

SOUTHEAST COMMUNITY COLLEGE
CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION
Computer Information Technology Program
Revision Date: August 2024

I. CATALOG DESCRIPTION

Course Number: INFO2411
Course Title: Advanced Database & SQL
Prerequisite(s): INFO1411
Catalog Description: Students use graphical and command line interfaces in a variety of enterprise relational database management systems (such as Microsoft SQL Server and MySQL) to create and manage databases. Topics include creating and altering tables, relationships, constraints, indexes, views, stored procedures, and triggers.
Credit Hours: 3
Class Hours: 45
Lab Hours: 0
Total Contact Hours: 45

II. COURSE OBJECTIVES: *Course will:*

- A. Review using Structured Query Language (SQL) and management tools to create databases, tables and insert/modify data.
- B. Provide hands-on training creating summary and multiple-table queries.
- C. Provide hands-on training using Numeric, String and Date functions in queries.
- D. Provide hands-on training creating and using indexes and constraints.
- E. Provide hands-on training creating and using views.
- F. Provide hands-on training creating and using stored procedures and table triggers.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

- A. Student Learning Outcomes: *Student will be able to:*
 - 1. Create and use database structures using management tools.
 - 2. Create and use multiple-table queries using JOINS.
 - 3. Create summary queries.
 - 4. Use string, numeric and date functions effectively.
 - 5. Create and use multiple-table queries using subqueries.
 - 6. Create and use database structures using SQL code.
 - 7. Create and use indexes and constraints.
 - 8. Create and use views.
 - 9. Create and use stored procedures.
 - 10. Create and use triggers.Create and manage users.
- B. General Education Learning Outcomes (GELOs)
 - 1. GELO #3: Critical Thinking & Problem Solving
Outcome 1: Collect, identify, interpret and analyze data.

IV. CONTENT/TOPICAL OUTLINE

- A. Single table SELECT queries.
- B. Multiple-table queries.
- C. Summary queries.
- D. String, numeric and date functions in SELECT queries.

- E. Structured Query Language (SQL) to create databases, tables and insert/modify data.
- F. Indexes and constraints.
- G. Views.
- H. Stored procedures.
- I. Triggers.
- J. User management.

V. INSTRUCTIONAL MATERIALS

- A. Required Text(s):
 - 1. Murach, *MySQL* (Refer to CID and/or instructor for current edition)
 - 2. Murach, *Murach's Sql Server for Developers* (Refer to CID and/or instructor for current edition)
- B. Computer and Internet access

VI. METHODS OF PRESENTATION/INSTRUCTION

- A. Methods of presentation typically include a combination of the following:
 - 1. Material is presented in web-based training format
 - 2. Engaged learning activities
 - 3. Group discussions

VII. METHODS OF EVALUATION

- A. Methods of evaluation, although determined by the individual instructor, traditionally includes a combination of the following:
 - 1. Problem-solving activities
 - 2. Homework assignments
 - 3. Personal Database Project
 - 4. Tests