

5 Days

## 20464D: Developing Microsoft SQL Server Databases

Developing Microsoft SQL Server Databases Certification course 20464 D is an expert level intensive five-day course that focuses on Developing Microsoft SQL Server 2014 databases. This course covers the essentials of creating and implementing databases such as views, stored procedures, with parameters and functions. Other tools of this course include indexing, concurrencies, error handling etc. that are a part of procedural coding.

Note\* - This training is part 1 of the series of two courses for MCSE: Data Platform for SQL Server 2014. Participants need to qualify certification for both the course exams to earn the credentials of MCSE.

### Course Details

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#### Course Outline

##### Module 1: Introduction to Database Development

This module explains the database development and the key tasks that a database developer would typically perform.

###### Lessons

- SQL Server Platform Introduction
- SQL Server Database Development Tasks

##### Module 2: Designing and Implementing Tables

This module focuses on working with schemas and explains how to design, create, and alter tables. Also it.

###### Lessons

- Designing Tables
- Creating and Altering Tables
- Data Types
- Partitioning Data
- Compressing Data
- Working with Schemas

##### Module 3: Ensuring Data Integrity through Constraints

This module focusses on implementing Entity, Referential Integrity and describes how to enforce data integrity, and implement domain integrity to maintain high-quality data.

## Lessons

- Enforcing Data Integrity
- Implementing Domain Integrity
- Implementing Entity and Referential Integrity

## Module 4: Introduction to Indexing

This module explains the concept of an index and discusses selectivity, density, and statistics.

### Lessons

- Core Indexing Concepts
- Data Types and Indexes
- Single Column and Composite Indexes

## Module 5: Designing Optimized Index Strategies

This module describes covering indexes and the INCLUDE clause as well as the use of padding, hints, and statistics. The module also covers the use of the Database Engine Tuning Advisor and index related dynamic management views to assess indexing strategies.

### Lessons

- Covering Indexes
- Managing Indexes
- Working with Execution Plans
- Using the DTE

## Module 6: Columnstore Indexes

This module describes Columnstore indexes and how to use them to maximize performance and scalability of database applications.

### Lessons

- Columnstore indexes Introduction
- Creating Columnstore Indexes
- Working with Columnstore Indexes

## Module 7: Designing and Implementing Views

This module focuses on the performance consideration for Views and describes Views, and explains how to create and manage Views.

### Lessons

- Introduction to Views
- Creating and Managing Views
- Performance Considerations for Views

## Module 8: Designing and Implementing Stored Procedures

This module explains the potential advantages of the use of stored procedures along with guidelines on creating them.

### Lessons

- [Introduction to Stored Procedures](#)
- [Implementing Parameterized Stored Procedures](#)
- [Working with Stored Procedures](#)
- [Controlling Execution Context](#)

## **Module 9: Designing and Implementing User-Defined Functions**

This module describes how to design and implement user-defined functions that enforce business rules or data consistency, and modify and maintain existing functions written by other developers.

### **Lessons**

- [Overview of Functions](#)
- [Designing and Implementing Table-Valued Functions](#)
- [Designing and Implementing Scalar Functions](#)
- [Implementation Considerations for Functions](#)
- [Alternatives to Functions](#)

## **Module 10: Responding to Data Manipulation via Triggers**

This module describes DML triggers and how they enforce data integrity.

### **Lessons**

- [Designing DML Triggers](#)
- [Implementing DML Triggers](#)
- [Advanced Trigger Concepts](#)

## **Module 11: Using In-Memory Tables**

This module describes the creation of in-memory tables and native stored procedures and explains the advantages and disadvantages of using in-memory tables.

### **Lessons**

- [In-Memory Tables](#)
- [Native Stored Procedures](#)

## **Module 12: Implementing Managed Code in SQL Server 2014**

This module describes how to use CLR integrated code to create user-defined database objects that are managed by the .NET Framework.

### **Lessons**

- [Introduction to SQL CLR Integration](#)
- [Importing and Configuring Assemblies](#)
- [Implementing SQL CLR Integration](#)

## **Module 13: Storing and Querying XML Data in SQL Server**

This module describes XML and shows how XML data can be stored within SQL Server and then queried, including queries written in a language called XQuery.

## Lessons

- Introduction to XML and XML Schemas
- Implementing the XML Data Type
- Storing XML Data and Schemas in SQL Server
- Using the T-SQL FOR XML Statement
- Getting Started with XQuery

## Module 14: Working with SQL Server 2014 Spatial Data

This module explains Spatial Data and describes how to work with SQL Server Spatial Data Types.

### Lessons

- Introduction to Spatial Data
- Using Spatial Data in Applications
- Working with SQL Server Spatial Data Types

## Module 15: Incorporating Data Files into Databases

### Lessons

- Querying Data with Stored Procedures
- Implementing FILESTREAM and File Tables
- Searching Data Files

## Who Should Attend

The primary audience for developing Microsoft SQL Server Databases course is professionals who want to gain expertise on SQL Server 2014.

The secondary audiences for this course are individuals who are developers belonging to other product platforms or previous versions of SQL Server looking forward to acquiring skills to implement a SQL Server 2014 database platform.

## Pre Requisite

This course requires that you meet the following prerequisites:

- Knowledge of writing T-SQL queries.
- Knowledge of basic relational database concepts.

# Exams

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