

SQL Server Course Catalog – 90 Days

Day	Module	Topics Covered
1-3	Introduction to SQL Server	Overview of SQL Server, Installing SQL Server, SQL Server Management Studio (SSMS), SQL Server Architecture, SQL Server Versions
4-6	Basic SQL Queries	SELECT Statement, WHERE Clause, DISTINCT, ORDER BY, LIMIT, AND/OR Operators, Basic Filtering
7-9	SQL Data Types	Numeric Types, Date/Time Types, String Types, Binary Types, Data Type Conversion
10-12	Filtering & Sorting Data	Using WHERE for Filtering, Logical Operators, Sorting with ORDER BY, LIMIT and OFFSET, Working with NULL Values
13-15	SQL Functions	Scalar Functions (LEN, GETDATE, UPPER, LOWER), Aggregate Functions (SUM, COUNT, AVG, MIN, MAX), String Functions, Date Functions
16-18	Joins in SQL	INNER JOIN, LEFT JOIN, RIGHT JOIN, FULL OUTER JOIN, Self Join, Cross Join, Equi Join, Non-Equi Join
19-21	Subqueries	Inline Views, Correlated Subqueries, EXISTS and IN, Scalar Subqueries, Nested Subqueries
22-24	SQL Set Operations	UNION, UNION ALL, INTERSECT, EXCEPT
25-27	SQL Constraints and Indexes	PRIMARY KEY, FOREIGN KEY, UNIQUE, CHECK, DEFAULT, Indexing, Clustered and Non-clustered Indexes
28-30	Normalization and Denormalization	Understanding Normal Forms (1NF, 2NF, 3NF), Database Design, Dealing with Redundancy, When to Denormalize
31-33	Stored Procedures	Introduction to Stored Procedures, Creating, Altering, and Dropping Stored Procedures, Input/Output Parameters, Error Handling in Procedures
34-36	Triggers	Introduction to Triggers, Creating DML Triggers (INSERT, UPDATE, DELETE), AFTER Triggers, INSTEAD OF Triggers, Trigger Performance
37-39	Views	Creating and Managing Views, Indexed Views, Updateable Views, Complex Views with Joins, Views vs. Tables
40-42	Transactions & Locks	Introduction to Transactions, COMMIT, ROLLBACK, ACID Properties, Locks in SQL Server, Isolation Levels, Deadlocks
43-45	Advanced SQL Functions	Window Functions (ROW_NUMBER, RANK, DENSE_RANK), CTEs (Common Table Expressions), Recursive Queries, APPLY, PIVOT, UNPIVOT

Day	Module	Topics Covered
46-48	Data Import/Export	Bulk Insert, Importing Data from Excel/CSV, Exporting Data to Excel/CSV, Using SQL Server Integration Services (SSIS)
49-51	Advanced Query Optimization	Query Execution Plan, Query Performance Tuning, Index Optimization, Analyzing Query Execution, Using Hints
52-54	Backup and Restore	Full, Differential, Transaction Log Backups, Restoring Databases, Backup Strategies, SQL Server Management Studio (SSMS) Backup Tools
55-57	SQL Server Security	Authentication, Authorization, Roles, Permissions, Encryption, Auditing, SQL Server Security Best Practices
58-60	SQL Server Reporting Services (SSRS)	Introduction to SSRS, Report Design, Creating Reports, Data Sources, Report Parameters, Report Publishing
61-63	SQL Server Integration Services (SSIS)	Data Flow, Control Flow, Data Transformation, ETL Process, Connecting to Different Data Sources, SSIS Package Deployment
64-66	SQL Server Analysis Services (SSAS)	Introduction to SSAS, OLAP Cubes, Data Warehousing, Creating Dimensions and Measures, SSAS Data Modeling
67-69	SQL Server Management	Managing SQL Server Instances, Configuring SQL Server, SQL Server Profiler, SQL Server Agent, Managing Jobs and Alerts
70-72	Advanced Data Types	XML Data, JSON Data, Spatial Data, FILESTREAM, HierarchyID, Full-Text Indexing
73-75	Dynamic SQL	Using EXEC, sp_executesql, Building Dynamic Queries, Security Implications of Dynamic SQL
76-78	SQL Server Performance Tuning	Identifying Performance Bottlenecks, Index Tuning, Query Tuning, SQL Profiler for Performance Analysis
79-81	SQL Server Full-Text Search	Full-Text Indexing, Full-Text Search Queries, Full-Text Indexing Configuration, Searching with CONTAINS and FREETEXT
82-84	Replication	SQL Server Replication Types (Transactional, Merge, Snapshot), Configuring Replication, Troubleshooting Replication Issues
85-87	SQL Server High Availability and Disaster Recovery	Database Mirroring, Always On Availability Groups, Log Shipping, Failover Clustering, Database Snapshot
88-89	SQL Server Performance Monitoring and Troubleshooting	Monitoring Tools (Performance Monitor, SQL Profiler), SQL Server Error Logs, Performance Baseline, Troubleshooting SQL Server Issues
90	Final Project & Certification	Hands-on Project (End-to-End Solution), Review of Key Concepts, Final Exam & Certification