

## Course Outline

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### 2781- Designing Microsoft SQL Server 2005 Server-Side Solutions



**Duration:** 3 days (18 hours)

#### Learning Objectives:

- Select SQL Server services to support an organization's business needs
- Design a security strategy for a SQL Server 2005 solution
- Design a data modeling strategy
- Design a transaction strategy for a SQL Server solution
- Design a Notification Services solution
- Design a Service Broker solution
- Plan for source control, unit testing, and deployment to meet an organization's needs
- Evaluate advanced query techniques
- Evaluate advanced XML techniques

#### Target Audience:

This course is intended for current professional database developers who have three or more years of on-the-job experience developing SQL Server database solutions in an enterprise environment

#### Prerequisites:

- Have experience reading user requirements and business-need documents. For example, development project vision/mission statements or business analysis reports
- Understand Transact-SQL syntax and programming logic
- Understand XML. Specifically, they must be familiar with the syntax of XML, what elements and attributes are, and how to distinguish them
- Understand security requirements. Specifically, must understand how unauthorized users can gain access to sensitive information and be able to plan strategies to prevent access
- Be able to design a database to 3NF and know the tradeoffs when backing out of the fully normalized design (denormalization) and designing for performance and business requirements in addition to being familiar with design models, such as Star and Snowflake schemas
- Have basic monitoring and troubleshooting skills
- Have basic knowledge of the operating system and platform. That is, how the operating system integrates with the database, what the platform or operating system can do, and how interaction between the operating system and the database works
- Have basic knowledge of application architecture. That is, how applications can be designed in three layers, what applications can do, how interaction between the application and the database works, and how the interaction between the database and the platform or operating system works
- Have some experience with a reporting tool
- Be familiar with SQL Server 2005 features, tools, and technologies
- Have a Microsoft Certified Technology Specialist: Microsoft SQL Server 2005 credential, or equivalent experience

In addition, it is recommended, but not required, that students have completed:

- Course 2778: Writing Queries Using Microsoft SQL Server 2005 Transact-SQL
- Course 2779: Implementing a Microsoft SQL Server 2005 Database
- Course 2780: Maintaining a Microsoft SQL Server 2005 Database

### **Topics Covered:**

- Selecting SQL Server Services to Support Business Needs
  - Overview of the Built-in SQL Server Services
  - Evaluating When to Use the New SQL Server Services
  - Evaluating the Use of Database Engine Enhancements
  - Selecting SQL Server Services to support Business Needs
  - Translating Business requirements into SQL Server services
  - Analyzing the needs of Real Organizations
- Designing a Security Strategy
  - Overview of Authentication Modes and Authorization Strategies
  - Designing a Security Strategy for Components of a SQL Server 2005 Solution
  - Designing Objects to Manage Application Access
  - Creating an Auditing Strategy
  - Managing Multiple Development Teams Using the SQL Server 2005 Security Features
  - Designing a Security Strategy
  - Evaluating the Security Tradeoffs of SQL Server Services
  - Designing a Database to Enable Auditing
  - Designing Objects to Manage Application Access
  - Justifying Security Decisions
- Designing a Data Modeling Strategy
  - Defining Standards for Storing XML Data in a Solution
  - Designing a Database Solution Schema
  - Designing a Scale-Out Strategy
  - Designing a Data Modeling Strategy
  - Designing a Database solution schema
  - Designing Integration of multiple data stores
- Designing a transaction strategy for a SQL Server 2005 Solution
  - Defining Data Behavior Requirements
  - Defining Isolation Levels
  - Designing a Resilient Transaction Strategy
  - Designing a transaction strategy for a SQL server 2005 solution
  - Determining the Database Isolation Level
  - Determining the Order of Object Access
  - Designing Transactions
  - Justifying a Transaction Strategy
- Designing a Notification Services Solution
  - Defining Event Data
  - Designing a Subscription Strategy
  - Designing a Notification Strategy
  - Designing a Notification Delivery Strategy

- Designing a Notification Services Solution
- Defining Event Data
- Designing a Subscription Strategy
- Designing a Notification Strategy
- Executing a Notification Services Solution
- Designing a Service Broker Solution
  - Designing a Service Broker Solution Architecture
  - Designing Service Broker Data Flow
  - Designing Service Broker Solution Availability
  - Designing a Service Broker solution
  - Designing a Service Broker Solution Architecture
  - Designing a Subscription Strategy
  - Executing a Service Broker Solution
- Planning for Source Control, Unit Testing, and Deployment
  - Designing a Source Control Strategy
  - Designing a Unit Test Plan
  - Creating a Performance Baseline and Benchmarking Strategy
  - Designing a Deployment Strategy
  - Planning for Source Control, Unit Testing, and Deployment
  - Designing a Source Control Strategy
  - Designing a Unit Testing Plan
  - Designing a Deployment Strategy
  - Justifying Source Control, Unit Test, and Deployment Strategies
- Evaluating Advanced Query and XML techniques
  - Evaluating Common Table Expressions
  - Evaluating Pivot Queries
  - Evaluating Ranking Queries
  - Overview of XQuery
  - Overview of Strategies for Converting Data Between XML and Relational Formats
  - Evaluating Advanced Query techniques
  - Evaluating Common Table Expressions
  - Evaluating Pivot Queries
  - Evaluating Ranking Queries
  - Evaluating Techniques for Converting XML into Relational Data