



Program Name: Integrated M.Sc. (I.T.)

Level: Post Graduate

Branch: Information Technology

Subject Code: 2BS205

Subject Name: Database Management System

w. e. f. Academic Year:	2025-26
Semester:	02
Category of the Course:	MINOR COURSE

Prerequisite:	NIL
Rationale:	This course covers basic understanding of database management systems, overview of types of databases.

Teaching and Examination Scheme:

Teaching Scheme (in Hours)			Total Credits L+T+(PR/2)	Assessment Pattern and Marks				Total Marks
L	T	PR	C	Theory		Tutorial / Practical		
				SEE (T H)	IAT	CCE	SEE (P)	
3	0	4	5	70	30	30	20	150

Where SEE: Semester End Examination, IAT: Internal Assessment Test, CCE: Continuous and Comprehensive Evaluation

Course Content:

Unit No.	Content	No. of Hours	%of Weightage	Corresponding CO(s)
Section A				
1.	Introduction to Database Management System 1.1 Introduction 1.2 Database System Applications 1.3 Purpose of Database Systems 1.4 View of Data: Instances and Schemas 1.5 Data Independence	6	10%	CO1
2.	Basics of Database Management System 2.1 Database Design 2.2 Data Storage 2.3 Data Querying 2.4 Database Architecture 2.5 Transaction Management	9	20%	CO2
3.	Data models 3.1 Types of Data models 3.2 Entity-Relationship Model 3.3 Entity-Relationship Diagram 3.4 Constraints and Design Issues	6	20%	CO3
Section B				
4.	Types of Databases 4.1 Object Oriented Database 4.2 Centralized Database 4.3 Distributed Database 4.4 Parallel Database 4.5 Multimedia Database 4.6 NoSQL Database 4.7 Temporal Database 4.8 XML Database	6	10%	CO4
5.	SQL Concepts 5.1 Basics of SQL 5.2 Types of commands: DDL,DQL,DML,DCL and TCL 5.3 Constraints- Primary key, foreign key, unique, not null	6	20%	CO5

6.	SQL Functions & Operator 6.1 Aggregate functions Built-in functions –numeric, date, string function, 6.2 Having Clause, Group By Clause 6.3 Types of Operators 6.4 Sub Queries & View	9	20%	CO6
	Total	42	100	

Course Outcome:

After Completion of the Course, Student will able to:

No	Course Outcomes	Bloom's Taxonomy Alignment
01	Understand the fundamental concepts of data and databases.	U
02	Explain the role, components, and functions of a Database Management System	U
03	Describe various data models and their use in structuring and organizing data.	U
04	Identify and differentiate between different types of databases and their applications.	U
05	Apply SQL statements to create, modify, retrieve, and manage data in relational databases.	A
06	Use SQL functions and operators to perform data manipulation effectively.	A

Suggested Specification Table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
30	40	30	-	-	-

Where R: Remember; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create (as per Revised Bloom's Taxonomy)

References/Suggested Learning Resources:

(a) Books:

1. "Database System Concepts", 6th Edition by Abraham Silberschatz, Henry F. Korth, S. Sudarshan, McGraw-Hill.

2. “Fundamentals of Database Systems”, 7th Edition by R. Elmasri and S. Navathe, Pearson
3. “An introduction to Database Systems”, C J Date, Pearson. “Modern Database Management”, Hoffer , Ramesh, Topi, Pearson.
4. “Principles of Database and Knowledge – Base Systems”, Vol 1 by J. D. Ullman, Computer Science Press

(b) Open source software and website:

1. <https://www.javatpoint.com/dbms-tutorial/>
2. <https://www.w3schools.in/operating-system/intro>

List of Laboratory/Learning Resources Required:

1.	Create an “Account” table having three columns for account number, balance and branch and Display information about columns of an Account Table.
2.	Insert at least 5 data into an Account table.
3.	Insert a new row into an Account table for Bardoli branch containing null balance for account number ‘A06’.
4.	Display all the records of an Account table.
5.	Display only account number and balance for each account.
6.	Display information of each account that belongs to the ‘Surat’ branch.
7.	Display all account numbers having balances more than 6000.
8.	Display branch names from the Account table avoiding the duplication of branch names.
9.	Display all accounts sorted in ascending order according to their branch names.
10.	Display all accounts sorted in descending order according to their balance.
11.	Display all the details of account number ‘A01’.
12.	Create table Acc having all rows and all columns from table Account.

13.	Update account balance of all customers.
14.	Delete First Two Account Number Details from Table.
15.	Display the table Data after Deletion.

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