LOK JAGRUTI KENDRAUNIVERSITY

Syllabus for **LJ School of Computer Applications & Technology (Integrated)**

Semester- III

Course Code	**050120302**			
Category	**Core Subject**			
Course Title	**Database Management Systems II (DBMS II PLSQL)**			
Scheme and Credits	**Theory**	**Tutorial**	**Lab**	**Credits**
	0	**0**	**4**	**2**
Pre-requisites (if any)	Basic knowledge of SQL			

1. Course Objectives:

Sr. No.	Course Outcome (Learner will be able to)
1.	To understand the fundamental concepts of Transaction Management.
2.	To understand the fundamental concepts of Concurrency Control
3.	To be able to understand various database objects (Stored procedure, function and Packages)
4.	To be able to understand about various database triggers
5.	To design domain constraints, web services
6.	To understand necessary concept for web service implementation

2. Course Contents:

Unit	Course Content	Weightage
Unit I	**Advanced SQL :** Top-n Query, Correlated Queries, Sub query **Oracle Database Overview** **Link Server (MS SQL) Overview**	**20%**
Unit II	**Transaction Management**: - Transaction Concepts, properties, states, implementations of Atomicity and Durability, Concurrent Executions, Serializability, and Recoverability. **Concurrency Control**:- Concurrency Control- Overview, Lock based protocol, Timestamp based protocol, Concurrency control problems, concurrency control with time stamping methods	**20%**
Unit III	**Basics of PL/SQL** Overview, PL/SQL, Advantages of Pl/SQL, Generic PL/SLQ Block PL/SQL Fundamentals: PL/SQL Variables and PL/SQL Data types, Variable attribute (%type, %row type) PL/SQL Control Structure (looping)	**20%**
Unit IV	**PLSQL Advanced** **PL/SQL Cursor Management:** Types of cursor (Implicit & Explicit) , Cursor Management, Parameterized cursor, for loop cursor **Error handling in PL/SQL & Security:** Predefined, user defined Error handling, SQLCODE,SQLERRM, Raise application error	**20%**
Unit V	**PL/SQL Database Objects and Triggers** **Sub program:** Stored procedures & Functions, Packages,	**20%**

	Triggers: Overview Types of triggers, Application of Triggers	

3. Desirable:

1. Developing a Web Service from a PL/SQL Package
2. Seminar on Object Types, Nested Table, Cluster

4. Text Book:

1. Ivan Byross, SQL, PL/SQL the programming Language of Oracle, BPB
2. Kevin Loney, Oracle Database 11g :The Complete Reference, Oracle Press,McGrawHill
3. Oracle9i PL/SQL Programming Scott Urman Oracle Press – TMH
4. Alexis Leon, Mathews Leon, "Essentials of Database Management Systems" (Second reprint 2009), Tata McGraw Hill Publication
5. S. K. Singh, "Database Systems: Concepts, Design and Applications", Pearson Education
6. Ramez Elmsari, Shamkant B Navathe, "Fundamentals of Database Systems", Pearson Education, 7th Edition

5. Webilography:

1. https://docs.oracle.com/en/database/index.html
2. https://docs.oracle.com/database/121/SQLRF/toc.htm

6. Accomplishment of the student after completing the course:

1. A student would be able to effectively squeeze the "real world" data into the relational data model of the database system and data retrieval
2. Clear understanding for the need of procedure, function and package.
3. Understand the uses the triggers
4. Understand the need for back end programming

7. Active Learning assignment:

Database Design Projects Each group should collectively identifies area (Like University Systems etc.) or system and to the extent perform database design. The key tasks are

1. To identify a business problem (Application)
2. Draw E-R Diagram
3. List PLSQL Objects for project
4. Implements PLSQL Objects and triggers