Syllabus CSIS 276 Introduction to SQL #0119 Online Spring 2024

Course Information

CSIS 276 Introduction to SQL Section #0119
Spring 2024 - 1/29 to 5/25 – 16 week course
3 hours lecture, 3 units
Letter, Grade, or Pass/No Pass Option

Course Description

This is an introductory course in SQL (Structured Query Language) **programming** intended for persons with basic computer literacy skills. The course is designed to teach students the fundamentals of good relational database design and how to use and maintain a database using the industry-standard data query and manipulation language, SQL. Students will use SQL to create tables, keys and indexes, handle security in the database and perform simple and complex queries.

Prequisites:

None, computer competency

Recommended Preparation

A grade of C or higher or a Pass grade in CSIS 110

Entrance Skills

Without the following skills, competencies and/or knowledge, students entering this course will be unlikely to succeed:

- Basis computer skills
- File management skills to organize, name, backup, and upload files

Instructor Information

Professor Teresa Pelkie MA, MS, Adjunct Faculty
Email: teresa.pelkie@gcccd.edu – **please use the Canvas Inbox to contact me**
Response Time: I will reply to you within 48 hours
Office: I am a part time instructor and do not have an office on campus

Course Location – Online using Canvas

Canvas Online: https://gcccd.instructure.com
Username: This is the same as your WebAdvisor login name.
Password: Your 8 digit birthdate (for example: 07158567).
Your Canvas account is available one day after you register for a class.

Tutoring

https://www.grossmont.edu/academics/programs/csis/lab-hours.php

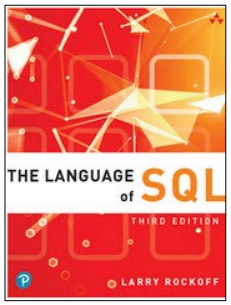
Students with Disabilities or Special Needs

Students with disabilities or students who may need academic or other accommodations should notify me within the first week of instruction. All information will be kept confidential.

Accommodations for Students with Disabilities:

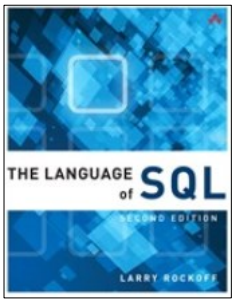
Students with disabilities who may need accommodations in this class are encouraged to notify the instructor and contact Disabled Student Programs & Services (DSPS) early in the semester so that reasonable accommodations may be implemented as soon as possible. Students may contact DSPS in person in room 60-120 or by phone (619) 644-7112 (voice). Video Phone for the Deaf [(619) 567-7712] or TTY users can call the DSPS voice number through California Relay Services.

Textbook (either 2 or 3rd edition), Software (MySQL DBMS)



3rd edition

OR



2nd edition

URL: https://larryrockoff.com/sql/

The Language of SQL, 3rd Edition or 2nd Edition
by Larry Rockoff

Published by Addison-Wesley Professional

Published Date: November, 2021
Print 3rd edition ISBN-13: 978-0137632695-5
Print 2nd edition ISBN-13: 978-0-13-465825-4

- MySQL Community Server - https://dev.mysql.com/downloads/mysql/
- NOTE: if you already have the MySQL Database Software installed (ie XAMPP), do **NOT** install the above, instead just install MySQL Workbench - https://dev.mysql.com/downloads/workbench/
- You may use MS SQL Server if you wish, but specific support will be limited

Important Dates for Deadlines

Add:	02-11-2024
Drop with Refund:	02-11-2024
Drop without "W":	02-11-2024
Withdrawal:	04-28-2024
Pass/No Pass:	05-25-2024
Final work due:	**05-24-2024 at 11:59 PM**

Attendance Policy

It is your responsibility to attend class and to log on to Canvas to obtain the materials and participate in the class. Failure to do so may result in your being dropped from the class. **Any student not participating in class for 2 consecutive weeks may be dropped from the course**. It is always the student's responsibility to drop any unattended course BY THE PUBLISHED DROP DATE. Failure to drop an unattended course will result in a grade of "F" on your transcript. The instructor will not necessarily drop students who are no longer attending class, but reserves the right to drop students who have missed the equivalent of two weeks of class or are more than two weeks behind on assignments.

Attendance is not explicitly considered in determining a student's grade. However, since material covered in each class often builds on subjects treated in previous classes, students missing a class early in the semester may have trouble catching up in the course.

Canvas Overview and Support

You are expected to know how to use the Canvas system. Some orientation material can be found in our Canvas course after logging in. For additional training material, login instructions, student orientations, and support information please visit https://guides.instructure.com/m/4212 and https://vimeo.com/74677642 .

Useful Resources

Online Student Readiness Tutorials - http://apps.3cmediasolutions.org/oei/

Canvas Student Quick Guide - https://guides.instructure.com/m/4212

Course Objectives

Upon successful completion of this course the student will be able to:

- Appraise and examine the history of SQL and its use with relational databases.
- Compose and construct a relational database structure.
- Demonstrate the understanding of tables and data relationships.
- Analyze the processes involved in the normalization and optimization of databases. Formulate Structured Query Language (SQL) statements and queries to create and populate a relational database, sort and group the data in a database, perform complex joins and extract subqueries of the data.
- Evaluate and assess database management features including security, performance and integrity.

Student Learning Outcomes

Upon successful completion of the course the student will be able to:

- Use Structured Query Language to create, populate, and maintain a normalized and optimized database using a professional level relational database.
- Use SQL to manipulate data in a relational database by sorting and grouping the data and extract and/or view the data using complex queries involving joins, subqueries and views.

Course Content

A. History of SQL and its use with relational databases
B. Characteristics of good relational database design
    1. Compare and contrast One-to-One, One-to-Many, Many-to-One and Many-to-Many relationships.
    2. Describe the concept of normalization in relation to the optimization of databases.
C. Create relational database using indexes
D. Alter the database structure and maintain data integrity.

E. SELECT statement in creating simple and complex queries.
F. SQL statements to sort data to be extracted from the database.
G. Perform simple aggregate functions such as COUNTing the data.
H. Various ways of grouping data in a query including the understanding of the NULL value and how to work with it.
I. Joining tables in order to select data from multiple tables into one subset.
J. Concepts of subqueries
    1. Compare the advantages and disadvantages of subqueries and joins.
    2. Differences between the use of a subquery or a join.
    3. Write subqueries returning a single and multiple values.
    4. Optimize queries for faster execution.

Course Content Continued

K. "View" commands
    1. Explanation of the working of "views".
    2. Contrast views with other methods of obtaining data.
    3. Modification of data using views.
L. User and group security requirements
    1. Write SQL statements to add security to a database table.
    2. Meaning and use of transactions.
    3. Entity and referential integrity and when to apply them.

Grossmont College Policy on Cheating and Plagiarism:

Academic Integrity:

It is the responsibility of each student to understand the actions and behaviors that constitute academic dishonesty, including plagiarism and cheating, within each class as well as other venues on campus. Students are encouraged to ask questions of instructors and are expected to read the college's statement on Academic Fraud (located in the class schedule). Penalties for actions inconsistent with classroom, library and College expectations for academic integrity range from a failing grade on an assignment, quiz, exam, paper, or project (which may lead to a failing grade in the course) to, under certain conditions, suspension, or expulsion from a class, program, or the college. For more information and/or further clarification, please consult with your instructor or contact the Student Affairs Office.

Supervised Tutoring Referral:

Students are referred to enroll in the following supervised tutoring courses if the service indicated will assist them in achieving or reinforcing the learning objectives of this course: IDS 198, Supervised Tutoring to receive tutoring in general computer applications in the Tech Mall; English 198W, Supervised Tutoring for assistance in the English Writing Center (Room 70-119); and/or IDS 198T, Supervised Tutoring to receive one-on-one tutoring in academic subjects in the Tutoring Center (Room 70-229, 644-7387). To add any of these courses, students may obtain Add Codes at the Information/Registration Desk in the Tech Mall. All Supervised Tutoring courses are non-credit/non-fee. However, when a student

registers for a supervised tutoring course, and has no other classes, the student will be charged the usual health fee.

Incomplete Grade – I do not give Incompletes so please plan accordingly

Any students seeking an "I" (incomplete) for a grade must file a petition citing "unforeseeable, emergency, and justifiable" reasons for this grade. An “I” is not intended for students who are behind and need more time, but for students who have been participating all along.

Assessment Methods

This course will use a variety of methods to assess your learning of the course objectives. You will read the textbook, take quizzes, and submit assignments. There will be an instructional lab handout for some sessions to show you how to apply the concepts and use the database and language.

Methods of Evaluation

The student will be expected to demonstrate a basic understanding of the course objectives by obtaining a passing grade on quizzes and assignments.

Due Dates and Lateness

Due dates will be posted on Canvas for all quizzes. tests, and assignments and hands. You must submit your course work by the due date indicated. **Late work is not accepted.** If you need to be late, please let me know. If you get behind, please let me know so that I can assist you.

Grading

A rubric and detailed instructional handout will accompany each assignment. Feedback will be provided and grades will be posted on Canvas.

A	90-100%	900 – 1000 points
B	80-89%	800 – 890 points
C	70-79%	700 – 790 points
D	60-69%	600 – 690 points
F	Below 59%	590 points and under

Activity	Point Value
Quizzes / Tests	700
Assignments	300
Total	1000

Due dates and point value will be posted on Canvas.
Most work is due the following Monday at 11:59 PM.

Schedule of Material to be Covered each Week

Session	Section	Description
1 Jan 29		**Getting started with SQL and MySQL**
	A	Storing data using a computer system and concepts of relational databases
	B	SQL, the language, and databases that provide SQL support
	C	Introduction to MySQL
2 Feb 5		**How data is defined and stored in a database**
	A	Columns, Rows and Tables
	B	Column names and datatypes
	C	NULL and how it is used
	D	Primary keys
		Quiz – 50 points
3 Feb 12		**Retrieving data from a database - basics**
	A	The basics of the SELECT statement
	B	Using column aliases
	C	Working with functions
		Quiz – 50 points
4 Feb 20 19th holiday		**Retrieving data from a database - sorting**
	A	The SELECT statement ORDER BY clause
	B	Sorting in ascending and descending sequence
	C	Sorting when NULL values are present
		Quiz – 50 points
5 Feb 26		**Retrieving data from a database - selecting, part 1**
	A	The SELECT statement WHERE clause
	B	How to specify selection criteria using comparison operators
	C	Selecting when NULL values are present
		Quiz – 50 points
6 Mar 4		**Retrieving data from a database - selecting, part 2**
	A	Using multiple selection criteria in the WHERE clause
	B	The LIKE operator, patterns and wildcards
	C	The IN and BETWEEN operators
		Quiz – 50 points
7 Mar 11		**Retrieving data from a database - selecting, part 3**
	A	CASE expressions
	B	Aggregate functions and COUNT
	C	The DISTINCT keyword
		Quiz – 50 points

8 Mar 18		**Summarizing Data**
	A	The GROUP BY keyword
	B	Sorting and selecting with GROUP BY
		Quiz – 50 points
Spring Break March 25 – 30		
9 Apr 1		**Working with Joins, part 1**
	A	Concepts of table joins
	B	Creating an Inner Join for two or more tables, table and column aliases
		Quiz – 50 points
10 Apr 8		**Working with joins, part 2**
	A	Outer joins, left joins
	B	Other types of joins
		Quiz – 50 points
11 Apr 15		**Views**
	A	Concepts of Views
	B	Create and maintain a view
		Quiz – 50 points Assignment – 50 points
12 Apr 22		**Subqueries**
	A	Using a subquery for selection
	B	Other uses for subqueries
		Quiz – 50 points
13 Apr 29		**Unions and Stored Procedures**
	A	The UNION operator
	B	How to create and work with stored procedures
		Quiz – 50 points Assignment – 50 points
14 May 6		**Modifying data and the database**
	A	The INSERT, UPDATE and DELETE statements
	B	Using DDL to define tables
	C	Keys and Indexes
		Quiz – 50 points
15 May 13		**Database Design and Applications**
	A	Principles of database design
	B	Exporting and importing data
		Quiz – 50 points Final Assignment – 200 points
16 May 20		Finish Up Work No Final Exam **Final work is due by May 24 at 11:59 PM**