

**Govt. Polytechnic Hamirpur (H.E.)**  
**Lecture Planning (Theory)**

Branch : Computer Engg.

Semester: 4<sup>th</sup>

Subject : Database Management System

Session: Feb-2024

Teacher : Vikas Soni

Class Room: L103

Sr. No.	No. of Lectures	Chapter/ Unit Description	Detail of Contents	Reference Resources	Remarks
1.	1-8	<b>Introduction to Database Systems</b>	Database Systems, Database and its Purpose, Comparison of Database Approach with File-based and Traditional Record Keeping Approaches, Advantages and Disadvantages of Database Approach, Classification of Database Users, Role of DBA	<b>R3,R2</b>	
2.	9-20	<b>Database System Concepts and Architecture</b>	Data Models, Schemas, and Instances; ANSI/SPARC Architecture of a Database System, External Level, Conceptual Level, Internal Level, Mappings; Data Independence, Logical Data Independence, Physical Data Independence	<b>R3,R2</b>	
3.	21-30	<b>Relational and E-R Models</b>	Relational Database Model, Relations, Attributes, Tuples, Domains; Prime and Non-prime Attributes, Key – Primary Key, Candidate Keys, Alternate Keys, Superkey, Secondary Key, Foreign Keys; Database Constraints, Entity Relationship Model – Entity, Entity Sets, Strong and Weak Entities, Attributes, and Keys; Association, Relationship, Roles, Structural Constraints, ER Diagrams	<b>R3,R2</b>	
4.	31-40	<b>Database Dependencies and Normalization</b>	Functional Dependencies, Trivial and Non-trivial Dependencies, Non-Loss Decomposition, Normalization, First, Second and Third Normal Forms, Boyce-Codd Normal Form	<b>R3,R2</b>	
5.	41-52	<b>Overview of MySQL</b>	MySQL, Features of MySQL, Database Objects - Database, Table, View, Index, Alias; MySQL Object Naming, Keywords, User-defined Variables, Data Types - Numeric, Date and Time, String Types; Operators: Arithmetic, Logical, Relational, String; MySQL System Schema, MySQL Database Users and Roles, Database Privileges, Access Control and Account Management, MySQL Server and MySQL Client	<b>R1,R3</b>	
6.	53-64	<b>Structure Query Language using MySQL</b>	SQL, DDL Statements : CREATE, DROP, ALTER, RENAME; DML Statements: INSERT, UPDATE , DELETE, SELECT; SELECT Clauses - FROM, WHERE, ORDER BY, GROUP BY, HAVING; Join Operations - Inner, Left, Right and Outer Joins; Subqueries, Set Operations - Union, Intersect, Minus; GRANT and REVOKE Privileges; Transaction Statements - COMMIT, ROLLBACK, SAVEPOINT; Prepared Statements, SQL Functions - ABS, ROUND, FLOOR, CEIL, SQRT, POWER, TRUNCATE, LOG, NOW, DATE, TIME, CURDATE, CURTIME, DAY, MONTH, YEAR, DATEDIFF, DATE_SUB, DATE_ADD, DATE_FORMAT, CONCAT, LENGTH, UPPER, LOWER, LEFT, RIGHT, LTRIM, RTRIM, MAX, MIN, SUM, AVG, COUNT, CAST, STR_TO_DATE	<b>R1,R3</b>	

**R1**-Fundamentals of Database Systems by ElmasriRamez&NavatheShamkant, Pearson Education

**R2**-An Introduction to Database Systems by C.J. Date, Pearson Education

**R3**-MySQL tutorials at <https://www.w3schools.com/mysql>

Signature of Teacher with Date

Signature of H.O.D.