20CS2702A - DATABASE MANAGEMENT SYSTEMS

Offering Branches	CSE		
Course Category:	Open Elective -IV	Credits:	3
Course Type:	Theory	Lecture-Tutorial-Practical:	3-0-0
Prerequisites:	-	Continuous Evaluation:	30
		Semester End Evaluation:	70
		Total Marks:	100

Course Outcomes

Upon successful completion of the course, the student will be able to:

CO1	**Understand** the basic concepts of database management systems	**K2**
CO2	**Apply** SQL commands to find solutions for a given application	**K3**
CO3	**Apply** ER Modelling to design a database application	**K3**
CO4	**Apply** normalization techniques to improve database design.	**K3**

Contribution of Course Outcomes towards achievement of Program Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2													
CO2	3								2	2			3	
CO3	3								2	2			3	
CO4		2							2	2			3	3
Avg.	3	2							**2**	2			3	3

1- Low **2-Medium** **3-High**

Course Content

UNIT-1	**Introduction to Databases:** Characteristics of the Database Approach, Advantages ofusing the DBMS Approach, A Brief History of Database Applications. **Overview of Database Languages and Architectures:** Data Models, Schemas andInstances, Three-Schema Architecture and Data Independence, Database Languages and Interfaces, Database System environment, Centralized and Client-ServerArchitecture for DBMS.	**CO1**
UNIT-2	**Relational Model:** The Relational Model Concepts, Relational Model Constraints and Relational Database Schemas. **SQL:** Data Definition, Constraints, Basic Queries and Updates, Views(Virtual Tables)in SQL	**CO2**
UNIT-3	**Conceptual Data Modeling :** High-Level Conceptual Data Models for Database Design, A Sample Database Application, Entity Types, Entity Sets, Attributes and Keys, Relationship Types, Relationship Sets, Roles, and Structural Constraints, Weak Entity Types. **ER-Diagrams:** Refining the ER Design, ER Diagrams, Naming Conventions and Design Issues	**CO3**
UNIT-4	**Database Design Theory**: Functional Dependencies, Normal forms based on Primary Keys, Second and Third Normal Forms, Boyce-Codd Normal Form.	**CO4**
UNIT-5	**Transaction Processing**: Introduction, Transaction and System Concepts, Desirable Properties of Transactions. **Introduction to Protocols for Concurrency Control in Databases:** Two-Phase Locking Techniques for Concurrency Control - Types of Locks and System Lock Tables.	**CO1**

Learning Resources

Text Books	1. Database Systems Models, Languages, Design and Application Programming, Ramez 2. Elmasri, Shamkant B.Navathe, 6th Edition, Pearson.
Reference Books	1. Data base Management Systems, Raghurama Krishnan, Johannes Gehrke, 3rd Edition, TMH. 2. Data base System Concepts, Abraham Silberschatz, Henry F Korth, S.Sudarshan, 5th Edition, Mc Graw Hill.
E-Resources & other digital material	1. https://nptel.ac.in/courses/106/105/106105175/ 2. https://onlinecourses.nptel.ac.in/noc21_cs04/ 3. https://nptel.ac.in/courses/106/106/106106093/