Curriculum Planner

(Department of Computer Science)

Course: **B.A.(P) Computer Application**

Semester: **V**

Paper: **Database Management Systems**

Teacher Name: - **Sushil Malik**

S. No.	Unit Name	Chapters	References	Schedule(Approximate)
1.	Introduction to Database: Purpose of database system, Characteristics of database approach, data models, database management system, database system architecture, three-schema Architecture, components of DBMS, data independence, and file system approach vs database system approach.	1.1 - 1.3, 1.4 - 1.5, 1.6, 1.8, 2.1 - 2.2, 2.3.1, 2.4 -2.4.1, 2.6	1	October 2024
2.	Entity Relationship (ER) Modeling: conceptual data modeling - motivation, entities, entity types, attributes, relationships, relationship types, constraints on relationship, Entity Relationship diagram notation	3.1-3.7, 3.9.1	1	September 2024
3.	Relational Data Model: Update anomalies, Relational Data Model - Concept of relations, schema-instance distinction, keys, relational integrity constraints, referential integrity and foreign keys, relational algebra operators and queries.	5, 8.1 - 8.3.2, 8.4 (except 8.4.3) 8.5	1	
4.	Structured Query Language (SQL): Querying in SQL, DDL to create database and tables, table constraints, update database-update behaviours, DML, aggregation functions group by and having clauses, retrieve data from the database, generate and query views. Access and manipulate databases using ODBC. Basic Database administration SQL commands.	6.1-6.4, 7 - 7.1.8 (except 7.1.4), 7.3.1-7.3.2, 7.4	1	October 2024
		2*(Pg. 48), 3*(Listing 3.4)	2	
		11*(Pg. 356-357), 18*(Pg. 532-552)	3	
5.	Database Design: Mapping an Entity Relationship (ER) model to relational database, functional dependencies and Normal forms, 1NF, 2NF, 3NF and BCNF decompositions and desirable properties of	9.1, 14.1 - 14.5 (up to page 488), Chapter 15 15.1.1 (only Armstrong Axioms without		November 2024

	them.	proof and the Closure of X under F to find the primary key)	1	
6.	Data Storage and Indexes: Need of file indexes, file organizations, index structures, single- and multi-level indexing, concurrent execution of transactions, ACID properties **Revision, Doubt solving, Mock Practical**	16.5, 17.1.1, 17.2 (up to page 613), 20.1.1- 20.1.3, 20.3	1	

*** Only for demonstration purpose.**

References

1. Elmasri, R., Navathe, B. S. Fundamentals of Database Systems, 7th Edition, Pearson Education, 2015.
2. Silberschatz, A., Korth, H. F., Sudarshan S. Database System Concepts, 7th Edition, McGraw Hill, 2019.
3. Murach J. Murach's MySQL, 3rd edition, Pearson, 2019

Additional References

1. Ramakrishnan, R., Gehrke J. Database Management Systems, 3rd Edition, McGrawHill, 2014
2. Silberschatz, A., Korth, H. F., Sudarshan S. Database System Concepts, 7th Edition, McGraw Hill, 2019.
3. Connolly, T. M., Begg, C. E. Database Systems: A Practical Approach to Design, Implementation, and Management, 6th edition, Pearson, 2019.