

SEMESTER 4**KU4DSCCSC208: DATABASE MANAGEMENT SYSTEM**

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
4	DSC	200-299	KU4DSCCSC208	4	75

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
3	2	-	35	65	100	1.5 Hrs

Course Description:

Computer databases typically store aggregations of data records or files that contain information, such as sales transactions, customer data, financials and product information.

Databases are used for storing, maintaining and accessing any sort of data.

They collect information on people, places or things.

Course Prerequisite: NIL**Course Outcomes:**

CO No.	Expected Outcome	Learning Domains
1	Summarize and exemplify fundamental nature and characteristics of database systems	U
2	Model real word scenarios given as informal descriptions, using Entity Relationship diagrams	U
3	Implement relational model using query languages	U, A, C
4	Use normalisation techniques to design database.	U, A
5	Identify Big Data Concepts	U

**Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)*

Mapping of Course Outcomes to PSOs

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	3			2			
CO 2		2					
CO 3	3	3	2				
CO 4	2	3	2				3
CO 5	3	3		2			

COURSE CONTENTS

Contents for Classroom Transaction:

M O D U L E	U N I T	DESCRIPTION	HOURS
1		MODULE1: Database concept	
	1	Introduction – purpose of Database, Applications of Database, DBMS, DBMS software	15
	2	View of Data, Data Models, Transaction management	
	3	Database architecture – Storage manager-Query Processor	
	4	Database Administrator, Data Base Users	
2		MODULE 2: E-R Model	
	1	E-R model- Basic concepts, entity set & attributes.	15
	2	Relationships and constraints, cardinality, participation, notations, Mapping Constraints; Keys; Primary, Foreign, candidate.	
	3	E-R design issues, E-R diagram; Weak entity set; Extended E-R features: generalization and specialization	
	4	Concept Design - Conceptual design for University enterprises	
3		MODULE 3: Relational model and SQL	15
	1	Relational model – Structure of Relational database, Integrity constraints.	
	2	Relational Algebra -Fundamental operations , Relational calculus , Tuple and domain calculus	

3	SQL: database languages; DDL- create, alter, drop, truncate; DML- Insert, Select, update, Delete; DCL, TCL, SQL Functions, Data types in SQL; Creation and deletion of database and user	
4	SQL queries on single and multiple tables, Nested queries (correlated and non-correlated), Aggregation and grouping.	

4	MODULE 4: Join and Normalization	
1	SQL Join Operations in Detail, SQL Views, Triggers, Sequences.	<i>15</i>
2	Normalization- Introduction, Normal forms – 1NF, 2NF, 3NF and BCNF, functional dependency	
3	Cloud database an over view- working of cloud databases-Types of cloud databases--Introduction to AWS-Main features and Advantages	
4	Big Data- Introduction to Hadoop-Building blocks and components- Architecture	

5	Teacher Specific Module	
	1. Create table and implement various DDL commands 2. Create table and implement various DML commands 3. Create table and implement various aggregate functions. 4. Create table and implement various DDL commands 5. Create table and implement various clauses and pattern matching commands. 6. Queries to implement various string functions 7. Create table and implement different types of joins	

Essential Readings:

1. Database System Concepts; Silberschatz, Korth and Sudarsan, 5th Edn; McGraw Hill.
2. The Database Book: Principles and Practice Using MySQL; Gehani; University Press.
3. Database Management Systems Application, Kogent Learning, Solutions Inc, Dreamtech Press 2014, ISBN-978-93- 5119-476-7.
4. Database System Concepts, Kortli Flenery, Tata McGraw Hill Education, 6" Edition ,ISBN - 13:978-93-329-0135-4

Suggested Readings:

1. Fundamentals of Database systems, E. Navathe, 7th edn, Pearson Education.
2. Introduction to data base systems ITL Education Solutions Limited
3. DBMS and ORACLE, Dr. S.B Kishor, 2nd Ed, DAS GANU Prakashan.

Assessment Rubrics:

Evaluation Type	Marks	Evaluation Type	Marks	Total
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Lecture	75	Practical	25	100
a) ESE	50	a) ESE	15	
		Program code and execution	8	
		Output	3	
		Viva	2	
		Modification	2	
b) CCA	25	b) CCA	10	
i	5	i	3	
	10			
ii	5	ii	4	
iii	5	iii	3	