

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

Department Name: CSE

Semester: 4th

Subject Name:	Database Management System Sessional.			Total Class Hour :	2940m (49h)
Subject Code :	CSE 0612-2208	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 DBMS	Overview of database systems, DBMS vs RDBMS, types of DBMS (Relational, NoSQL, Hierarchical, Network), basic terminology (tables, rows, columns, schema), installing MySQL/PostgreSQL, setting up GUI tools (MySQL Workbench/phpMyAdmin).	120m	240m	Able to install DBMS software, understand core concepts, and create a basic database.	
02	Database Models & Basic Commands	Relational model, entity-relationship concepts, SQL syntax basics, creating and dropping databases/tables.	120m	240m	Understand data models and structure creation in SQL.	
03	Data Definition Language (DDL)	CREATE, ALTER, DROP commands; defining table structures with data types; constraints (NOT NULL, UNIQUE, DEFAULT).	120m	300m	Can create and modify database schemas using DDL.	
04 & 05	Data Manipulation Language (DML)	INSERT, UPDATE, DELETE; basic SELECT queries with WHERE and ORDER BY; filtering and sorting data.	240m	480m	Retrieve and modify data efficiently.	

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06	Assessment 1	Covers Classes 1–5 (basic DBMS setup, DDL, DML, basic queries).	120m	—	Evaluate foundational DBMS skills.	
07	Joins	INNER, LEFT, RIGHT, and FULL JOIN concepts; practical examples combining data from multiple tables.	120m	180m	Retrieve related data from multiple tables using joins.	
08 & 09	Aggregate Functions & Grouping	COUNT, SUM, AVG, MIN, MAX; GROUP BY and HAVING clauses.	240m	450m	Summarize and group data using aggregate functions.	
10 & 11	Subqueries & Nested Queries	Single-row, multi-row, and correlated subqueries; query optimization basics.	240m	480m	Apply advanced data retrieval techniques.	
12	Assessment 2	Covers Joins, Aggregates, Subqueries.	120m	—	Evaluate intermediate SQL skills.	
13 & 14	Database Design & Normalization	Designing schemas, ER diagrams, normalization (1NF, 2NF, 3NF), identifying keys and dependencies.	240m	300m	Create normalized, efficient database designs.	
15 & 16	Indexes, Views & Stored Routines	Creating and managing indexes, views, stored procedures, and functions; improving performance.	240m	360m	Optimize queries and encapsulate business logic.	
17 & 18	Transactions & Security	COMMIT, ROLLBACK, SAVEPOINT; user privileges, GRANT/REVOKE, database security practices.	240m	360m	Manage transactions and secure data access.	

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19 & 20	Backup & Recovery	Export/import data, mysqldump, restoring from backups, handling database corruption.	240m	420m	Backup and restore databases effectively.	
21	Assessment 3	Covers advanced DBMS concepts.	120m	—	Assess readiness for project work.	
22 & 23	Group Project Work	Develop a real-life DBMS application (e.g., Student Management System, Library Database).	240m	720m	Demonstrate applied DBMS knowledge.	
24	Final Assessment	Comprehensive final practical.	180m	—	Evaluate complete course learning.	