



## 1. Course Outline

### **Microsoft SQL Server Introduction Course Outline**

#### **Module 1: Introducing SQL Server**

- Overview of the SQL Server suite of products
- Fundamentals of the relational database engine
- Benefits of the Business Intelligence stack
- SQL Server components and tools
- SQL Server Agent and Management Studio
- Integration Services
- Analysis Services
- Reporting Services
- Data Quality Services
- Master Data Services

#### **Module 2: Building the Database**

- Constructing a relational database

- Choosing optimal file size and growth parameters
- Working with database schemas
- Defining tables
- Specifying appropriate data types
- Indexing tables with Management Studio
- Adding, modifying, or removing columns
- Safeguarding data with constraints
- Enforcing uniqueness through primary key constraints
- Validating conditions with check constraints
- Protecting relationships with foreign keys

### **Module 3: Leveraging Server Programmability**

- Retrieving data with Transact-SQL
- Employing Query Designer to construct select statements
- Retrieving subsets of data from multiple tables using joins and the WHERE clause criteria
- Analyzing data for aggregate functions
- Modifying data with SQL commands

- Inserting new rows into tables
- Updating targeted data
- Deleting specific rows
- Introduction to developing programming constructs
- Creating stored procedures for productivity
- Writing user-defined functions to simplify queries
- Deploying triggers to capture change events

#### **Module 4: Administering SQL Server Databases**

- Executing the Maintenance Plan Wizard
- Defragmenting data and checking database integrity
- Improving performance by rebuilding indexes
- Automating administrative tasks
- Scheduling repeating jobs
- Implementing a backup strategy
- Monitoring SQL Server resources
- Displaying current activity and expensive queries

- Running reports with Management Studio
- Securing the database infrastructure
- Authenticating SQL Server and Windows logins
- Assigning users to database and server roles
- Granting or revoking permissions

#### **Module 5: Integrating External Applications**

- Connecting to Microsoft Office
- Pulling data from SQL Server into Excel
- Creating a front-end interface with Access
- Transferring business information
- Importing and exporting data from text files
- Migrating an Access database to SQL Server.

#### **Module 6: Implementing Business Intelligence Solutions**

- Extracting data with Integration Services
- Transforming and cleaning data
- Loading data into a data warehouse
- Information delivery with Reporting Services

- Design reports quickly with the Report Builder
- Deploying reports for centralized access
- Aggregating data with Analysis Services
- Building multidimensional cubes
- Predicting trends with data mining
- Developing a Business Intelligence strategy
- Leveraging Excel and Power Pivot
- Transferring data into knowledge with BI functionality.