SQL Programming Level 1

Microsoft SQL Server has evolved to become a true, enterprise information platform. In this course you'll learn the fundamental elements of T-SQL, including the definition of DML, DDL, DCL and TCL; use control of flow statements like IF and WHILE; work with NULLs; practice T-SQL programming constructs to query and modify a database in SSMS; identify the different forms of the JOIN clause; filter data using logical queries; and define constraints to enforce data integrity.

Who Should Take This Course?

This course is designed for those who are interested in using SQL Server Management Studio and building functional real-world databases. Students will also learn a core set of SQL commands necessary to interact with relational databases. This is the second required course in the SQL Server Certificate.

Course Objectives

- Review the fundamental elements of T-SQL
- Understand NULL values
- Explore advanced SELECT statements
- Combine data sets with JOINS, UNION, INTERSECT AND EXCEPT operators.
- Use the INSERT, SELECT INTO, UPDATE, DELETE and TRUNCATE commands to manipulate data in a table
- Enforce data integrity by using Constraints

Course Info

- Length: 15 hours
- Format: Classroom instruction, demonstration and hands-on exercises
- Prerequisite: Relational Database Concepts and Design or equivalent

Course Content

Review the fundamental elements of T-SQL
- Differentiate between SQL and T-SQL
- Define DML, DDL, DCL and TCL
- Review T-SQL language elements

Understand NULL values
- Work with NULL values
- Define two-valued logic and three-valued logic
- Review the functions intended to be used with NULL
- Explore advanced SELECT statements
- Use table and column aliases
- Filter data

- Use ORDER BY, GROUP BY and HAVING clauses
- Understand CASE expression usage
- Identify Logical Query Processing Order

Combine data sets with JOINs, UNION, INTERSECT and EXCEPT operators
- Demonstrate the differences between INNER JOIN, OUTER JOIN, FULL JOIN, and CROSS JOIN
- Explore the results with UNION, INTERSECT and EXCEPT operators

Use commands to manipulate data in a table
- Use the INSERT command to insert new records into an existing table
- Use the SELECT INTO command to create a new table and insert new records into it
- Use the DELETE command to delete records from a table
- Use the TRUNCATE command to remove all data from a table

Enforce data integrity by using Constraints
- Create a Primary Key on a new or existing table
- Add a Foreign Key to a new or existing table
- Review CASCADE, SET NULL and SET DEFAULT actions of a foreign key
- Define UNIQUE, CHECK, and DEFAULT constraint on a new or existing table
- Disable constraints

Assessment /Evaluation

This course is not assigned a letter or numerical grade. However, in some cases, skill assessments may be administered during the course to gauge progress and comprehension.

Course Completion/Continuing Education Unit (CEU) Letter

If your company requires proof of course completion, or if you would like to have proof for your own records, you may request a Course Completion/Continuing Education Unit (CEU) letter **after the final session of your course**. You must attend 80 percent of the course (or 100 percent of a single-day course) to qualify for the letter. Attendance is verified through the Sign-in Sheet/Roster. It is your responsibility to sign-in at every session. You can request a Course Completion/CEU letter online.

Certificates of Completion for Certificate Programs

To receive a Certificate of Completion for the SQL Server Certificate, you must take all four required courses; attend 80 percent of each course (calculated by number of sessions in each course), except the Capstone course, where 100 percent attendance is required; participate in class; and successfully complete the SQL Server Capstone project by the deadline given. (Please note: Saturday sessions lasting longer than four hours will count as two sessions.) If you complete a certificate program by taking courses individually (not through a series), you can request a Certificate of Completion online.

*Attendance for CEU letters and certificate programs is verified via the sign-in sheets provided at each class session. It is your responsibility to sign-in.

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The accommodations authorized on your forms should be discussed with your instructor. All discussions will remain confidential. Accommodations are not provided retroactively, so it is essential to discuss your needs at the beginning of the quarter. Additionally, only accommodations approved by Disability Support Services will be provided. This syllabus is available in alternate formats upon request. Green River College is an equal opportunity educator and employer. Learn more at **www.greenriver.edu/accessibility**.