COURSE SYLLABUS

SQL Level I (Self-Paced)

Learn the fundamentals of SQL and relational databases, including syntax, database tables, and query writing. This course covers filtering results, using joins to combine data, and exploring databases through SQL Server Management Studio.

> Group classes (Live Online) and onsite training are available for this course. For more information, email onsite@graduateschool.edu or visit: https://www.graduateschool.edu/courses/sql-level-i-self-paced

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Course Outline

Foundations of SQL & Databases

SQL Fundamental Concepts

- What is SQL & why is it used?
- Flavors of SQL: SQL Server vs Postgres, etc.
- Database Tables, Rows, & Columns

Exploring Databases & Writing SQL Statements (with the free SQL Server Management Studio app)

- Connecting to a Database
- Object Explorer
- SQL Query Editor
- Using Code Hints
- Viewing the Results of your SQL query
- Setting Preferences (Options)

Writing SQL Queries

Writing SELECT Statements

- Syntax of a SELECT statement
- Selecting all columns or specific columns from a table
- Limiting the number of results using TOP
- Ordering the results using ORDER BY
- Returning only DISTINCT records (eliminating duplicates)

Filtering Results

- Data Types (Strings vs Numbers)
- Comparison Operators: equal to, greater or less than, not equal to, etc.

- Filtering results using WHERE, AND, OR, IN, and NOT
- Pattern Matching: Wildcard Filters
- Case Sensitivity

Using Joins to Combine Data from Multiple Tables

Understanding Table Relationships

- What are Primary vs Primary Keys
- Creating ER (Entity Relationship) Diagrams to visualize what's in a database
- Database Relations: One-to-One, One-to-Many, & Many-to-Many

Combining Tables with JOIN

- Inner Joins
- Column & Table Aliases