South Central College

COMP2220  SQL/DB2

Common Course Outline

Course Information

Description
This course covers Structured Query Language (SQL) and the Database Management System (DB2) commonly used on IBM platforms, such as the IBM Power System. Topics covered include data modeling and design as it pertains to the relational database model and the use of SQL commands to create schemas and tables, manipulate data, and retrieve data.
(Pre-requisite: COMP2200 IBMi Operating Systems or Instructor Approval)

Career Cluster
Arts, Communications, & Information Systems

Total Credits 4.00
Total Hours 64.00

Types of Instruction

Instruction Type Credits/Hours
Lecture 4/64

Pre/Corequisites
Prerequisite COMP2200 - IBMi Operating Systems

Institutional Core Competencies

1 Analysis and inquiry: Students will demonstrate an ability to analyze information from multiple sources and to raise pertinent questions regarding that information.

2 Critical and creative thinking: Students will develop the disposition and skills to strategize, gather, organize, create, refine, analyze, and evaluate the credibility of relevant information and ideas.

Course Competencies

1 Explore the concept of Database Management Systems (DBMSs)

   Learning Objectives
   Discuss the characteristics of the DB2 Universal Database
   Explain the hierarchy of database, tables, rows, and columns

2 Examine the processes of Database Modeling and Design

   Learning Objectives
   Define the purpose of physical database design
   Define the purpose of logical data modeling
Identify the steps for developing a data model
Explain what entity relationship diagrams (ERDs) are
Demonstrate the process of the normalization of data
Compare the different normal forms

3 **Explore the concepts of Structured Query Language (SQL)**

Learning Objectives
Examine SQL syntax
Describe the different SQL data types
Differentiate the relationship between a schema and a table
Use the Interactive SQL interface

4 **Maintain a schema using SQL commands**

Learning Objectives
Use the CREATE command to build a schema
Change the default schema
Remove a schema from a display list

5 **Create a Table using SQL commands**

Learning Objectives
Use the CREATE command to create a table
Add data to a table using the INSERT and VALUES commands
Examine the use of NULL values
Use the DROP command to delete a table from a schema

6 **Maintain a table using SQL commands**

Learning Objectives
Use the INSERT command to add data to a table
Use the UPDATE command to modify data in a table
Use the DELETE command to remove data from a table

7 **Examine database constraints**

Learning Objectives
Explain the purpose of constraints
Apply a primary key constraint
Apply a foreign key constraint (referential integrity)
Apply a unique constraint
Apply a check constraint

8 **Create a query from a single table**

Learning Objectives
Use a SELECT statement to retrieve data from a table
Construct a computed column in the select list
Use the AS clause
Use simple and compound conditions in a WHERE clause
Use the DISTINCT, CONCAT, BETWEEN, LIKE, and IN operators
Use the ORDER BY clause to sort records in a query result
Use the GROUP BY clause to group records in a query result

9 **Create a query from multiple tables**

Learning Objectives
Explain the different types of Joins
Use joins to retrieve data from two or more tables
Use aliases
Use the UNION operator
Create a sub-query within a query

10 **Examine Views and Indexes**
Learning Objectives
Describe a view (access path)
Create a View
Explain the use of indexes
Access data using an index

11 Examine the use of conditional triggers
Learning Objectives
Explain the use of triggers
Create a trigger program

12 Explore database security concepts
Learning Objectives
Explain basic database security concepts
Use the GRANT and REVOKE statements

SCC Accessibility Statement
If you have a disability and need accommodations to participate in the course activities, please contact your instructor as soon as possible. This information will be made available in an alternative format, such as Braille, large print, or cassette tape, upon request. If you wish to contact the college ADA Coordinator, call that office at 507-389-7222.

Disabilities page http://southcentral.edu/academic-policies/disability-rights.html