ST. ALOYSIUS COLLEGE(AUTONOMOUS), JABALPUR

Reaccredited 'A+ 'Grade by NAAC(CGPA:3.68/4.00)
College with Potential for Excellence by UGC
DST-FIST Supported & STAR College Scheme by DBT

B.A. III Semester
Paper: - Major/Minor
Subject:- Database Management System

Course Outcomes

CO. No.	Course Outcomes	Cognitive Level
CO 1	To understand database concepts, applications, structure, need and database terminologies.	Un
CO 2	To know about fundamentals of Relational Algebra and recovery & backup.	Un
CO 3	To gain skills to create logical design of databases, including the E R method and normalization approach.	Un, An
CO 4	To explore issues of transaction processing and concurrency control.	Un, An
CO 5	To acquire knowledge of back-end project management skills.	Ap,
CO 6	To get knowledge of Database and create own Database.	AP, E
CO 7	For implementation of different security features to secure the database.	Ap, E

Credit and Marking Scheme

	Credits	Marks		Total Marks
		Internal	External	
Theory	3	40	60	100
Practical	1	40	60	100
Total	4			200

Evaluation Scheme

	Marks	
	Internal	External
Theory	3 Internal Exams of 20 Marks (During the Semester) Best 2 will be taken	1 External Exam (At the End of Semester)
Practical	3 Internal Exams during the semester	1 External Exams (At the End of Semester)

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Content of the Course
Theory

No. of Lectures (in hours per week): 2 Hrs. per week

Total No. of Lectures: 60   **Maximum Marks:** 60

Units	Topics	No. of Lectures
I	**Introduction: Database system concepts**:- Data base system, Advantages of database systems; Data Architecture of data system: View/Schema, logical, conceptual and physical and their interrelationship, data dictionary, Data base administrator. Types of Data Models:- Relational, Hierarchical and Network Model their advantages and disadvantages	12
II	**Entity Relationship Model as a tool of conceptual design**: Entities &Entity set, Relationship & Relationship set, Attributes, Mapping Constraints, Keys, Entity-Relationship diagram (E-R diagram) : Strong & weak entities, Generalization, Specialization, Aggregation, Reducing ER diagram to tables.	12
III	Normalization and SQL concept :- Normalization: First, Second, Third & BCNF Normal Forms, Introduction to SQL,tuple, attribute, Data types, key constraints:- primary key, Candidate key, Integrity rules : Entity integrity, Referential integrity rule.SQL Commands:- , DDL, DML, DCL, TCL syntax and examples, select query with all the clauses. Like Predicate , Operator (Between, In , Not in)	12
IV	**Advance SQL**:- SQL join operations, Sub queries and correlated queries, SQL Functions. Constraints in SQL. Introduction to PL/SQL :- PL/SQL structure, Cursors, Triggers, Stored Procedures and functions.	12
V	**Functional Protection and Crash Recovery**: protection against crashes: different types of crashes; backup, journal, rollback, committed and uncommitted transactions, security on database	12

Text Books:
1. An Introduction to Database System by Bipin Desai.
2. "Database System Concepts" by Abraham Silberschatz and S Sudarshan
3. "Database Management Systems" by Raghu Ramakrishnan
4. "Fundamentals of Database Systems" by R Elmasri and S Navathe
5. "Database Management Systems" by Johannes Gehrke and Raghu Ramakrishnan
6. Books published by M.P. Hindi Granth Academy, Bhopal

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List of Practical

1. **Create a table with name "Employee" having following fields:-**

Field Name	Data Type	Size	Constraint
Eid	Number	10	Primary Key
Ename	Char	20	Not null
Designation	Char	30	Not null
Age	Number	10	Not null
City	Varchar2	25	Not null
Department no	Varchar2	30	Not null
Salary	Decimal	(7,2)	Not null
BankName	Varchar2	30	Not null

2. **Insert the following records in above table structure .**

Eid	Ename	Designation	Age	City	Department	Salary	BankName
101	Ford	Manager	24	Mumbai	D1	67820.50	HDFC
102	Jenny	Asst. Mng .	30	Delhi	D1	45750.40	Axis
103	Mary	Clerk	35	Goa	D1	32000.00	Canara
104	Smith	Clerk	28	Madras	D1	28000.00	FBC
105	James	Clerk	27	Mumbai	D1	29000.00	ICICI
106	Anny	Clerk	32	Kolkata	D1	25000.00	Axis
107	Jones	Clerk	34	Delhi	D1	27000.00	HDFC
108	Michal	Clerk	31	Goa	D1	24000.00	FBC

Execute the following queries
1. WAQ to insert one new record in the table.
2. WAQ to change the Ename from Anny to Robin.
3. Delete any one record from table.
4. Add a new column in the employee table with name "email id" having datatype varchar2(15).
5. WAQ to display the entire table using DQL Command .
6. WAQ to display the specific records whose age is greater then 30 using where clause.
7. Display only the city column using where clause.
8. Display the name of employee whose name starts with "J" using predicate.
9. WAQ to find the name of the employees whose salary lies between 24000.00 to 28000.00
10. WAQ to list the number of employees whose name is not "Jenny","Mary","Ford".