

GBN Government Polytechnic Nilokheri (Karnal)

Lesson Plan

Name of the Faculty: Rakesh Kumar, Lecturer
Department: Computer Engineering
Semester: 3rd
Subject: DataBase Management Systems
Lesson Plan Duration: 15 weeks (from 20 Aug 2024 to 01Dec 2024)
****Work load (Lecture / Practical) per week (in hours): Lectures-02, practical -04**

Week	The ory		Practic al
	Lect. day	Topic(Inclu ding assignment / test)	Practical Topic
1st	1st	Introduction to Database system Concepts and Architecture Database Systems; Database and its purpose, Characteristics of the database approach, Advantages and disadvantages of database systems.	Ist Group (G1) Exercises on creation and modification of structure of tables.
	2nd	Classification of DBMS Users; Actors on the scene, Database Administrators, Database Designers, End Users, System Analysts and Application Programmers,	2 nd Group (G2) Exercises on creation and modification of structure of tables.
2nd	1st	Workers behind the scene (DBMS system designers and implementers, tool developers, operator and maintenance personnel).	Ist Group (G1) Exercises on inserting and deleting values from tables..
	2nd	Data models, schemas, instances, data base state. DBMS Architecture; The External level, The conceptual level, The internal level, Mappings. Data Independence; Logical data Independence, Physical data Independence. Database Languages and Interfaces; DBMS Language,	2 nd Group (G2) Exercises on inserting and deleting values from tables.
	1st	DBMS Interfaces. Classification of Database Management Systems- Centralized, Distributed, parallel and object based.	Ist Group (G1) Exercises on querying the table (using select command).

3rd	2nd	Data Modeling using E.R. Model (Entity Relationship Model) and Relational Data Models Classification; File based or primitive models, traditional data models, semantic data models.	2 nd Group (G2) Exercises on querying the table (using select command).
4th	1st	Entities and Attributes, Entity types and Entity sets, Key attribute and domain of attributes, Relationship among entities, Database design with E/R model.	Ist Group (G1) Revision of Practical 1 2 nd Group (G2) Revision of Practical 1.
	2nd	Relational Model Concepts: Domain, Attributes, Tuples cardinality, keys (Primary, Secondary, foreign, alternative keys) and Relations.	
5th	1st	Relational constraints and relational database schemes; Domain constraints, Key constraints and constraints on Null. Relational databases and relational database schemes,	Ist Group (G1) Revision of Practical 2 & 3 2 nd Group (G2) Revision of Practical 2 & 3
	2nd	Entity integrity, referential integrity and foreign key. Comparison b/w E/R model and Relational model.	
6th	1st	Normalization Trivial and Non-trivial Dependencies. Non-loss decomposition and functional dependencies,	Ist Group (G1) Exercises on using various types of joins. 2 nd Group (G2) Exercises on using various types of joins.
	2nd	First, Second and Third normal forms, Boyce/Codd normal form, denormalization.	
7th	1st	Database Access and Security Creating and using indexes, creating and using views.	Ist Group (G1) Exercises on using functions provided by database package. 2 nd Group (G2) Exercises on using functions provided by database package.
	2nd	Database security, process controls, database protection, grant and revoke.	
8th	1st	MYSQL/SQL (Structured Query Language) SQL* DDL (Data Definition Languages): Creating Tables,	Ist Group (G1) Revision of Practical 4 & 5 2 nd Group (G2) Revision of Practical 4 & 5
	2nd	Creating a table with data from another table, Inserting values into a table,	
9th	1st	Updating columns of a Table,	Revision of Practical and Doubts to both groups
	2nd	Deleting Rows, Dropping a Table.	
	1st	DML (Data Manipulation Language): Database Security and Privileges	Ist Group (G1)

10th	2nd	Grant and Revoke Command	Exercises on commands like Grant, Revoke, Commit and Rollback etc. 2 nd Group (G2) Exercises on commands like Grant, Revoke, Commit and Rollback etc.
11th	1st	Maintaining Database Objects, Commit and Rollback	Ist Group (G1) Design of database for any application.
	2nd	Various types of select commands,	2 nd Group (G2) Design of database for any application.
12th	1st	Various types of joins, sub query, aggregate functions.	Ist Group (G1) Revision of Practical 6 & 7
	2nd	Challenges of My SQL. Introduction to Big Data. Understanding Big Data with samples.	2 nd Group (G2) Revision of Practical 6 & 7
13th	1st	Revision of Ist Unit	Revision of Practical and Doubts To both Groups
	2nd	Revision of 2 nd Unit	
14th	1st	Revision of 3 rd Unit	Ist Group (G1) Revision of Practical and Doubts 2 nd Group (G2) Revision of Practical and Doubts
	2nd	Revision of 4 th Unit	
15th	1st	Revision of 5 th Unit	Ist Group (G1) Revision of Practical and Doubts 2 nd Group (G2) Revision of Practical and Doubts
	2nd	Revision of Practical's	