BASIRHAT COLLEGE

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN-2018-2019 JULY-DEC

B.Sc. Program with Computer Science (GE/DSC)

Semester-ll

Paper Title- DBMS

Paper Code- CMSGCOR02T

Credits-4

COURSE OUTCOME: -

After completion of this course the students will be able –

CO1 . Identify the basic concepts and various data model used in database design ER modelling concepts and architecture use and design queries using SQL.

CO2 . Apply relational database theory and be able to describe relational algebra expression, tuple and domain relation expression fro queries.

CO3 . Recognize and identify the use of normalization and functional dependency, indexing and hashing technique used in database design.

CO4 . Recognize/ identify the purpose of query processing and optimization and also demonstrate the basic of query evaluation.

CO5 . Apply and relate the concept of transaction, concurrency control and recovery in database.

CO6 . Discuss recovery system and be familiar with introduction to web database.

MONTH	COURSE/ TOPIC	TEACHER	CLASS HOUR	TUTORIAL
January	Characteristics of database approach, datamodels, DBMS architecture and data independence. 1. Create tables with relevant foreign	**DP**	26	Theoretical-12 Practical-12 Tutorial-02

	key constraints 2. Populate the tables with data 3. Perform the following queries on the database : 1. Display all the details of all employees working in the company. 2. Display ssn, lname, fname, address of employees who work in department no 7. 3. Retrieve the birthdate and address of the employee whose name is 'Franklin T. Wong' 4. Retrieve the name and salary of every employee 5. Retrieve all distinct salary values. 6. Retrieve all employee names whose address is in „Bellaire" 7. Retrieve all employees who were born during the 1950s			
February	Entity types, relationships, SQL-99: Schema Definition , constraints, and object modeling. 8. Retrieve all employees in department 5 whose salary is between 50,000 and 60,000(inclusive) 9. Retrieve the names of all employees who do not have supervisors 10. Retrieve SSN and department name for all employees 11. Retrieve the name and address of all employees who work for the 'Research' department 12. For every project located in 'Stafford', list the project number, the controlling department number, and the department manager's last name, address, and birthdate. 13. For each employee, retrieve the employee's name, and the name of his or her immediate supervisor.	DP	24	Theoretical-11 Practical-11 Tutorial-02
	Basic concepts, relational constraints, relational algebra, SQLqueries.	DP	24	Theoretical-11 Practical-11

March	14. Retrieve all combinations of Employee Name and Department Name 15. Make a list of all project numbers for projects that involve an employee whose last name is 'Narayan‟ either as a worker or as a manager of the department that controls the project. 16. Increase the salary of all employees working on the 'ProductX' project by 15%. Retrieve employee name and increased salary of these employees. 17. Retrieve a list of employees and the project name each works in, ordered by the employee's department, and within each department ordered alphabetically by employee first name. 18. Select the names of employees whose salary does not match with salary of any employee in department 10. 19. Retrieve the name of each employee who has a dependent with the same first name and same sex as the employee. 20. Retrieve the employee numbers of all employees who work on project located			Tutorial-02
April	ER and EER to relational mapping, functional dependencies, 20. Retrieve the employee numbers of all employees who work on project located in Bellaire, Houston, or Stafford. 21. Find the sum of the salaries of all employees, the maximum salary, the minimum salary, and the average salary. Display with proper headings. 22. Find the sum of the salaries and number of employees of all	DP	24	Theoretical-11 Practical-11 Tutorial-02

	employees of the „Marketing" department, as well as the maximum salary, the minimum salary, and the average salary in this department. 23. Select the names of employees whose salary is greater than the average salary of all employees in department 10. 24. For each department, retrieve the department number, the number of employees in the department, and their average salary. 25. For each project, retrieve the project number, the project name, and the number of employees who work on that project.			
May	normal forms up to third normal form. 26. Change the location and controlling department number for all projects having more than 5 employees to „Bellaire" and 6 respectively. 27. For each department having more than 10 employees, retrieve the department no, no of employees drawing more than 40,000 as salary. 28. Insert a record in Project table which violates referential integrity constraint with respect to Department number. Now remove the violation by making necessary insertion in the Department table. 29. Delete all dependents of employee whose ssn is „123456789". 30. Delete an employee from Employee table with ssn = „12345"(make sure that this employee has some dependents, is working on some project, is a manager of some department and is supervising some employees). Check and display the cascading effect on Dependent and Works on table. In Department table MGRSSN should be set to default value and in Employee table	DP	8	Theoretical-3 Practical-3 Tutorial-02

	SUPERSSN should be set to NULL 31. Perform a query using alter command to drop/add field and a constraint in Employee table.			
		TOTAL	106	

Resources :

Books:

1. R. Elmasri, S.B. Navathe, Fundamentals of Database Systems 6th Edition, Pearson Education, 2010.
2. R. Ramakrishanan, J. Gehrke, Database Management Systems 3rd Edition, McGraw-Hill, 2002.
3. A. Silberschatz, H.F. Korth, S. Sudarshan, Database System Concepts 6th Edition, McGraw Hill, 2010.
4. R. Elmasri, S.B. Navathe Database Systems Models, Languages, Design and application Programming, 6th Edition, Pearson Education, 2013.