

## **Implementing a Microsoft SQL Server 2005 Database**

Course 2779: Five days; Instructor-Led

### **Introduction**

Elements of this syllabus are subject to change.

This five-day instructor-led course provides students with the knowledge and skills to implement a Microsoft SQL Server 2005 database. The course focuses on teaching individuals how to use SQL Server 2005 product features and tools related to implementing a database.

### **Audience**

This course is intended for IT Professionals who want to become skilled on SQL Server 2005 product features and technologies for implementing a database.

### **Prerequisites**

Before attending this course, students must have:

- 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.

### **Microsoft Certification exams**

- [Exam 70-431](#): TS: Microsoft SQL Server 2005 - Implementation and Maintenance (with course 2780). Exam 70-431 is an elective for the MCSE certification on Windows Server 2003.

### **Course Materials**

The student kit includes a comprehensive workbook and other necessary materials for this class.

## Course Outline

### Module 1: Creating Databases and Database Files

This module explains how to create databases, filegroups, schemas, and database snapshots.

#### Lessons

- Creating Databases
- Creating Filegroups
- Creating Schemas
- Creating Database Snapshots

#### Lab 1: Creating Databases and Database Files

- Creating a Database
- Creating Schemas
- Creating a Database Snapshot

After completing this module, students will be able to:

- ✓ Create databases.
- ✓ Create filegroups.
- ✓ Create schemas.
- ✓ Create database snapshots.

### Module 2: Creating Data Types and Tables

This module explains how to create data types and tables. It also describes how to create partitioned tables.

#### Lessons

- Creating Data Types
- Creating Tables
- Creating Partitioned Tables

#### Lab 2: Creating Data Types and Tables

- Creating Data Types
- Creating Tables
- Creating Partitioned Tables

After completing this module, students will be able to:

- ✓ Create new data types.
- ✓ Create new tables.
- ✓ Create partitioned tables.



### **Module 3: Using XML**

This module explains how to use the FOR XML clause and the OPENXML function. It also describes how to use the xml data type and its methods.

#### **Lessons**

- Retrieving XML by Using FOR XML
- Shredding XML by Using OPENXML
- Introducing XQuery
- Using the xml Data Type

#### **Lab 3: Using XML**

- Mapping Relational Data and XML
- Storing XML Natively in the Database
- Using XQuery with xml Methods

After completing this module, students will be able to:

- ✓ Retrieve XML by using the FOR XML clause.
- ✓ Shred XML by using the OPENXML function.
- ✓ Use XQuery expressions.
- ✓ Use the xml data type.

### **Module 4: Creating and Tuning Indexes**

This module explains how to plan, create, and optimize indexes. It also describes how to create XML indexes.

#### **Lessons**

- Planning Indexes
- Creating Indexes
- Optimizing Indexes
- Creating XML Indexes

#### **Lab 4: Creating and Tuning Indexes**

- Creating Indexes
- Tuning Indexes
- Creating XML Indexes

After completing this module, students will be able to:

- ✓ Plan indexes.
- ✓ Create indexes.
- ✓ Optimize indexes.
- ✓ Create XML indexes.



## Module 5: Implementing Data Integrity by Using Constraints

This module explains how to implement constraints and provides an overview of data integrity.

### Lessons

- Data Integrity Overview
- Implementing Constraints

### Lab 5: Implementing Data Integrity by Using Constraints

- Creating Constraints
- Disabling Constraints

After completing this module, students will be able to:

- ✓ *Describe the options for enforcing data integrity in SQL Server 2005.*
- ✓ *Implement data integrity in SQL Server 2005 databases by using constraints.*

## Module 6: Implementing Data Integrity by Using Triggers and XML Schemas

This module explains how to implement triggers and XML schemas.

### Lessons

- Implementing Triggers
- Implementing XML Schemas

### Lab 6: Implementing Data Integrity by Using Triggers and XML Schemas

- Creating Triggers
- Implementing XML Schemas

After completing this module, students will be able to:

- ✓ *Implement data integrity in SQL Server 2005 databases by using triggers.*
- ✓ *Implement data integrity in SQL Server 2005 databases by using XML schemas.*

## Module 7: Implementing Views

This module explains how to create views.

### Lessons

- Introduction to Views
- Creating and Managing Views
- Optimizing Performance by Using Views

### Lab 7: Implementing Views

- Creating Views
- Creating Indexed Views
- Creating Partitioned Views

After completing this module, students will be able to:

- ✓ *Describe the purpose of views.*
- ✓ *Create and manage views.*
- ✓ *Explain how to optimize query performance by using views.*



## Module 8: Implementing Stored Procedures

This module explains how to create stored procedures and functions. It also describes execution plans, plan caching, and query compilation.

### Lessons

- Implementing Stored Procedures
- Creating Parameterized Stored Procedures
- Working With Execution Plans
- Handling Errors

### Lab 8: Implementing Stored Procedures

- Creating Stored Procedures
- Working With Execution Plans

After completing this module, students will be able to:

- ✓ *Implement* stored procedures.
- ✓ Create parameterized stored procedures.
- ✓ Work with execution plans.
- ✓ Handle errors in stored procedures.

## Module 9: Implementing Functions

This module explains how to create functions. It also describes how to control the execution context.

### Lessons

- Creating and Using Functions
- Working with Functions
- Controlling Execution Context

### Lab 9: Implementing Functions

- Creating Functions
- Controlling Execution Context

After completing this module, students will be able to:

- ✓ *Create* and use functions.
- ✓ Work with functions.
- ✓ Control execution context.

## Module 10: Implementing Managed Code in the Database

This module explains how to implement managed database objects.

### Lessons

- Introduction to the SQL Server Common Language Runtime
- Importing and Configuring Assemblies
- Creating Managed Database Objects



## Lab 10: Implementing Managed Code in the Database

- Importing an Assembly
- Creating Managed Database Objects

After completing this module, students will be able to:

- ✓ *Identify* appropriate scenarios for managed code in the database.
- ✓ Import and configure assemblies.
- ✓ Create managed database objects.



## Module 11: Managing Transactions and Locks

This module explains how to use transactions and the SQL Server locking mechanisms to meet the performance and data integrity requirements of your applications.

### Lessons

- Overview of Transactions and Locks
- Managing Transactions
- Understanding SQL Server Locking Architecture
- Managing Locks

### Lab 11: Managing Transactions and Locks

- Using Transactions
- Managing Locks

After completing this module, students will be able to:

- ✓ *Describe* how SQL Server 2005 transactions use locks.
- ✓ Execute and cancel a transaction.
- ✓ Describe concurrency issues and SQL Server 2005 locking mechanisms.
- ✓ Manage locks.

## Module 12: Using Service Broker

This module explains how to build a messaging-based solution with Service Broker.

### Lessons

- Service Broker Overview
- Creating Service Broker Objects
- Sending and Receiving Messages

### Lab 12: Using Service Broker (Optional)

- Creating Service Broker Objects
- Implementing the Initiating Service
- Implementing the Target Service

After completing this module, students will be able to:

- ✓ *Describe* Service Broker functionality and architecture.
- ✓ Create Service Broker objects.
- ✓ Send and receive Service Broker messages.

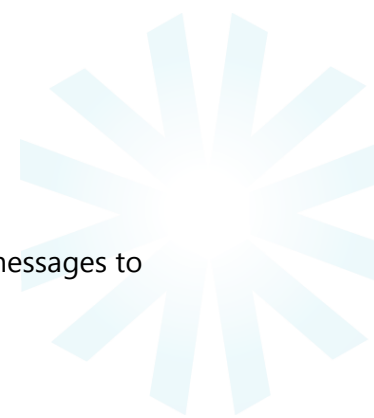
## Module 13: Using Notification Services (Optional)

This module explains how to develop applications that generate and send timely messages to subscribers.

### Lessons

- Introduction to Notification Services
- Developing Notification Services Solutions

After completing this module, students will be able to:



- ✓ *Describe how* Notification Services operates.
- ✓ Develop a Notification Services application.

