

Program : Diploma in Computer Engineering / Cyber Forensics and Information Security / Robotic Process Automation	
Course Code : 3136	Course Title: Database Management Systems Lab
Semester : 3	Credits: 1.5
Course Category: Program Core	
Periods per week: 3 (L:0 T:0 P:3)	Periods per semester: 45

Course Objectives:

- Impart to design, develop and manage relational databases using SQL.
- Understand the design of databases with constraints for real world applications.

Course Prerequisites:

Topic	Course code	Course name	Semester
Basic programming concepts		Introduction to IT systems Lab	I
Programming concepts		Problem Solving & Programming	II

Course Outcomes :

On completion of the course, the student will be able to:

CO _n	Description	Duration (Hours)	Cognitive Level
CO1	Make use of DDL, DML commands to construct and manage databases	12	Applying
CO2	Make use of aggregate functions, join operations, views and nested queries	11	Applying
CO3	Develop SQL programming using functions, procedures, cursors and trigger	12	Applying
CO4	Design and develop databases for real world applications	7	Applying
	Lab Exam	3	

CO – PO Mapping

Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3			3			
CO2	3			3			
CO3	3			3			
CO4	3	3	3	3		3	

3-Strongly mapped, 2-Moderately mapped, 1-Weakly mapped

Course Outline

Module Outcomes	Name of the Experiment	Duration (Hours)	Cognitive Level
CO1	Make use of DDL, DML commands to construct and manage databases		
M1.01	Experiment with DDL commands-CREATE, ALTER, DROP	2	Applying
M1.02	Apply integrity constraints - PRIMARY KEY, NOT NULL, DEFAULT, CHECK, UNIQUE, FOREIGN KEY	2	Applying
M1.03	Apply DML commands - INSERT, SELECT, UPDATE and DELETE to manipulate databases	4	Applying
M1.04	Experiment with WHERE, DISTINCT, BETWEEN, ORDER BY, IN, LIKE, set operations in SELECT statements for data retrieval from the databases	4	Applying
CO2	Make use of aggregate functions, join operations, views and nested queries		
M2.01	Identify aggregate functions -SUM, AVG, COUNT, MIN, MAX - GROUP BY and HAVING clause	3	Applying
M2.02	Develop nested queries	3	Applying
M2.03	Develop SQL queries for inner and outer joins.	3	Applying
M2.04	Construct various views of the table	2	Applying
	Lab Exam – I	1.5	

CO3	Develop SQL programming using functions, procedures, cursors and trigger		
M3.01	Experiment with stored procedures for simple tasks	3	Applying
M3.02	Utilize stored functions for database manipulations	3	Applying
M3.03	Experiment with cursors for database operations	3	Applying
M3.04	Develop SQL programs using triggers	3	Applying
CO4	Design and develop databases for real world applications		
M4.01	Open Ended Experiments**	7	Applying
	Lab Exam – II	1.5	

** - Sample Open Ended Experiments

(Not for End Semester Examination but compulsory to be included in Continuous Internal Evaluation.) Students can-do open-ended experiments as a group of 2-3. There is no duplication in experiments between groups.

Consider the following scenarios:

- Student information system
- Hostel management
- Library management
- Super market billing system

Students should gather the required information, draw the ER diagrams, map them to the relative databases and normalize the tables.

Text / Reference

T/R	Book Title/Author
T1	Elmasri, Navathe, Database Systems ,6th ed., Pearson,2011
R1	Sliberschatz A., H. F. Korth and S. Sudarshan, Database System Concepts, 6 th ed, McGraw Hill, 2011.
R2	ITL Education Solutions ltd, Introduction to Database Systems, Pearson,2011

Online Resources

Sl.No	Website Link
1	https://www.w3schools.com/sql
2	https://www.tutorialspoint.com/sql
3	https://www.javatpoint.com/sql
4	https://www.guru99.com/sql