DATABASE MANAGEMENT SYSTEMS

Course Code	19CS2501A	**Year**	III	**Semester**	I
Course Category	Inter Disciplinary Elective-I	**Branch**	Common to All	**Course Type**	Theory
Credits	3	**L – T – P**	3 – 0 – 0	**Prerequisites**	Nil
Continuous Internal Evaluation	30	**Semester End Evaluation**	70	**Total Marks**	100

Course Outcomes		**Levels**
After 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.	L2
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-High, 2: Medium, 1: Low)

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

Syllabus

Unit No.	**Contents**	**Mapped COs**
I	**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
II	**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	CO`3
III	**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

IV	**DATABASE DESIGN THEORY**: Functional Dependencies, Normal forms based on Primary Keys, Second and Third Normal Forms, Boyce-Codd Normal Form.	CO2
V	**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 Recourse(s)
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.