

FACULTY OF COMPUTER APPLICATIONS

Programme	Master of Computer Applications				Branch/Spec.	Computer Application			
Semester	I				Version	1.0.0.0			
Effective from Academic Year			2026-27		Effective for the batch Admitted in			July 2026	
Subject Code	P11A1ADM		Subject Name		Advanced Database Management Systems				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture (DT)		Practical (Lab.)		Total		CIA	SEE	Total
	L	TU	P	TW					
Credit	3	0	2	0	5	Theory	40	60	100
Hours	3	0	4	0	7	Practical	20	30	50

Objective:

To administer and manage various aspects of a database in a specific database tool.

Pre-requisites:

Require the basic knowledge of DBMA and basic operational systems.

Course Outcomes:

Name of CO	Description
CO1	Apply database architecture, instance management, initialization parameters and database creation using DBCA.
CO2	Analyse and manage database storage structures and undo data to ensure efficient space utilization and transaction consistency
CO3	Implement database Security & Apply and evaluate flashback technologies to recover databases from logical errors and minimize data loss..
CO4	Demonstrate and implement data movement techniques using SQL*Loader and Data Pump utilities for database migration and backup.

Mapping of CO and PO

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	3	3	2	1	2	2	2
CO2	3	3	3	2	1	1	1	3
CO3	3	3	2	2	1	1	3	2
CO4	3	3	3	3	2	1	1	2

Content:		
Unit	SECTION – I	Hrs
1	Introduction Oracle Database 10g : Overview of Grid Computing, Oracle Database Architecture, Database Structures, Oracle Memory Structures, Process Structures, Oracle Instance Management, Server Process and Database Buffer Cache, Physical Database Structure, Tablespaces and Data Files, SYSTEM and SYSAUX tablespaces, Segments, Extents and Blocks, Logical and Physical Database Structures Creating a Database Objectives, Planning the Database, Database Configuration Assistant (DBCA), Using DBCA to create a database, Password Management, Creating a Database Design Template, Using the DBCA to Delete a Database Managing the Database Instance Objectives Initialization Parameter Files, Simplified Initialization Parameters, Viewing and Modifying Initialization Parameters , Database Startup and Shutdown, Viewing the Alert Log, Viewing the Alert History, Dynamic Performance Views	12
2	Managing Database Storage Structures Objectives, Storage Structures, How Table Data Is Stored, Anatomy of a Database Block ,Tablespaces and Data Files,Oracle Managed Files (OMF), Space Management in Tablespaces, Exploring the Storage Structure, Creating a New Tablespace, Storage for Locally Managed Tablespaces , Tablespaces in the Preconfigured Database, Altering a Tablespace , Actions with Tablespaces, Dropping Tablespaces, Viewing Tablespace Information, Gathering Storage Information, Viewing Tablespace Contents, Enlarging the Database, What Is Automatic Storage Management? , ASM: Key Features and Benefits, ASM: Concepts Managing Undo Data Objectives, Data Manipulation, Undo Data , Transactions and Undo Data, Storing Undo Information1, Undo Data Versus Redo Data, Monitoring Undo, Administering Undo, Configuring Undo Retention, Guaranteeing Undo Retention, Sizing the Undo Tablespace, Using the Undo Advisor	11
SECTION – II		
3	Implementing Database Security Objectives, Industry Security Requirements, Separation of Responsibilities, Database Security, Principle of Least Privilege, Applying the Principle of Least Privilege, Monitoring for Suspicious Activity, Standard Database Auditing, Enabling Auditing, Uniform Audit Trails, Enterprise Manager Audit Page, Using and Maintaining Audit Information, Value-Based Auditing, Fine-Grained Auditing, FGA Policy, Audited DML Statement: Considerations, FGA Guidelines, DBA Auditing, Maintaining the Audit Trail, Security Updates, Applying Security Patches.	11

	Performing Flashback Objectives, Flashback Technology: Benefits, When to Use the Flashback Technology, Flashing Back Any Error),Flashback Database: Overview, Reducing Restore Time, Considerations, Enabling Flashback Database, Flashback Table, Flashback Drop: Overview, Flashback Time Navigation , Flashback Query, Flashback Versions Query, Flashback Transaction Query	
4	Moving Data Objectives, Moving Data: General Architecture, Directory Object: Overview, Creating Directory Objects,SQL*Loader: Overview, Loading Data with SQL*Loader, SQL*Loader Control File, Loading Methods, Data Pump: Overview, Data Pump: Benefits, Data Pump Export and Import: Overview, Data Pump Utility: Interfaces and Modes(3), Fine-Grained Object Selection, Advanced Feature: Sampling, Export Options: Files, Data Pump File Locations, Scheduling and Running a Job, Data Pump File Naming and Size	11
Practical Content:		
List of programs specified by the subject teacher based on above mentioned topics		
Text/Reference Books:		
1	Oracle Database 10G, The Complete reference by kevinloney- Tata Mcgraw Hill Education Pvt. Ltd Publication ,1st edition (September 28, 2004).	
2	Oracle DBA Bible, by Janathan Gennick, Carol McCullough-Dieter and Gerrit- Jan Linker,WILEY-Dreamtech Publication,1st Edition 2000	
3	Using Oracle, by William G. Page - Que Pub; Special edition (March 9, 1998)	
Web References / MOOC / Certification Course		
1	https://www.udemy.com/course/oracle-database-course/?utm_campaign=Search_DSA_Beta_Prof_la.EN_cc.India_Subs&utm_source=google&utm_medium	
2	https://www.coursera.org/learn/oracle-dba-training-architecture-sql-user-admin?utm_medium=sem&utm_source	
3	https://docs.oracle.com/en/database/oracle/oracle-database/	
Question Paper Scheme:		
	University Examination Duration: 3 Hours Note for Examiner: - (I) Questions 1 and 4 are compulsory with no options. (II) Internal options should be given in questions 2, 3, 5 and 6. SECTION – I Q.1 –8 Marks Q.2 –11 Marks Q.3 –11 Marks SECTION - II Q.4 –8 Marks Q.5 –11 Marks Q.6 –11 Marks	