility
- Using Windows PowerShell with SQL Server

### Module 2: Installing and Configuring SQL Server 2014

- Planning SQL Server Installation
- Installing SQL Server 2014
- Post-Installation Configuration
- Lab : Installing SQL Server 2014
- Preparing to Install SQL Server
- Installing SQL Server
- Performing Post-Installation Configuration

### Module 3: Working with Databases and Storage

- Introduction to Data Storage with SQL Server
- Managing Storage for System Databases
- Managing Storage for User Databases
- Moving Database Files
- Configuring the Buffer Pool Extension
- Lab : Managing Database Storage
- Configuring tempdb Storage
- Creating Databases
- Attaching a Database

### Module 4: Planning and Implementing a Backup Strategy

- Understanding SQL Server Recovery Models
- Planning a Backup Strategy Backing up Databases and Transaction Logs
- Using Backup Options
- Ensuring Backup Reliability
- Lab : Backing Up SQL Server Databases
- Backing Up Database
- Performing Database, Differential, and Transaction Log Backups
- Performing a Partial Backup

### Module 5: Restoring SQL Server 2014 Databases

- Understanding the Restore Process
- Restoring Databases
- Advanced Restore Scenarios
- Working with Point-in-Time Recovery
- Lab : Restoring SQL Server Databases
- Restoring a Database Backup Restoring Database, Differential, and Transaction Log Backups

### Module 6: Importing and Exporting Data

- Introduction to Transferring Data
- Importing and Exporting Table Data
- Copying or Moving a Database
- Lab : Importing and Exporting Data
- Using the SQL Server Import and Export Wizard
- Using the bcp Utility
- Using the BULK INSERT Statement
- Using the OPENROWSET Function

### Module 7: Monitoring SQL Server 2014

- Introduction to Monitoring SQL Server
- Dynamic Management Views and Functions
- Performance Monitor
- Lab : Monitoring SQL Server 2014
- Collecting Baseline Metrics
- Monitoring a Workload

### Module 8: Tracing SQL Server Activity

- Tracing SQL Server Workload Activity
- Using Traces
- Lab : Tracing SQL Server Workload Activity
- Capturing a Trace in SQL Server Profiler
- Generating Database Tuning Recommendations
- Using SQL Trace

### Module 9: Managing SQL Server Security

- Introduction to SQL Server Security
- Managing Server-Level Security
- Managing Database-Level Principals
- Managing Database Permissions Lab : Managing SQL Server Security
- Managing Server-Level Security
- Managing Database-Level Security
- Testing Database Access

### Module 10: Auditing Data Access and Encrypting Data

- Auditing Data Access in SQL Server
- Implementing SQL Server Audit
- Encrypting Databases
- Lab : Auditing Data Access and Encrypting Data
- Implementing Auditing
- Implementing Transparent Database Encryption

### Module 11: Performing Ongoing Database Maintenance

- Ensuring Database Integrity
- Maintaining Indexes
- Automating Routine Database Maintenance
- Lab : Performing Ongoing Database Maintenance
- Managing Database Integrity
- Managing Index Fragmentation
- Implementing a Maintenance Plan

### Module 12: Automating SQL Server 2014 Management

- Automating SQL Server Management
- Implementing SQL Server Agent Jobs
- Managing SQL Server Agent Jobs
- Managing Job Step Security Contexts
- Managing Jobs on Multiple Servers
- Lab : Automating SQL Server Management
- Creating a Job
- Scheduling a Job
- Configuring Job Step Security Contexts

### Module 13: Monitoring SQL Server 2014 by Using Alerts and Notifications

- Monitoring SQL Server Errors
- Configuring Database Mail
- Configuring Operators, Alerts, and Notifications
- Lab : Monitoring SQL Server by Using Alerts and Notifications
- Configuring Database Mail
- Implementing Operators and Notifications
- Implementing Alerts

### Further Information:

For More information, or to book your course, please call us on 353-1-814 8200

[info@globalknowledge.ie](mailto:info@globalknowledge.ie)

[www.globalknowledge.com/en-ie/](http://www.globalknowledge.com/en-ie/)

Global Knowledge, 3rd Floor Jervis House, Millennium Walkway, Dublin 1