



C. U. SHAH UNIVERSITY, WADHWAN CITY.

Faculty of: **Computer Science**

Course: **Bachelor of Computer Applications**

Semester: **II**

Subject Code: **4CS02ADM1**

Subject Name: **Database Management system**

Sr. No	Branch Code	Subject Code	Subject Name	Teaching hours/ Week			Credit hours	Credit Points	Evaluation Scheme/ Semester								
				Th	Tu	Pr			Theory				Practical				Total
									Internal Assessment		End Semester Exams		Internal Assessment		End Semester Exams		
									Marks	Duration	Marks	Duration	Marks	Duration	Marks	Duration	
4	2	4CS02ADM1	Database Management system	4	--	2	6	5	15(SE)	1Hr.	70	2½ Hrs.	50(IP)	1 ½ Hrs.	--	--	200
									15(CE)				50(CE)				

AIM :

The aim of this subject is to make student how to use these concepts in database applications. The students would be able to decide where and how to store and retrieve the information effectively using advanced concept of database, recognize the elements of Database for real life applications and familiar with the advanced database concepts such as distributed database, business intelligence and data warehouse.

COURSE CONTENTS

Unit I

5 Hrs.

- Introduction of Database System,
- RDBMS,
- Dr. E. F. Codd Rules,
- Normalization,
- E-R Modelling Concept and Diagram

Unit II

15 Hrs.

- Data types of SQL,
- Data definition command with constraints,
- Advanced Data Definition Commands
 - Changing Column's Data Type
 - Changing Column's Data Characteristics
 - Adding a new column
 - Dropping an existing column
- Data manipulation commands with adding, deleting, updating rows/content in tables,
- Select Statement with WHERE, DISTINCT, ORDER BY, GROUP by, HAVING clause,
- Arithmetic operators, Logical operators, Special Operators – IN, NOT IN, ANY, BETWEEN, ALL, LIKE, EXISTS,
- Constraint – primary key, not null, check, unique, referential integrity

Unit III

15 Hrs.

- Aggregate Functions (sum, average, count, min, max)
- String handling functions (chr, concat, initcap, lower, lpad, ltrim, replace, substr)
- Set Operators (Union, Union all, intersect, minus)
- Introduction and types of Joins
 - Natural Join or Equi Join
 - Outer Join
 - Right Outer Join
 - Left Outer Join
 - Full Outer Join
 - Self-Join
 - Cross Join
- Introduction to Sub queries
 - Single Row Sub queries
 - Multiple Value Sub queries
 - Multiple Column Sub queries
 - Multiple Row Sub queries
 - Correlated Sub queries
- Transaction Control Language Commands
- Creating users
- Data Control Language command

Unit IV

7 Hrs.

- OLTP Environments,
- Concurrency issues
- Need for transactions
- Necessary properties of transactions (ACID)
- Transaction states,
- Concurrency control (Serialized and non-serialized schedules)

Unit V

6 Hrs.

- Evolution of DDBM
- Distributed Processing and Distributed Database
- DDBMS Advantages and Disadvantages
- Characteristics of DDBMS
- Components of DDBMS

REFERENCE BOOKS:

- RDBMS Using Oracle – Bharat & Co. [ISBN No. : 978-93-81786-38-3]
- SQL, PL/SQL The programming - Lang.Of Oracle Ivan Bayross - BPB [ISBN No. : 81-7656-964-X]

NPTEL COURSE (<https://nptel.ac.in/>):

1. Fundamentals of Database Systems by Dr. Arnab Bhattacharya
Course Link: <https://nptel.ac.in/courses/106104135>