

# CIT 171

## SQL I

### Course Description

The course is designed to provide students with an extensive introduction to database manipulation technology. The class covers the SQL and PL/SQL programming languages. Students create and maintain database objects, and store, retrieve, and manipulate data. Students create PL/SQL blocks of reusable application code. Prerequisites: CIT170; or consent of instructor.

### Course Competencies

Upon successful completion of this course, the student can:

1. create and maintain database objects.
2. retrieve, update, insert and delete data stored in a database using SQL.
3. control data and user access to data.
4. control transactions that will manipulate data.
5. describe the features and syntax of PL/SQL.
6. use PL/SQL to conditionally control code flow (loops, control structures, and explicit cursors).
7. debug runtime errors.

### Course Outline

- I. Introduction
  - A. Review Relational Database Fundamentals (RDMS)
  - B. Implement RDMS using Oracle
  - C. Use of SQL and PL/SQL to Manipulate RDMS
- II. SQL
  - A. Review SQL Syntax
  - B. Distinguish SQL Plus from SQL
  - C. Create and Manage Tables
  - D. Describe Data Types
  - E. Create and Maintain Constraints
  - F. Create and Maintain Views
  - G. Control User Access
- III. PL/SQL
  - A. Declare Variables
  - B. Write Executable Statements
  - C. Interacting With the Database Server
  - D. Write Control Structures