University of Global Village (UGV), Barishal.
Sessional & Lab Module

Department Name: CSE   Semester: 7th

Subject Name:	RDBMS Programming Lab			Total Class Hour :	2940m (49h)
Subject Code :	CSE 402	Total Class:	24	Total Practice Hour :	4530m (75.5h)
Directed by :	Md. Abdul Aziz			Total Hour :	7470m (124.5h)

Class No	Skill Title	Details & Training Procedure	Class Hour	Practice Hour	Outcomes	Note
01	**Introduction to RDBMS & SQL**	Introduction to databases, types of databases, relational model, tables, rows, columns. Overview of DBMS vs RDBMS. Install MySQL / MariaDB, GUI tools (phpMyAdmin, MySQL Workbench). Create first database and table.	120m	240m	Students can install DBMS, create DB, tables. Understand basic RDBMS concepts.	
02	**Data Types & Basic Queries**	Overview of MySQL data types (INT, VARCHAR, DATE, etc.). Writing SELECT queries. Using WHERE, ORDER BY, and basic filtering.	120m	240m	Understand different SQL data types. Retrieve filtered data.	

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03	**Data Manipulation Language (DML)**	INSERT, UPDATE, DELETE operations. Handling NULL values.	120m	300m	Capable of modifying table data effectively.	
04 & 05	**Constraints & Keys**	Primary key, foreign key, unique, not null, check constraints. Create relationships between tables.	240m	480m	Understand how to enforce data integrity with constraints. Create relational links between tables.	
06	**Assessment 1**	Hands-on assessment covering Classes 1–5.	120m	—	Assessment 1	
07	**Joins in SQL**	INNER JOIN, LEFT JOIN, RIGHT JOIN, FULL OUTER JOIN (emulation in MySQL). Practical examples.	120m	180m	Capable of retrieving related data from multiple tables.	
08 & 09	**Aggregate Functions & Grouping**	COUNT(), SUM(), AVG(), MIN(), MAX(). GROUP BY, HAVING clauses.	240m	450m	Can summarize data with aggregates and group results.	

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10 & 11	**Subqueries & Nested Queries**	Single-row and multi-row subqueries. Correlated subqueries.	240m	480m	Understand subquery concepts and applications.	
12	**Assessment 2**	Covers JOINs, Aggregates, Subqueries.	120m	—	Assessment 2	
13 & 14	**Database Design & Normalization**	1NF, 2NF, 3NF concepts. Designing normalized schemas. ER Diagrams.	240m	300m	Capable of designing efficient, normalized databases.	
15 & 16	**Views, Indexes & Stored Routines**	Creating and managing views, indexes, stored procedures, and functions.	240m	360m	Can improve query performance and encapsulate logic.	
17 & 18	**Transactions & Security**	COMMIT, ROLLBACK, SAVEPOINT. User creation, privileges, GRANT/REVOKE.	240m	360m	Understand database transaction control and security management.	
19 & 20	**Backup & Recovery**	Export/import databases, mysqldump, restoring from backups. Error handling in SQL scripts.	240m	420m	Capable of backing up and restoring databases.	

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21	**Assessment 3**	Practical test on advanced SQL and database management.	120m	—	Assessment 3	
22 & 23	**Group Project**	Develop a real-life RDBMS-based application (e.g., Student Management System).	240m	720m	Demonstrate practical ability with RDBMS concepts.	
24	**Final Assessment**	Comprehensive final practical covering entire syllabus.	180m	—	Final Assessment	