



# Broward Community College

## Course Outline

STATUS: \_\_\_\_\_

COMMON COURSE NUMBER: CTS1432C

COURSE TITLE: Querying Microsoft SQL Server with Transact-SQL

CREDIT HOURS: 4

### CONTACT HOURS BREAKDOWN:

Lecture/Discussion 56

Lab 8

Other \_\_\_\_\_

Contact Hours/Week 4

### CATALOG COURSE DESCRIPTION:

The goal of this course is to provide students with the technical skills required to write basic Transact-SQL queries for Microsoft SQL Server™.

Prerequisite: CEN1331 and CGS1540C (each with a grade of C or higher)

Corequisite: None

### UNIT TITLES:

1. Introduction to Transact-SQL
2. Using Transact-SQL Querying Tools
3. Retrieving Data
4. Grouping and Summarizing Data
5. Joining Multiple Tables
6. Working with Subqueries
7. Modifying Data
8. Querying Full-Text Indexes
9. Introduction to Programming Objects

## **I. Course Overview:**

Upon successful completion of this course, the students should be able to describe and use Transact-SQL to query a Microsoft SQL Server database.

## **II. Units:**

### **Unit 1. 1. Introduction to Transact-SQL**

#### General Outcome:

1.0 The students should be able to discuss the basics of Transact-SQL.

#### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

1.1 Differentiate between Transact-SQL and ANSI-SQL.

1.2 Describe the basic types of Transact-SQL.

1.3 Describe the syntax elements of Transact-SQL.

## Unit 2. 2. Using Transact-SQL Querying Tools

### General Outcome:

2.0 The students should be able to use Transact-SQL for various functions.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 2.1 Describe the basic function of SQL Query Analyzer.
- 2.2 Describe how to use the Object Browser tool in SQL Query Analyzer.
- 2.3 Describe how to use the templates in SQL Query Analyzer.
- 2.4 Describe how to use the osql command-line utility.
- 2.5 Execute Transact-SQL statements in various ways.

## Unit 3. 3. Retrieving Data

### General Outcome:

3.0 The students should be able to retrieve data from a database and explain how queries work.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 3.1 Retrieve data from tables by using the SELECT statement.
- 3.2 Filter data by using different search condition to use with the WHERE clause.
- 3.3 Describe how queries are processed.
- 3.4 Describe performance considerations that affect retrieving data.

## Unit 4. 4. Grouping and Summarizing Data

### General Outcome:

4.0 The students should be able to perform more sophisticated database operations.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 4.1 Use the TOP n keyword to retrieve a list of the specified top values in a table.
- 4.2 Generate a single summary value by using aggregate functions.
- 4.3 Organize summary data for a column by using aggregate functions with the GROUP BY and HAVING clauses.
- 4.4 Generate summary data for a table by using aggregate functions with the GROUP BY clause and the ROLLUP or CUBE operator.
- 4.5 Generate control-break reports by using the COMPUTE and COMPUTE BY clauses.

## Unit 5. 5. Joining Multiple Tables

### General Outcome:

5.0 The students should be able to combine data from different tables.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 5.1 Use aliases for table names.
- 5.2 Combine data from two or more tables by using joins.
- 5.3 Combine multiple result sets into one result set by using the UNION operator.

**Unit 6. 6. Working with Subqueries**

General Outcome:

6.0 The students should be able to effectively use subqueries.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

6.1 Describe when and how to use a subquery.

6.2 Use subqueries to break down and perform complex queries.

## Unit 7. 7. Modifying Data

### General Outcome:

7.0 The students should be able to properly modify data in a database.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 7.1 Describe how transactions work.
- 7.2 Write INSERT, DELETE, and UPDATE statements to modify data in tables.
- 7.3 Describe performance considerations related to modifying data.

**Unit 8. 8. Querying Full-Text Indexes**

General Outcome:

8.0 The students should be able to effectively use full-text searches.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

8.1 Describe Microsoft Search service function and components.

8.2 Get information about full-text indexes.

8.3 Write full-text queries.

**Unit 9. 9. Introduction to Programming Objects**

General Outcome:

9.0 The students should be able to discuss the basics of programming objects.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 9.1 Display the text of a programming object.
- 9.2 Describe the concepts of views.
- 9.3 List the advantages of views.
- 9.4 Describe stored procedures.
- 9.5 Describe triggers.
- 9.6 Describe user-defined functions.