GLS UNIVERSITY
Bachelor of Computer Applications (BCA)
(Core Course)
Semester-III
210301303 DATABASE MANAGEMENT SYSTEM-II

1. Course Objective:

- The students will learn advanced database functions and queries.
- To make students familiar with advanced techniques of MySQL.
- To be aware of the different types of DBMS.
- The students will learn basic concepts of Big Data storage, mining and analysis.
- To make students familiar with working of MySQL with JSON.

2. Course Duration:

The course will have sessions which are divided into five modules. Each module consists of nine sessions of 60 minutes each and carries a weightage of 20%.

3. Course Contents:

Module No.	Modules/Sub-Modules	No. of Sessions	Marks Weightage

I	**Functions**
	• Distinct Values
	• String Functions
	• Sorting Data Function
	• Math Functions
	• to_Number Function
	• Date Functions
	  o Date & Time Format
	  o Sysdate, Now , Current Date
	  o Testing against a date range
	  o Extract date from given date
	  o Date Arithmetic
	  o Date Calculations
		09	20%

II	**Advanced SQL**
	• SQL Join Operators:
	  o Cross Join
	  o Natural Join
	  o Join USING Clause
	  o Join ON Clause
	  o Outer Join
	• Sub-queries:
	  o Where Subqueries
		09	20%

	○ IN Subqueries ○ Having Subqueries • View: ○ Create a view ▪ Inline Views ▪ Simple View ▪ Materialized View ▪ Complex View ○ Select a view ○ Drop a view		
III	**Introduction to BI & BI Architecture** • Need for Data Analysis • Business Intelligence • Business Intelligence Architecture • BI Architectural Components • Data Ware House • Data Mining • Big Data Analysis	09	20%
IV	**Introduction to Types of DBMS** • Object Oriented Database • Geographic DBMS • Multi Media DBMS • Engineering DBMS • Decision Support DBMS • Mobile and Personal DBMS • Parallel Database • DDBMS ○ Introduction to DDBMS ○ DDBMS Advantage & Disadvantage ○ Distributed Processing & Distributed Databases ○ DDBMS Components ○ Levels of Data & Process Distribution	09	20%
V	**MySQL with JSON** • Introduction • Why we use JSON • MySQL JSON Data Type • Creating a JSON field • Adding data a JSON field • Reading data from JSON • Updating data in JSON field • Deleting data in JSON field	09	20%

4. Teaching Methods:

The following pedagogical tools will be used to teach this course:

1. Laboratory Sessions
2. Assignments and Presentations
3. Videos, e-learning

5. Evaluation:

The students will be evaluated on a continuous basis and broadly follow the scheme given below:

1.	Assignments / Quizzes, etc.	30% (Internal Assessment)
2.	Internal Examination	20% (Internal Assessment)
3.	External Examination	50% (External Assessment)

6. Basic Text Books:

Sr. No	Author/s	Name of the book	Publisher	Edition
T1	Corronel, Morris, Rob	Database Principles: Fundamentals of Design, Implementation and Management	Cengage Learning	New

7. Reference Books:

Sr. No	Author/s	Name of the book	Publisher	Edition
R1	ISRD Group Mc Graw Hill	Database Management System	Mc Graw Hill	14th
R2	Ivan Bayross	Database Concepts & Systems	SPD	Latest

8. List of E-books / E-resources:

Sr. No	Link
1	E-Book: http://portal.aauj.edu/e_books/teach_yourself_oracle8_in_21_days.pdf
2	E-Book: https://www.tutorialspoint.com/mysql
3	E-Book: http://www.oracle.com/technetwork/database/features/plsql/overview/sample2174ch2-129586.pdf
4	E-Book : https://docs.oracle.com/cd/B28359_01/appdev.111/b28370.pdf
5	http://srikanthtechnologies.com/books/orabook/oraclebook.html
6	http://www.nptel.ac.in/courses/106106095/
7	http://www.nptel.ac.in/courses/106106095/6
8	http://nptel.ac.in/courses/106104135/
9	http://www.nptel.ac.in/courses/110106064/
10	https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=fBYckQKJvP3a/8Vd3L08tQ==

9. Session Plan:

Session No.	Topics / Chapters
1-3	Introduction to Functions: Distinct Values, String Functions, Sorting Data Function
4-6	Math Functions, to_Number Function, Date Functions
7-9	Sysdate, Now , Current Date, Testing against a date range, Extract date from given date, Date Arithmetic, Date Calculations
10-12	Introduction to SQL Join Operators: Cross Join, Natural Join, Join USING Clause, Join ON Clause, Outer Join
13-15	Introduction to Sub-queries: Where Subqueries, IN Subqueries, Having Subqueries
16-18	Introduction to View: Create a view, Inline Views, Simple View, Materialized View, Complex View, Select a view, Drop a view
19-23	Introduction to BI & BI Architecture: Need for Data Analysis, Business Intelligence, Business Intelligence Architecture
24-27	BI Architectural Components, Data Ware House, Data Mining, Big Data Analysis
28-30	Introduction to Types of DBMS: Object Oriented Database, Geographic DBMS, Multi Media DBMS
31-33	Engineering DBMS, Decision Support DBMS, Mobile and Personal DBMS, Parallel Database
34-36	Introduction to DDBMS: DDBMS Advantage & Disadvantage, Distributed Processing & Distributed Databases, DDBMS Components, Levels of Data & Process Distribution
37-49	Introduction MySQL with JSON, Why we use JSON, MySQL JSON Data Type
40-45	Creating a JSON field, Adding data a JSON field, Reading data from JSON, Updating data in JSON field, Deleting data in JSON field

10. Learning Outcome:

Upon the completion of this course, students will be able to:

- Use database advanced design techniques.
- Understand various types of database systems.
- Develop and implement the types of queries and sub queries, joins.
- Understand importance of big data analysis, storage and mining.
- Understand concepts of MYSQL with JSON.