GUJARAT UNIVERSITY

K. S. SCHOOL OF BUSINESS MANAGEMENT
[Five Years' (Full-time) Integrated Degree Course]

Semester-7 [M.Sc. (CA & IT)]

Subject Code: - KS_C_EC-471
Subject Name: - Advanced Database Systems
Course Credit: - 3

Objective:

To introduce the basics of Database Administration To give a detailed understanding of how to maintain database quickly &accurately. The students will be able to design and manage the Database Server to solve the issues related to the Database Server.

Unit No.	Course Content	Weight-age (%)
1	**Getting Started with Database Architecture and Managing Data Storage:-** Introduction to Database, Database System Environment – an Example, Actors on the scene, Workers behind the scene, Data Models, Schema and Instances, Three Schema Architecture of Database, Database languages and interfaces, DBMS Component Modules, Database System Utilities, Centralized and client server architecture for DBMS, Memory Hierarchy and Storage Devices, Storage of Databases.	(20%)
2	**Database Tuning and Database Security** Physical Database Design in Relational Databases, Overview of Database Tuning and relational Systems, Database Security Issues, Discretionary access control based on Granting and Revoking Privileges, Role Based Access Control for Multilevel Security, Encryption and PKI.	(20%)
3	**Backup & Recovery in Database and Database Indexing :-** Recovery Concepts, Recovery Techniques Based on Deferred Update and Immediate Update, Recovery in Distributed Database, Distributed Database in Oracle, Types of Single Level Ordered Indexes, Multilevel Index.	(20%)
4	**Managing Different Databases and Distributed Databases :-** Temporal Database Concepts, Multimedia Databases, Deductive Database, Distributed Database Concepts, Data Fragmentation, Replication and allocation Techniques for Distributed Database Design, Types of Distributed Database Systems.	(20%)

5	**Emerging Database Technologies and Object-Relational Databases :-** Overview of Object Relational Features, Evolution of Current Trends of Database Technology, Implementation and Relational Issues of Extended Type, Nested Relational Model, Mobile Databases, Multimedia Databases, Geographic Information Systems, Genome Database Systems	**(20%)**

Recommended Lecture Scheme: Approximately 40 to 45 hours in a semester

Recommended Practical Scheme: Not Applicable

Assignment: Minimum five assignments should be given.

Main Reference Books:

1. Ramesh Elmasari, Shamkant B. Navathe, "Fundamentals of Database Systems", Pearson Education, 5th Edition

Reference Books:

1. Sam R. Alapati, "Expert Oracle9i Database Administration", Apress,

2. S. K. Singh, "Database Systems Concepts, Design & Applications", Pearson Education