KU3DSCCSC205: RDBMS

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
3	DSC	200-299	KU3DSCCSC205	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:

This course offers to acquire basic conceptual background necessary to design and develop simple database system, Relational database mode and to write good queries using a standard query language called SQL.

Course Outcomes:

CO No.	Expected Outcome	Learning Domains
1	Describe basic concepts of database system	U
2	Design a Data model and Schemas in RDBMS	U, A
3	Competent in use of SQL	U, A, C
4	Analyze functional dependencies for designing Database	U, A, C

****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	3		2			2
CO 2	3	3	2				
CO 3	3	3	3	2		3	2
CO 4	3	2					3

Contents for Classroom Transaction:

MODULE	UNIT	DESCRIPTION	HOURS
1	**MODULE 1 :Introduction to DBMS**		
	1	Introduction to DBMS– Data and Information - Database – Database Management System – Advantages	15
	2	View of data in DBMS	
	3	Data Models, Database users and Administrator (DBA)	
	4	Concept of RDBMS, Features of RDBMS Difference between DBMS and RDBMS	
2	**MODULE 2 :Introduction to RDBMS**		
	1	Terminologies: Relation, attribute, domain, Tuple, Entities, Degree	15
	2	Key Constraints Super keys - Candidate keys - Primary keys and foreign key for the Relations	
	3	Relational Algebra Operations, RDMS-advantages and disadvantages	
	4	Relational Calculus – Domain Relational Calculus	
3	**MODULE 3: Normalization and basic SQL**		
	1	Normalization – 1NF – Functional Dependency - 2NF-Transitive dependency- 3NF – BCNF – Database Security	15
	2	SQL- Data types	
	3	DDL, DML, DCL, TCL Commands	
	4	Select Statement with Clauses-Where, Having, Orderby, groupby	
	5	SQL Operators- Relational, Logical, Like, Between, IN operator	

4	**MODULE 4: Functions in SQL**		
	1	Aggregate functions: avg, count, min, max, sum,count(*)	15
	2	String Functions: concat, instr, mid, length, strcmp, trim, ltrim, rtrim MathFunctions: abs, ceil, floor, mod, pow, sqrt	
	3	Join types – Inner Join, left-right- Outer Join, and self-Join	
	4	Sub-queries, view, Character functions-upper, lower, initcap etc	

5	**Teacher Specific Module**	
	Directions	
	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. Create table and implement different types of joins	15

Essential Readings:

1. Abraham Silberchatz, Henry F. Korth, S. Sudarshan, "Database System Concepts", McGrawHill 2019, 7th Edition.
2. Alexis Leon & Mathews Leon, "Fundamentals of DBMS", Vijay Nicole Publications 2014, 2nd Edition.
3. Srivastava & Srivastava, "Relational Database Management System", New Age

Assessment Rubrics:

Evaluation Type		**Marks**	**Evaluation Type**		**Marks**
Lecture		**75**	**Practical**		**25**
a)	**ESE**	**50**	a)	**ESE**	**15**
				Program code and execution	**8**
				Output	**3**
				Viva	**2**
				Modification	**2**

b)	**CCA**		**25**	b)	**CCA**		**10**
	i	Test Paper	5		i	Punctuality	3
		Model exam	10				
	ii	Assignment/ Book- Article review /field report	5		ii	Model exam	4
	iii	Seminar/ Viva-Voce	5		iii	Record	3