DATABASE MANAGEMENT SYSTEMS

Course Code	19CS2501A	Year	III	Semester	I
Course Category:	Inter Disciplinary Elective	Branch	IT/ME/EEE/ ECE/CE	Course Type	Theory
Credits:	3	L – T – P	3 – 0 – 0	Prerequisites:	Nil
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	L2
CO2	Understand normalization techniques with simple examples.	L
CO3	Apply SQL commands to create tables for a given database application	L3
CO4	Apply ER Model concepts to draw ER Diagrams for a given database application and make an effective report.	L3

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:Substantial, 2: Moderate, 1:Slight)

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

Course Content		
UNIT-1	**Introduction to Databases:** Characteristics of the Database Approach, Advantages of using the DBMS Approach, A Brief History of Database Applications. **Overview of Database Languages and Architectures:** Data Models, Schemas and Instances, Three-Schema Architecture and Data Independence, Database Languages and Interfaces, Database System environment, Centralized and Client-Server Architecture 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	CO3
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	CO4
UNIT-4	**Database Design Theory**: Functional Dependencies, Normal forms based on Primary Keys, Second and Third Normal Forms, Boyce-Codd Normal Form.	CO2

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 Elmasri, Shamkant B.Navathe, 6th Edition, Pearson.
References
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 and other Digital Material