C. U. SHAH UNIVERSITY

FACULTY OF: Computer Science
DEPARTMENT OF: M.Sc(CA & IT)
SEMESTER : IV
CODE: 4CS04PDM1
NAME: Practical Database Management System

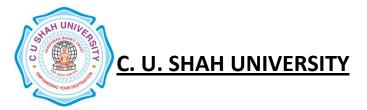| Sr. No	Subject Code	Subject Name	Teaching Hours/Week				Credits	Evaluation Scheme/Semester						Total Marks
								Theory			Practical			
			TH	TU	PR	TOTAL		Sessional Exam		University Exam	Sessional Exam		University Exam	
								Marks	Hrs	Marks	Marks	Hrs	Total Marks	
1	4CS04PDM1	Practical Database Management System	0	0	8	0	4	30	1.5	70	0	1.5	0	100

Objectives:
The aim of this subject is to make student how to use these concepts in database applications. The students would be able to decide where and how to store and retrieve the information effectively using advanced concept of database, recognize the elements of Database for real life applications and familiar with the advanced database concepts such as distributed database, business intelligence and data warehouse.

Prerequisites:
Elementary knowledge about computers, computer programming & utilization, knowledge about data structures and algorithms, corresponding to the basic course on data structures and algorithms.

Course outline:

Sr.No	Course Contents
1	**SQL, SQL *Plus Introduction** Introduction to SQL, SQL Commands and Datatypes, Introduction to SQL *Plus, SQL *Plus Formatting Commands, Operator and Expression, SQL v/s SQL *Plus
2	**Managing Tables and Data** Creating, Altering & Dropping tables, Data Manipulation Command like Insert, Update, Delete, Different type of constraints and applying of constraints, SELECT statement with WHERE, GROUP BY and HAVING, ORDER BY, DISTINCT, Special operator like IN, ANY, ALL, BETWEEN, EXISTS, LIKE, JOIN (Inner, Outer, Self), Subquery, minus, intersect, union, Built in function, Numeric Function (abs, ceil, cos, decode, exp, floor, greatest, least, max, min, rem, round, sign, sqrt, trunk), Character Function (chr, concat, initcap, lower, lpad, ltrim, replace, rpad, rtrim, substr, trim, upper), Date Function (add_months, last_day, months_between, next_day, round(date), sysdate, systimestamp, trunk(date), to_date, to_char), Aggregate Function (Sum, Count, AVG, MAX, MIN, Count (*))

3	**Other ORACLE Database Objects** View, Sequence, Synonyms, Database Links, Index (B* Tree, Bitmap, Function-Based, Application Domain), Cluster, Snapshot
4	**Data Control and Transaction Control Command** Creating user & role, Grant, Revoke command, What is Transaction? , Starting and Ending of Transaction, Commit, Rollback, Savepoint
5	**Concurrency control using lock** What are Locks?, Locking Issues (Lost Updates, Pessimistic Locking, Optimistic Locking, Blocking, Deadlocks), Lock Types (DML Locks,DDL Locks, Manual Locking and User- Defined Locks)
6	**Introduction to PL/SQL** Introduction to PL/SQL, SQL v/s PL/SQL, PL/SQL Block Structure, Variables, Basic and Composite Data type, Conditions, Looping, %TYPE and %ROWTYPE, Cursor (Implicit, Explicit), Exception Handling
7	**Advanced PL/SQL** Creating and Using Procedure and Functions, Package, Triggers, Creating Objects, Object in Database-Table, PL/SQL Tables, Nested Tables, Varrays

Teaching Methodology:
Revision, Paper Solving, Seminar, Expert Talk, MCQ Quiz, Viva Test, Programming Test

Learning Outcomes:
At the end of the course, students will have basic understanding of the Database Development and able
to create and analyze Database for any Application.

Books Recommended:
1. RDBMS Using Oracle – Bharat & Co. [ISBN No. : 978-93-81786-38-3]
2. SQL, PL/SQL The programming - Lang.Of Oracle Ivan Bayross - BPB [ISBN No. : 81-7656-964-X]
3. Using Oracle 8i - Page, Hughes - QUE & PHI Publications
4. Oracle 8I The Complete Reference - George Koch, Kevin Loney - Oracle Press and Tata MacGraw-Hill
5. Mastering SQL – Martin Gruber [ISBN No. : 0-7821-2538-7]
6. Teach Yourself PL/SQL in 21 Days – Jonathan Gennick, Tom Luers [ISBN No. :0-672-31798-2]