



# TEMARIO

Course DP-080T00: Querying Data with  
Microsoft Transact-SQL

## 2 Day

### Objetivo

This course will teach the basics of Microsoft's dialect of the standard SQL language: Transact-SQL. Topics include both querying and modifying data in relational databases that are hosted in Microsoft SQL Server-based database systems, including: Microsoft SQL Server, Azure SQL Database and, Azure Synapse Analytics.

### Audience Profile

This course can be valuable for anyone who needs to write basic SQL or Transact-SQL queries. This includes anyone working with data as a data analyst, a data engineer, a data scientist, a database administrator or a database developer. It can also be useful for others peripherally involved with data, or wanting to learn more about working with data such as solution architects, students and technology managers.

### Skills gained

Use SQL Server query tools

Write SELECT statements to retrieve columns from one or more tables

Sort and filter selected data

Use built-in functions to returned data values

Create groups of data and aggregate the results

Modify data with Transact-SQL using INSERT, UPDATE, DELETE and MERGE

## Module 1: Getting Started with Transact-SQL

In this module you will learn about the basics of the Transact-SQL (T-SQL) language, as well as general properties and terminology of relational databases. This module will also introduce the basic SELECT statement for retrieving data from a table.

### Lessons

Introduction to Transact-SQL

Using the SELECT statement

Lab : Get started with SQL Server query tools and writing queries in T-SQL

After completing this module, students will be able to:

Using a query tool to write and execute queries in Transact-SQL

Understand the basic concepts of relational database and the T-SQL language

Write SELECT statements to retrieve data from a relational database table

Understand basic datatypes and how they are used

Understand the basics of NULL values

## Module 2: Sorting and Filtering Query Results

In the module you will learn how to control what data is returned, the order in which it is returned. You will use the ORDER BY clause, with and without paging. You will learn about various kinds of filters that can be used in the WHERE clause to control which data rows are returned. You will also learn how to manage the results by removing duplicates with DISTINCT.

### Lessons

Sorting query results

Filtering the data

Lab : Sort and filter data returned by SELECT queries

After completing this module, students will be able to:

Use ORDER BY to sort results from a T-SQL SELECT statement

Add a TOP clause to limit the ordered rows returned

Page the sorted data with OFFSET-FET

Write WHERE clauses to filter the rows returned

Use DISTINCT to eliminate duplicate rows in the results

## Module 3: Using Joins and Subqueries

In this module, you will explore T-SQL queries which access data from multiple tables with various kinds of JOIN operations and simple subqueries.

Lessons

Using JOIN operations

Using subqueries

Lab : Write queries with JOIN operations

Lab : Write SELECT statements using subqueries

After completing this module, students will be able to:

Write queries accessing data from multiple tables using JOIN operations

Understand the differences between type of JOIN operations: INNER JOIN, OUTER JOIN, CROSS JOIN

Understand how to join a table to itself with a self-join

Write subqueries within a SELECT statement

Understand the difference between scalar and multi-valued subqueries

Understand the difference between correlated and self-contained subqueries

## Module 4: Using Built-in Functions

In the module you will explore the use of built-in functions for returning computed or special values in the SELECT list or in the WHERE clause. Functions include math functions, string functions and system functions. There are other types of functions that will be mentioned, but not discussed in detail. You will also learn how to combine rows of data into a single group, providing summary information for the group such as SUM, MIN or MAX.

Lessons

Getting started with scalar functions

Grouping aggregated results

Lab : Built-in functions

After completing this module, students will be able to:

Write queries using scalar functions

Write queries using aggregate functions

Use GROUP BY to combine data into groups based on a common column value

Understand how HAVING is used to filter groups of rows

## Module 5: Modifying Data

In this module, you will learn the T-SQL statements for modifying table data including UPDATE, DELETE and MERGE as well as various options for INSERT including creating a new table with data from an existing table. You will also look at how to have the system automatically supply values for columns as the data is inserted.

### Lessons

Inserting data into tables

Modifying and deleting data

Lab : Modify data

After completing this module, students will be able to:

Insert data into an existing table

Specify that a column should be automatically populating with an IDENTITY or a SEQUENCE value

Modify data using the UPDATE statement

Delete data using the DELETE statement

Modify data using MERGE to synchronize two tables