Course Code: 205
Course Title: Concepts of Relational Database Management System

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Course Title	Concepts of Relational Database Management System
Credits	4
Course Category	Major Course
Level of Course	200-299 (Intermediate Level)
Teaching per Week	4 Hours (2 Hours Theory + 4 Hours Practical)
Minimum weeks per Semester	15 (Including class work, examination, preparation etc.)
Review / Revision	2022-2023
Implementation Year:	A.Y. 2023-2024
Purpose of Course	- Imparting fundamental knowledge of Relational Database. - This course also includes SQL & fundamentals of PL/SQL.
Course Objective	1. To make students understand about RDBMS architecture 2. Have edge over Control and Iterative statements of PL/SQL 3. Understanding advanced SQL and various complex queries. 4. To make students aware of cursors and Exception Handling.
Pre-requisite	Basic knowledge of Database Management.
Course Outcomes	**CO1** : Students will learn Fundamental Knowledge of Relational database model . **CO2** : Explain and demonstrate advance and various complex queries using SQL. **CO3** : Student will learn about concept of PL/SQL and concept of logic development in PL/SQL through conditional statement. **CO4** : To understand and impart knowledge in order to have edge over Control and iterative statement of PL/SQL in order to improve the applied concept using coding and implement of coding to solve PL/SQL problems. **CO5** : To explain student about cursors and exception handling and demonstrate the concept by implementing to solve the problems. **CO6** : To understand concepts of data storage , retrieval and administration of the data in Relational Models using SQL and PL/SQL.
Mapping between Course Outcomes(CO) with Program Specific Outcomes(PSO)	

	PSO 1	PSO2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO1	■	■	■	■	■			
CO2	■	■		■	■			
CO3	■	■		■	■	■		
CO4	■	■		■	■	■		
CO5		■	■	■	■		■	
CO6		■	■		■		■	■

Course Content

Unit-1. Introduction of Relational model

1.1 Codd's Rules

1.2 Relational operations Algebra
(select, project, union, intersection, rename)

1.3 Transaction control language: commit, savepoint, rollback

1.4 Data Control language: Grant, Revoke

Unit-2 Advanced SQL

2.1 Data types (NUMBER, CHAR, VARCHAR, VARCHAR2, CLOB, NCLOB, LONG, DATE, RAW, LONGROW)

2.2 ROWID pseudo column & DUAL table

2.3 DATE Functions (SYSDATE, SYSTIMESTAMP, TO_CHAR, TRUNC, ROUND, NEXT_DAY, LAST_DAY, MONTHS_BETWEEN, ADD_MONTHS)

	2.4 Concepts of Index (Create, drop) 2.5 Join Queries 2.5.1 Inner Join 2.5.2 Outer Join (Left, Right, Full) 2.5.3 Cross Join 2.6 Sub Queries with(Insert, update and Delete) 2.7 Nested queries **Unit-3: PL/SQL and conditional Statements :** 3.1 Introduction to PL/SQL (Definition & Block Structure) 3.2 Variables, Constants and Data Type 3.3 Assigning Values to Variables 3.4 User Defined Record 3.5 Conditional Statements 3.5.1 IF…THEN statement 3.5.2 IF..Else statements 3.5.3 multiple conditions 3.5.4 Nested IF statements 3.5.5 CASE statements **Unit-4 : Iterative Statements :** 4.1 Iterative statements : 4.1.1 Loop..End Loop 4.1.2 For.. Loop 4.1.3 While Loop 4.1.4 EXIT Loop 4.1.5 Continue **Unit-5: Cursors and Exception Handling:** 5.1 Concepts of Cursors 5.1.1 Types of cursors (Implicit & Explicit) 5.1.2 Declare, open, fetch and close cursors. 5.2 Cursor Attributes : (%FOUND,%NOTFOUND,%ISOPEN,%ROWCOUNT) 5.3 Exception Handling in PL/SQL 5.3.1 Types of Exceptions: 5.3.1.1 Named System Exceptions 5.3.1.2 Unnamed System Exceptions 5.3.1.3 User-defined Exceptions 5.3.1.4 User Defined Exceptions 5.3.2 Exception Handling
Reference Books	1. The Complete Reference, George Koch, Kevin Loney – Oracle Press 2. Database Management System, Oracle, SQL and PL/SQL, 2nd ed., Das Gupta & Radha Krishna, PHI 3. Oracle 9 PL/SQL Programming, Scott Urman – Oracle Press 4. Oracle SQL: The Essential Reference, David C. Kreines – O'Reilly 5. SQL, PL/SQL :The Programming Language Of Oracle, Ivan Bayross – BPB 6. Oracle PL/SQL Programming – Feuerstein & Peribyl – SPD O'Reilly 7. Learning Oracle SQL and PL/SQL: A Simplified Guide, Rajeeb Chatterjee 8."Oracle PL/SQL Programming" Authors: Steven Feuerstein, Bill Pribyl ISBN: 978-0596009779 Publisher: O'Reilly Media 9."Oracle SQL Developer Handbook" Authors: Dan Hotka, Sue Harper ISBN: 978-0071484742 Publisher: McGraw-Hill Education 10."Oracle Database 12c PL/SQL Programming" Authors: Michael McLaughlin, John Harper ISBN: 978-0071812436 Publisher: McGraw-Hill Education
Teaching Methodology	Class Work, Discussion, Lab work, Self-Study, Seminars and/or Assignments
Evaluation Method	50% Internal assessment. 50% External assessment.