FACULTY OF COMPUTER SCIENCE
Master of Computer Application (Sem-I)
In Effect from Academic Year 2023-24

Branch Name:	MCA
Program Code:	CS201
Course Name:	Relational Database Management Systems
Course Code:	3CS2010104T
Pre-requisite Course:	Basic knowledge of working with computers.

Course Objectives:

1. To understand the relational database design principles
2. To understand the designing database systems and applications.
3. To understand the Implementing database systems and applications.

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
				Theory (Marks)		Practical (Marks)		
Lecture (L)	Tutorial (T)	Practical (P)	Credit	University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	Total (Marks)
4	-	-	4	60	40	-	-	100

Course Contents:

Unit No	Topics	Total Hours	Weightage (%)
1	**Introduction to Database System** Basic Concepts: Data, Information, Database, Database Systems, Database Management Systems, Instance, Schema, Database Applications, Database Architecture, Database User and Administrators, Purpose and Advantages of Database Management System (Over File System).	8	10
2	**Database Design** Entity, Attributes, Normalization, First Normal Form (1NF), Second Normal Form (2NF), Third Normal Form (3NF), E-R Diagram, Transaction, ACID Property. **Structured Query Language (SQL):** Data Definition Language (DDL), Data Manipulation Language (DML), Data Control Language (DCL), Transaction Control Language (TCL).	10	25
3	**Database Constraints** Primary Key, Foreign Key, Unique Key, Check Constraints, Null and Not null Constraints, **Operator** Arithmetic Operators, Logical Operators, Range Searching (Between), Pattern Matching (Like), Set Operator. **Select Clause** Where Clause, Order By ,Group By ,Having clause **Database Functions** String Function, Aggregate Function, Numeric Function, Date function	10	25
4	**Joining Data From Tables in SQL:** Joins (Inner Join, Outer Join, Cross Join, and Self Join) Sub Query, Index, View **SQL Database Operation** Creating New User in SQL Import Export Data In SQL with Data Base	10	20
5	**PL/SQL :** Introduction, PL/SQL Block Structure, Cursor, Procedure, Function, Trigger	10	20

Text Books:

1. "SQL,PL/SQL The programming language of oracle", 3rd revised edition, Ivan Bayross, BPB Publication.
2. C J Date, A Kannan, S Swaminathan, "An Introduction to Database Systems", 8th Edition, Pearson Education (2006).

Reference Books:

1. Silberschatz, Korth, Sudarshan, "Database System Concepts", 5th Edition, McGraw Hill Publication
2. S K Singh, "Database Systems : Concepts, Design and Applications", Pearson Education
3. Elmsari, Navathe, "Fundamentals of Database Systems", 5th Edition, Pearson Education (2008)
4. Peter Rob, Carlos Coronel, "Database Systems : Design, Implementation and Management", 7th Edition, Cengage Learning (2007)

List of Open Source Software/learning website:

1. https://www.tutorialspoint.com/plsql/index.htm
2. https://www.w3schools.com/sql/
3. https://www.w3schools.com/mysql/mysql_rdbms.asp

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom'sTaxonomyLevel
CLO1	The fundamental elements of relational database management systems	2 Understanding
CLO2	Design ER-models to represent simple database application scenarios	1 Remembering 3 Applying,
CLO3	Familiar with basic database storage structures and access techniques: file and page organizations, indexing methods	2 Understanding, 3 Applying,
CLO4	Working on existing database systems, designing of database, creating relational database, analysis of table design.	3 Applying, 2 Understanding
CLO5	Ability to store information without unnecessary redundancy.	5,3, 4 Evaluate,Applying, Analyze
CLO6	Effective transformation of the real-world data into the relational data model of the Database system and data retrieval.	6 Creating 5 Evaluate

Mapping of CLOs with Pos & PSOs

Course LearningOutcomes	Program Outcomes(POs)													
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CLO1	**M**	**M**	**L**		M		**L**	M	L	M		**M**	**H**	**M**
CLO2	M	M	H			**M**	M			**H**	L	L	**H**	**M**
CLO3	H	M	H		**M**	**M**		**M**	L	M		H	**L**	**M**
CLO4	M		**H**	**M**	M	**L**	M	**L**	**M**		H	H	H	**M**
CLO5	H		**M**	**M**	**M**	**M**	**L**	**H**	**H**	M	H	H	H	**L**
CLO6	H	M						**H**	**L**	**L**	M	**H**	H	**H**

H:High, M:Medium, L:Low