



# Sql Server Syllabus

## Overview

This SQL Server training teaches developers all the Transact-SQL skills they need to create database objects like Tables, Views, Stored procedures & Functions and triggers in SQL Server. Gives idea about writing Queries & Sub-queries, working with Joins, etc. As well as database management skills like backup, restore, etc.

## Course Goals

- Learn Database models
  - Overview of SQL Server Management Studio and Transact-SQL language
  - Master writing simple and complex queries that retrieve data from the database
  - Calculate information across result sets using aggregate queries (sum, min, max, avg, etc.)
  - Insert, update, and delete data
  - Retrieve data from tables
  - Joins
  - Sub-queries
  - Working with Data Types
  - Procedure and Functions
  - Understand the different Views
  - Working with Triggers
  - Create and manage views
  - Ensure the integrity of multiple, related database updates by using transactions
  - Retrieve data using cursors
- ✓ Introduction To SQL Server
- Advantages and Drawbacks Of SQL Server Compared To Oracle And DB2
  - Connecting To Server
    - Server Type
    - Server Name
    - Authentication Modes

- Sql Server Authentication Mode
- Windows Authentication Mode
- Login and Password
- Sql Server Management Studio and Tools In Management Studio
  - Object Explorer
  - Object Explorer Details
  - Query Editor
  
- ✓ TSQL (Transact Structured Query Language)  
Introduction To TSQL
  
- ✓ History and Features of TSQL
- ✓ Types Of TSQL Commands
- ✓ Data Definition Language (DDL)
- ✓ Data Manipulation Language (DML)
- ✓ Database
  - Creating Database
  - Altering Database
  - Deleting Database
  - Constrains
    - Procedural Integrity Constraints
    - Declarative Integrity Constraints
      - Not Null, Unique, Default and Check constraints
      - Primary Key and Referential Integrity or foreign key constraints
        - Data Types In TSQL
        - Table
        - Creating Table
        - Altering Table
        - Deleting Table
  
- ✓ Data Manipulation Language
  - Insert
    - Identity
    - Creating A Table From Another Table
    - Inserting Rows From One Table To Another
  - Update
    - Computed Columns
  - Delete
    - Truncate
    - Differences Between Delete and Truncate
  
- ✓ Data Query Language (DQL)
  - Select
  - Where clause
  - Order By Clause
  - Distinct Keyword

- Isnull() function
- Column aliases
- Predicates
  - Between ... And
  - In
  - Like
  - Is Null

✓ Built In Functions

- Scalar Functions
- Numeric Functions
- Character Functions
- Conversion Functions
- Date Functions
- Aggregate Functions
  - Convenient Aggregate Functions
  - Statistical Aggregate Functions
  - Group By and Having Clauses
  - Super Aggregates
  - Over(partition by ...) Clause
  - Ranking Functions
    - Common Table Expressions (CTE)

✓ Top n Clause

✓ Set Operators

- Union
- Intersect
- Except

✓ Joins

- Inner Join
  - Equi Join
  - Natural Join
  - Non-Equi Join
  - Self Join
- Outer Join
  - Left Outer Join
  - Right Outer Join
  - Full Outer Join
  - Cross Join

✓ Sub Queries

- Single Row Sub Queries
- Multi Row Sub Queries

- Any or Some
- ALL
- Nested Sub Queries
- Co-Related Sub Queries
- Exists and Not Exists

✓ Indexes

- Clustered Index
- NonClustered Index
- Create , Alter and Drop Indexes
- Using Indexes

✓ Views

- Purpose Of Views
- Creating , Altering and Dropping Indexes
- Simple and Complex Views

✓ Transaction Management

- Introduction
- Begin Transaction
- Commit Transaction
- Rollback Transaction

✓ TSQL Programming

- Drawbacks Of TSQL that leads to TSQL Programming
- Introduction To TSQL Programming
- Control statements In TSQL Programming
  - Conditional Control Statements
    - If
    - Case
- Looping Control Statements
- While

✓ Cursors

- Working With Cursors
- Types Of Cursors
- Forward\_Only and Scroll Cursors
- Static, Dynamic and Keyset Cursors
- Local and Global Cursors

✓ Stored Procedure

- Creating , Altering and Dropping
- Optional Parameters
- Input and Output Parameters

✓ User Defined Functions

- Creating, Altering and Dropping
- Types Of User Defined Functions
  - Scalar Functions
  - Table Valued Functions
    - Inline Table Valued Functions
    - Multi Statement Table Valued Functions

✓ Triggers

- Purpose of Triggers
- Differences Between Stored Procedures and User Defined Functions and Triggers
- Creating, Altering and Dropping Triggers
- Magic Tables
- Instead Of Triggers

✓ Exception Handling

- Implementing Exception Handling
- Adding and removing User Defined Error Messages To And From SQL Server Error Messages List
- Raising Exceptions Manual

✓ Working With XML Data Type

✓ Backup and Restore Of Database

✓ Attach and Detach of Database

✓ Normalization