

Lesson Plan

Name of the Faculty : MS. Bharti(Ass. PROFESSOR)

Discipline : MCA

Semester : 3rd

Subject : Database Management Systems

(MCA-503)(MCA-523)

Lesson Plan Duration : 15 weeks (from july, 2018 to november 2018)

Work Load (Lecture/Practical) per week (in hours):Lecture: 3 practical:2

Week	Theory		Practical	
	Lecture Day	Topic(including Assignment/Test)	Practical Day	Topic
1st	1 st	DBMS an overview, Advantages of DBMS	1 st	Introduction to SQL
	2 nd	Network, Hierarchical Model	2 nd	create database, create table, use , drop, insert
	3 rd	Relational Model		
	T1	Tutorial---review of lectures		
2nd	4 th	Levels of abstraction, Data Independence,	3 rd	Create a database named ' Employee'.
	5 th	Data Models	4 th	Use the database 'Employee' and create a table 'Emp' with attributes'ename', 'ecity', 'salary', 'enumber', 'eaddress', 'depttname'.
	6 th	Assignment on above topics/ Test 1		
	T2	Tutorial---problem/review of lectures		
3rd	7 th	Instances and schemes, Data independence	5 th	Create another table 'Company' with attributes'cname', 'ccity', 'numberofemp', 'empnumber' in the database 'Employee'.
	8 th	Structures of a DBMS	6 th	To study the viewing commands (select , update)
	T3	Tutorial---problem/ review of lectures		
				Find the names of all employees who live in Delhi.
				Increase the salary of all

				employees by Rs. 5,000.
	9 th	Application Programmers & Data Base administrators – their function		
4th	10 th	Entities, Attributes and Entity Sets, Relation and Relationships sets	7 th	Find the company names where the number of employees is greater than 10,000. Change the Company City to Gurgaon where the Company name is 'TCS'.
	11 th	mapping and participation constraints, Aggregation	8 th	To study the commands to modify the structure of table (alter, delete) execute the following queries 1>Add an attribute named ' Designation' to the table 'Emp'.2>Modify the table 'Emp', Change the datatype of 'salary' attribute to float.
	12 th	Assignment on above topics/ Test 2		
	T4	Tutorial--- problem/review of lectures		
5th	13 th	Specialization and Generalization, Features of E-R Model.	9 th	3>Drop the attribute 'deptname' from the table 'emp'.4>Delete the entries from the table ' Company' where the number of employees are less than500.
	14 th	Introduction to relational model, Integrity constraints over relations	10 th	To study the commands that involve compound conditions (and, or, in , not in, between ,Not between , like , not like) and execute the following queries 1>Find the names of all employees who live in ' Gurgaon' and whose salary is betweenRs.20,000 and Rs. 30,000.2>Find the names of all employees whose names begin with either letter 'A' or 'B'.
	15 th	Enforcing Data Integrity, Integrity Constraints		

				3>Find the company names where the company city is 'Delhi' and the number of employees is not between 5000 and 10,000.4>Find the names of all companies that do not end with letter 'A'.
	T5	Tutorial--- problem/review of lectures		
6th	16 th	Relational Data, Logical Data Base Design,	11 th	To study the aggregate functions (sum, count, max, min, average) and execute the following queries: 1>Find the sum and average of salaries of all employees in computer science department.2>Find the number of all employees in company 'TCS'.3>Find the maximum and the minimum salary in the HR department.
	17 th	Reduction of E-R Diagrams to relations, Introduction to views	12 th	To study the grouping commands (group by, order by) and execute the following queries: 1>List all employee names in descending order.2>Find number of employees in each department where number of employees is greater than 5.3>List all the department names where average salary of a department is Rs.10,000.
	18 th	Assignment on above topics/ Test 3		
7th	19 th	Querying Relational Algebra and Relational Calculus	13 th	To study the commands involving data constraints and execute the following queries : 1> Alter table 'Emp' and make 'enumber' as the primary key.2>Alter table 'Company' and add the foreign key constraint
	20 th	Operations on Relational Algebra, Operations on Relational Calculus	14 th	3>Add a check constraint in the table 'Emp' such that salary has the value between 0 and

	21 st	Tuple Relational Calculus		Rs.1,00,000.
	T6	Domain Relational Calculus		
8th	22 nd	Tutorial--- problem/review of lectures	15 th	To study the commands for aliasing and renaming and execute the following queries using these commands: 1>Rename the name of database to 'Employee1'.
	23 rd	Database Design, Data Redundancy	16 th	2>Rename the name of table 'Emp' to 'Emp1'.
	24 th	Assignment on above topics/ Test 4		3> Change the name of the attribute 'ename' to 'empname'.
	T7	Tutorial--- problem/review of lectures		
9th	25 th	Introduction to Schema Refinement, Functional Dependencies	17 th	To study the commands for joins (cross join, inner join, outer join) and execute the Following queries using these commands: 1> Retrieve the complete record of an employee and its company from both the table using joins. 2> List all the employees working in the company 'TCS'.
	26 th	Normal Forms-First , Second, Third	18 th	To study the various set operations and execute the following queries using these commands: 1>List the enumber of all employees who live in Delhi and whose company is in Gurgaon or if both conditions are true.
	27 th	Boyce code, Fourth and Multivalued Dependencies		
	T8	Tutorial--- problem/review of lectures		
10th	28 th	Basic SQL Queries	19 th	2>List the enumber of all employees who live in Delhi but whose company is not in Gurgaon.
	29 th	Nested Queries	20 th	To study the various scalar

	30 th	Assignment on above topics/ Test5		functions and string functions (power, square, substring, reverse, upper, lower, concatenation)
	T9	Tutorial--- problem/review of lectures		
11th	31 st	Aggregate operator, Null Values	21 st	1>Reverse the names of all employees. 2>Change the names of company cities to uppercase. 3> Concatenate name and city of the employee.
	32 nd	implementation of Various Relational Algebra operations	22 nd	To study the commands for views
	33 rd	implementation of Various Relational Algebra operations		
	T10	Tutorial--- problem/review of lectures		
12th	34 th	Embedded SQL	23 rd	execute the following queries using these commands: 1>Create a view having ename and ecity.2> In the above view change the ecity to 'Delhi' where ename is 'John'.
	35 th	ACID Properties	24 th	3>Create a view having attributes from both the tables.4> Update the above view and increase the salary of all employees of IT department by Rs.1000.
	36 th	Transaction states		
	T11	Tutorial--- problem/review of lectures		
13th	37 th	Concurrency Control – Overview, Concurrency control problems	25 th	Study of Integrity Constraints in SQL.
	38 th	Locks, Locking Protocols, Deadlocks, Serializability	26 th	Study of Integrity Constraints in SQL.
	39 th	Assignment on above topics/ Test6		
	T12	Tutorial---problem/ review of lectures		
14th	40 th	HTTP, URL registration,	27 th	Study of Use of Group By and

		browsers		Having Clause.
	41 st	Types of Failures	28 th	Study of various types of Views.
	42 nd	Recovery Techniques, ARIES		
15th	43 rd	Problem session	29 th	Study of Indexes in SQL.
	44 th	Problem session	30 th	Study of Aggregate Functions in SQL.
	45 th	Problem session		

IMPORTANT DATES (KEY DATES)

(Ms.Bharti)

Ass. PROFESSOR