

Branch Name:	Computer Engineering / Information Technology
Program Code:	ET404 / ET407
Course Title:	Advance Database Management System
Course Code:	2ET4040401
Pre-requisite Course:	Database Management System

Course Objectives:

1. This subject is associated with the designing of database for business, scientific and engineering application.
2. This course the students will be able to write simple and advanced PL/SQL code blocks.
3. Advanced features such as ref cursors and bulk fetches and database designing with normalization.
4. Hence students will be able to design relational database which will help them in designing phase of projects in forth coming semester.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture (L)	Tutorial (T)	Practical (P)	Credit	Theory (Marks)		Practical (Marks)		Total (Marks)
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
3	-	4	5	60	40	40	60	200

Course Contents:

Unit No	Topic	Total Hours	Weightage (%)
Unit-I	Advanced SQL: 1.1 Transactional Control: Commit, Save point, Rollback 1.2 DCL Commands: Grant and Revoke 1.3 Types of locks: i. Row level locks ii. Table level locks iii. Shared lock iv. Exclusive lock v. Deadlock 1.4 Synonym: Create synonym 1.5 Sequences: Create and alter sequences 1.6 Index: Unique and composite 1.7 Views: Create/ Replace, Update and alter views	10	25
Unit-II	PL/ SQL and Triggers: 2.1 Basics of PL/ SQL 2.2 Data types 2.3 Advantages 2.4 Control Structures: Conditional, Iterative, Sequential 2.5 Exceptions: Predefined Exceptions, User defined exceptions 2.6 Cursors: Static (Implicit & Explicit), Dynamic Procedures & Functions 2.7 Packages: Package specification, Package body, Advantages of package 2.8 Fundamentals of Database Triggers 2.9 Creating Triggers 2.10 Types of Triggers: Before, after for each row, for each statement	10	25

Unit –III	Functional Dependency and Decomposition 3.1Basics of Functional Dependency 3.2Functional dependency diagram and examples 3.3Full function dependency (FFD) 3.4Lossless join decomposition 3.5Lossy Decomposition	08	20
Unit –IV	Normalization 4.1Basics of Normalization 4.2Normal Forms First Normal Form(1NF) Second Normal Form(2NF) Third Normal Form(3NF)	08	20
Unit-V	Transaction Processing 5.1Introduction to transaction concepts 5.2Introduction to Concurrency control	06	10

SUGGESTED LIST OF EXERCISES/PRACTICAL/EXPERIMENTS:

Sr. No.	Exercises (Course Outcomes in Psychomotor Domain according to NBA Terminology)
1	Perform queries for DCL Commands and Locks
2	Implement authorization, authentication, privileges on database.
3	Perform queries to Create synonyms, sequence and index
4	Perform queries to Create, alter and update views
5	Implement PL/SQL programmers using control structures
6	Implement PL/SQL programmers using Cursors
7	Implement PL/SQL programmers using exception handling.
8	Implement user defined procedures and functions using PL/SQL blocks.
9	Perform various operations on packages.
10	Implement various triggers.
11	Practice on functional dependencies.
12	Practice on Normalization–using any database per form various Normal forms.
13	Practice on transaction processing.

Text Books:

Sr. No.	Title of Books	Author	Publication
1.	ADVANCED DATABASE MANAGEMENT SYSTEM	Rini charkbharti Shilbhadra Dasgupta	Dreamtech press

Reference Books:

Sr. No.	Title of Books	Author	Publication
1.	SQL / PL/SQL	Bayross, Ivan	McGraw Hill
2.	An Introduction to Database Systems	Date C. J	Pearson Education
3.	Database System Concepts, design and Applications	S.K Singh	Pearson Education

List of Open-Source Software/learning website:

1. Software: Oracle 10e/11g express edition
2. SQL Basic Concepts: <http://www.w3schools.com/sql/>
3. SQL Tutorial: <http://beginner-sql-tutorial.com/sql.htm>

Course Learning Outcomes (CLO):

- 1 Execute various advance SQL queries related to Transaction Processing using concept of Con currency control
- 2 Implement authorization, authentication, and privileges on database.
- 3 Perform PL/SQL programming using concept of Cursor Management, Error Handling, Package and Triggers
- 4 Understand Functional Dependency and Functional Decomposition.
- 5 Recognize the purpose of query processing, optimization and demonstrate the SQL query evaluation
- 6 Apply various Normalization techniques

Mapping of CLO with PO and PSO

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes (PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CLO1	M												H			
CLO2	H												H			
CLO3	H						M						H			
CLO4	M					L							M			
CLO5	H	M		M			H						L			
CLO6	M	L		L									M			

H: High, M: Medium, L: Low