

# **DATABASE MANAGEMENT SYSTEM (MySQL) – SYLLABUS**

## **Introduction & Database Concepts**

Introduction to database, need for database, history of MySQL, database, types of databases, relational database, advantages of DBMS.

## **Database Management System**

Definition of DBMS, components of DBMS, types of DBMS, advantages and disadvantages, MySQL features and comments.

## **SQL & Its Components**

Introduction to SQL, DDL, DML, DQL, DCL, TCL and their uses.

### **Data Definition Language (DDL)**

CREATE, DROP, ALTER, TRUNCATE, RENAME – syntax and examples.

### **Data Manipulation Language (DML)**

INSERT, UPDATE, DELETE – syntax, usage and examples.

### **Data Query Language (DQL)**

SELECT statement, filtering data using WHERE clause.

### **Data Control Language (DCL)**

GRANT, REVOKE, DENY – user privileges and security.

### **Transaction Control Language (TCL)**

COMMIT, ROLLBACK, SAVEPOINT – transaction handling.

## **Data Types & Table Creation**

MySQL data types – numeric, character, date/time. Database creation, table creation with syntax.

## **ALTER Statement**

ADD, MODIFY, CHANGE, DROP columns using ALTER command.

## **Constraints**

NOT NULL, UNIQUE, PRIMARY KEY, FOREIGN KEY, CHECK, DEFAULT – purpose and usage.

## **Difference between DROP, TRUNCATE and DELETE**

Comparison based on structure, data removal, rollback support.

## **Transactions**

ACID properties, transaction management.

## **Operators & Filters**

Arithmetic, logical and comparison operators.

## **Clauses**

WHERE, ORDER BY, GROUP BY, IN, BETWEEN, OFFSET, LIMIT, IS, LIKE.

## **Joins**

INNER JOIN, LEFT JOIN, RIGHT JOIN, CROSS JOIN, SELF JOIN.

## **Other SQL Concepts**

Delimiter, UNION, UNION ALL, Views, Stored Procedures.