North South University
Department of Electrical and Computer Engineering
CSE 311L: Database Systems Lab - (Section 3)
Course Outline – Fall 2025

Course Objectives: The lab course aims to make students able to apply their knowledge in developing and using relational databases. The labs cover efficient use of SQL for complicated tasks and teach a database language. The main topics of the laboratory applications are: SQL Queries (both simple & advanced), use of triggers, stored procedures and functions for efficient and more secure implementations of database applications. Upon completion of the course, the students learn how to design and develop database applications using one of the major DBMSs.

Faculty:
Name: Dr. Sumaiya Tabassum Nimi (STI)
Office: SAC 1010 B
Email: sumaiya.nimi@northsouth.edu

Lab Instructor:
Name: Marilyn Dip Peris
Email: marilyn.peris.253@northsouth.edu

Lab Timing: R 11:20 AM – 02:30 AM   **Room no:**   LIB-604

Marks Distribution

Attendance	5
Lab Evaluation	20
Mid	25
Final	30
Total	80 (Converted to 20%)

Grading Policy: Standard NSU grading policy will be followed for this lab.

Tentative Lab Schedule

Week		Topic
1	*Part A*	- Create database tables - Describe the data types that can be used when specifying column definition - Table naming rules & Fields data types
	Part B	- Insert rows into the created table - Create Department Table - Execute a basic SELECT statement
2	*Part A*	- Basic SELECT Statement - Selecting All Columns, Specific Columns - Arithmetic Expressions, Using Arithmetic Operators, Parenthesis - Defining a Column Alias
	Part B	- Eliminating Duplicate Rows - Displaying Table Structure - Concatenation Operator
3	*Part A*	- Limiting the Rows Selected - Restricting with Character Strings and Dates - Comparison Conditions - Other Comparison Conditions
	Part B	- Using the LIKE Condition - Using the NULL Conditions - Logical Conditions
4	*Part A*	- Obtaining Data from Multiple Tables - Generating a Cartesian Product - Retrieving Records with Equijoins - Joining a Table to Itself - Creating Joins with the ON Clause
	Part B	- Creating Three-Way Joins with the ON Clause `LEFT OUTER JOIN` `RIGHT OUTER JOIN` `FULL OUTER JOIN` - Additional Conditions
5	*Part A*	- Types of Group Functions - Using the AVG and SUM Functions - Using the MIN and MAX Functions - Using the COUNT Function

		● Using the GROUP BY Clause
	Part B	● Using the GROUP BY Clause on Multiple Columns ● Illegal Queries Using Group Functions ● Excluding Group Results: The HAVING Clause ● Nesting Group Functions
6	*Part A*	● Using a Subquery to Solve a Problem ● Subquery Syntax ● Single-Row Subqueries ● Executing Single-Row Subqueries ● Using Group Functions in a Subquery
	Part B	● Single-row operator with multiple-row subquery ● Multiple-Row Subqueries ● Using the ANY Operator ● Using the ALL Operator
7	*Part A*	● Copying Rows from Another Table ● Updating Rows in a Table ● Updating Rows Based on Another Table
	Part B	● The ALTER TABLE Statement ● Adding a Column ● Modifying a Column ● Dropping a Column ● Changing the Name of an Object ● Truncating a Table ● Add PRIMARY KEY/ FOREIGN KEY constraints ● CREATE VIEW
8		● What is a Trigger? ● The benefit of Active Database ● Creating trigger updating each department's total salary for insert an employee tuple ● Creating trigger for updating each department's total salary by the update of salary of an employee ● Creating trigger for updating each department's total salary when an employee's department is updated ● Define Stored Procedure/function ● Define a function that returns the size of a department based on number of employees in a department
9	**Final Exam**	

Class Etiquette: Distracting others in lab class is violating others' rights to be attentive. So, cell phones cannot be turned on during the class time. Group discussion is encouraged, and personal discussion is discouraged during class time.

Lab Evaluation: The lab evaluation score will be awarded based on tasks given in class.

Exams: All exams will be closed book and closed notes. No personal electronic devices will be allowed during exams. Nobody will be allowed to go outside the exam hall. Further instructions will be provided before the examination.

Academic Honesty: Any means of unauthorized assistance in preparing materials that a student submits as original work is deemed to be cheating. Any kind of cheating or plagiarism will make your obtained marks zero for that assignment, quiz, or exam. Both who copied and who let others copy will be treated the same, meaning that both will get a zero for that assignment, quiz, or exam.

Notes:
- Attendance will be taken at the beginning of the class.
- Assignments should be submitted within the due date. Any late submission will not be counted.
- Using cellphones is not allowed in the classroom and personal laptops are not allowed in exams.
- Date of exams will be announced in advance.