Course Code	Course Title	L	T	P	C
PMCA503P	Database Systems Lab	0	0	2	1
Pre-requisite	NIL		Syllabus version		
			1.0		

Course Objectives:

1. To understand, analyze and design databases.
2. To work on existing database systems, and create new relational databases and analyze the design.

Course Outcomes:

1. Use of SQL interface of a RDBMS package to create, secure, populate and query DB.
2. Use procedural language to develop comprehensive solutions for all types of applications.
3. Develop a Front-end application to perform transactions on SQL and No SQL database.

Indicative Experiments		Hours
1.	**Database Creation** Viewing all Databases - Creating a Database - Viewing all Tables in a Database - Creating Tables - Dropping / Truncating/Renaming Tables, Creating Views, Set the New Constraints to the Table - Drop the Constraints/Modify Constraints, etc.	6 Hours
2	**Database Manipulation** Inserting / Updating / Deleting Records in a Table - Using Transaction Control Commands - Commit, Rollback and Save point	2 Hours
3.	**SET Operators and Built-in Functions** Union, Intersection, Minus, and Queries involving Date Functions - String Functions and Math Functions	2 Hours
4.	**Complex Queries (Nested and Join Queries)** Join Queries-Inner Join, Outer Join - Subqueries-With IN clause - With EXISTS clause	4 Hours
5.	**PL/SQL Programs** Variables, Constants, Loops, Conditional Statements, Cursor, Procedure, and Functions	8 Hours
6.	**No SQL Databases** Mongo DB- Create, CRUD operation.	2 Hours
7.	Design and develop business applications using SQL, PL/SQL and No SQL.	6 Hours
	Total Laboratory Hours	**30 hours**

Text Book(s)

1	Bob Bryla, Kevin Loney, "Oracle Database 12c The Complete Reference", 2013, Illustrated Edition, McGraw-Hill Education, (Oracle Press).
2	Steven Feuerstein, Bill Pribyl, "Oracle PL/SQL Programming", 2014, 6th Edition, O'Reilly Media, Inc.
3	Shannon Bradshaw, Eoin Brazil, Kristina Chodorow, "MongoDB: The Definitive Guide: Powerful and Scalable Data Storage", 2019, 3rd Edition, O'Reilly.

Mode of assessment: CAT, Exercises, FAT			
Recommended by Board of Studies	04-05-2023		
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