

DATABASE MANAGEMENT SYSTEMS

Course Code	19CS2501C	Year	III	Semester	I
Course Category:	Inter Disciplinary Elective	Branch	ME	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	<p>Transaction Processing: Introduction, Transaction and System Concepts, Desirable Properties of Transactions.</p> <p>Introduction to Protocols for Concurrency Control in Databases: Two-Phase Locking Techniques for Concurrency Control - Types of Locks and System Lock Tables.</p>	CO1
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Learning Resources

Text books

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| <ol style="list-style-type: none"> 1. DATABASE SYSTEMS Models, Languages, Design and Application Programming, Ramez Elmasri, Shamkant B.Navathe, 6th Edition, Pearson. |
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References

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| <ol style="list-style-type: none"> 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. |
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e-Resources and other Digital Material
