SCSA1301	DATABASE MANAGEMENT SYSTEMS	L	T	P	Credits	Total Marks
		3	0	0	3	100

COURSE OBJECTIVES

- To understand terms related to database design and management.
- To gain knowledge in relational model and relational database management system.
- To implement relational databases using SQL & My SQL.
- To understand database security and performance issues.
- To understand the basics of Data warehousing and Data mining.

UNIT 1 INTRODUCTION TO DATABASES **9 Hrs.**

Databases and database users – Database system concepts and architecture – Data modeling using entity Relationship(ER) model – Enhanced ER model- Relational Model - The Relational Data Model and Relational Database Constraints - The Relational Algebra and Relational Calculus.

UNIT 2 DATABASE DESIGN **9 Hrs.**

Overview of the Hierarchical Data Model - Overview of the Network Data Model – Relational database design: Mapping ER Model to Relational Model - Commercial query languages: QBE – Functional dependency – Normalization.

UNIT 3 QUERY PROCESSING **9 Hrs.**

SQL Queries -Embedded SQL -My SQL: Basics, Queries in MySQL and Algorithms for Query Processing and Optimization - Introduction to Transaction Processing Concepts and Theory - Concurrency control techniques.

UNIT 4 RECOVERY AND SECURITY **9 Hrs.**

Database Recovery Techniques - Database Security – Debate on the distributed databases and Client- Server Architecture with reference to Indian Railway Reservation System.

UNIT 5 OBJECT DATABASE AND CURRENT TRENDS **9 Hrs.**

Concepts for Object Database - Emerging Database Technologies and Application - Introduction to Data warehousing & Data mining –Applications of Data mining.

Max. 45 Hrs.

COURSE OUTCOMES

On completion of the course, student will be able to

CO1 - Design ER-models to represent simple database application scenarios.
CO2 - Ability to understand and design data modelling using Entity-Relationship model.
CO3 - Implement SQL to a broad range of query and data update problems.
CO4 - Articulate socio-economic applications of distributed databases and use database recovery mechanisms.
CO5 - Familiar with data warehousing and data mining applications.
CO6 - Apply Normalization techniques to normalize and improve the database design.

TEXT / REFERENCE BOOKS

1. Elmasri & Navathe, "Fundamentals of Database Systems", 6th Edition, Addison Wesley, 2011.
2. Abraham Silberschatz, Henry.F.Korth and S.Sudharshan, "Database System Concepts", 4th Edition, 2002.
3. Jiawei Han and Micheline Kamber, "Data Mining Concepts and Techniques", 3rd Edition, Elsevier, 2012.
4. Jan L. Harrington, "Object oriented database design", Harcourt India private limited 2000.

END SEMESTER EXAMINATION QUESTION PAPER PATTERN

Max. Marks : 100 **Exam Duration : 3 Hrs.**

PART A : 10 Questions of 2 marks each-No choice **20 Marks**

PART B : 2 Questions from each unit with internal choice, each carrying 16 marks **80 Marks**