COURSE SYLLABUS

SQL Server Certification Program

Gain practical SQL skills in this hands-on certification program, where you'll learn to write queries, manage data, and analyze results using Microsoft SQL Server.

Group classes (NYC) and onsite training are available for this course. For more information, email corporate@nobledesktop.com or visit: https://www.nobledesktop.com/classes/sql-server-certification-program



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Course Outline

This package includes these courses

- SQL Level 1 (6 Hours)
- SQL Level 2 (6 Hours)
- SQL Level 3 (6 Hours)

SQL Level 1

This beginner-level SQL course introduces the foundational concepts of structured query language and relational databases. Through hands-on exercises and the use of SQL Server Management Studio, you'll learn how to write, filter, and structure queries to extract meaningful insights from data.

- Understand core database concepts, including tables, rows, columns, and different types of SQL
- Connect to databases and navigate SQL Server Management Studio using tools like Object Explorer and Query Editor
- Write SELECT statements to retrieve data, specify columns, sort results, and eliminate duplicates
- Use WHERE, AND, OR, IN, and NOT clauses to filter data and apply pattern matching with wildcard characters
- Explore data types, comparison operators, and case sensitivity to refine queries with greater control
- Learn how to join tables using INNER JOIN and understand relational database concepts with ER diagrams and table aliases

SQL Level 2

This intermediate SQL course expands your ability to analyze and manipulate data through advanced querying techniques. Learn to work with joins, data types, aggregate functions, and date/time operations to uncover deeper insights and organize complex datasets.

- Compare INNER and OUTER JOIN types and use LEFT, RIGHT, and FULL JOINs to combine data across tables
- Identify and work with NULL values to ensure complete and accurate data analysis
- Use the CAST function to convert data types and make your queries more flexible
- Perform calculations with aggregate functions like SUM, COUNT, AVG, MAX, and MIN to summarize data
- Apply date functions to extract, format, and compare dates for time-based analysis

- Group results using GROUP BY and filter grouped data using the HAVING clause for advanced segmentation

SQL Level 3

This advanced SQL course is designed for professionals ready to deepen their expertise in data querying, logic, and database development. Learn to write sophisticated queries using subqueries, CASE statements, views, functions, and stored procedures, all key skills for roles in data analysis, data science, and database management.

- Write subqueries to create layered queries using single-value, multi-value, and table-value structures
- Use window functions with `OVER` and `PARTITION BY` to apply aggregate logic across rows without grouping
- Implement conditional logic with `CASE` and `IIF` statements to dynamically transform query results
- Manipulate text data using string functions like `SUBSTRING`, `CHARINDEX`, `UPPER`, and more
- Apply self joins to compare records within the same table and understand their unique structure and use cases
- Build and query views, user-defined functions, and stored procedures to modularize your SQL code