GUJARAT UNIVERSITY
BCA SEMESTER IV SYLLABUS

COURSE TITLE	Database Management System - II
COURSE CODE	CC-208
COURSE CREDIT	3
Session Per Week	4
Total Teaching Hours	40 HOURS

AIM

The aim of the course is to make student how to use these concepts in database applications.

LEARNING OUTCOMES

Students would be able to:

1) Decide where and how to store and retrieve the information effectively using advanced concept of database
2) Recognize the elements of Database for real life applications.
3) Familiar with the advanced database concepts such as distributed database, business intelligence and data warehouse etc.

DETAIL SYLLABUS

UNIT	TOPIC / SUB TOPIC	TEACHING HOURS
	Introduction to SQL	10

1	●Introduction to SQL
	●Data Definition Commands
	   o Data Types
	   o Creating Table Structures
	   o SQL Constraints
	●Data Manipulation Commands
	   o Adding Table Rows
	   o Saving Table Changes
	   o Listing Table Rows
	   o Updating Table Rows
	   o Restoring Table Contents
	   o Deleting Table Row
		5

	●Select Query
	   o With Conditional Restrictions
	   o Arithmetic Operators
	   o Logical Operators
	   o Special Operators
	●Advanced Data Definition Commands
	   o Changing a Column's Data Type
	   o Changing a Column's Data Characteristic
	   o Adding a column
	   o Dropping a column
	   o Advanced Data Update
	   o Copying Parts of Table
	   o Adding Primary and Foreign Key Designations
	   o Deleting Table From The Database
		5

	Transaction Management and Concurrency Control	10
2	• What is a Transaction? • Concurrency Control • Concurrency Control with Locking Methods • Concurrency Control with Stamping Methods • Concurrency Control with Optimistic Methods • Database Recovery Management	
	Distributed Database Management System	10
3	○ Evolution of DDBMS ○ Distributed Processing and Distributed Database	2
	• Levels of Data and Process Distribution ○ Single-Site Processing, Single-Site Data(SPSD) ○ Multiple-Site Processing, Single-Site Data(MPSD) ○ Multiple-Site Processing, Multiple-Site Data(MPSD)	3
	• Distributed Database Transparency Features • Distributed Transparency • Transaction Transparency ○ Distributed Requests and Distributed Transactions ○ Distributed Concurrency Control ○ Two-Phase Commit Protocol • Performance Transparency and Query Optimization	5
	Advanced SQL	10
4	• Set Operators ○ Union ○ Union All ○ Intersect ○ Minus	2
	• SQL Join ○ Cross Join ○ Natural Join ○ Join Using Clause ○ Join On Clause ○ Outer Join • SQL Functions ○ Date and Time ○ Numeric ○ String ○ Conversion	5
	• Sub Queries ○ Where Sub Queries ○ In Sub Queries ○ Multirow Sub Query Operators: Any and All ○ From Sub queries ○ Attribute list Sub queries ○ Correlated Sub queries • Sequence	3

TEXT BOOK/S:

Database System Concepts (First Edition: 2008)
Publisher: Cengage Learning
By Peter Rob and Carlos Coronel

Chapter-10 (10.1, 10.2, 10.3, 10.4, 10.5, 10.6)
Chapter-12 (12.1, 12.3, 12.6, 12.7, 12.8, 12.9, and 12.10)
Chapter-7 (7.1, 7.2 (7.2.4, 7.2.5, 7.2.6, 7.2.7) 7.3, 7.4, 7.5, 7.6.3) Excluding (7.1.1, 7.1.2, 7.2.3)
Chapter-8 (8.1, 8.2, 8.3, 8.4, 8.5)

REFERENCE BOOKS:

1. Introduction to Database Management Systems (First Edition 2006)
   Publisher: Tata McGraw-Hill
   By ISRD Group

2. An Introduction to Database Systems (Eighth Edition 2006)
   Publisher : Pearson
   By C. J. Date, A. Kannan & S. Swamynathan

3. An Introduction to Database Systems
   Publisher: Pearson
   By ITL Education Solutions Limited

WEB RESOURCES:

https://www.techonthenet.com/oracle/
http://www.way2tutorial.com/sql/oracle_sql_introduction_type_of_sql_statement.php
https://docs.oracle.com/cd/B19306_01/server.102/b14200/

COURSE TITLE	DATABASE MANAGEMENT SYSTEM-II PRACTICAL
COURSE CODE	CC-212
COURSE CREDIT	3
SESSIONS PER WEEK	3
TOTAL TEACHING HOURS	40 HOURS

AIM

To develop the skill about the basic knowledge of SQL.

LEARNING OUTCOMES

On the completion of the course students will:
1.Understand the SQL concepts.

DETAIL SYLLABUS

UNIT	TOPIC / SUB TOPIC		TEACHING HOURS
1	**SQL**		**10**
	Create table structures. o With Different data types of SQL o with use of necessary constraints _ Primary Key _ Foreign Key _ Not Null _ Unique _ Default _ Check		5 hours
	Perform following data manipulation commands on table For Example: o Adding Table Rows o Saving Table Changes o Listing Table Rows o Updating Table Rows o Restoring Table Contents o Deleting Table Row		5 hours
2	**SQL**		**10**
	Perform select queries on different tables. with arithmetic operators o with conditional restrictions o with logical operators o with special operators		8 hours
	Apply advanced data definition commands on table For Example: o Changing a Column's Data Type o Changing a Column's Data Characteristic o Adding a column o Dropping a column o Advanced Data Update o Copying Parts of Table o Adding Primary and Foreign Key Designations o Deleting Table From The Database		2 hours

	Advanced SQL	10 hours
3	Perform select query with aggregate functions o Min o Max o Count o Sum o Avg	2 hours
	Apply set operators on any given two tables. o Union o Union All o Intersect o minus	2 hours
	Perform join on given two or more than two tables. o Cross Join o Natural Join o Join Using Clause o Join On Clause o Outer Join	6 hours
4	Advanced SQL	10 hours
	Demonstrate the use of SQL functions using SQL query on different tables. o Date and Time o Numeric o String o Conversion	3 hours
	Demonstrate the use of sub queries on different tables. o Where o In o Having o Multi rows (Any/ All) o From sub query o Attribute list o correlated	6 hours
	Create sequences and demonstrate the use of sequence.(Create, Use and Delete)	1 hours

Following type of sample questions can be asked in the final examination

1. CUST(CID,CNAME,CCITY,DOB)
PROD(PID,PNAME,PCOST,PPROFIT)
SALE_DETAIL(CID,PID,SALE,SALE_DATE)
1) Write a query that display purchase detail of all customers based on sale date.
2) Display the Name of customers who are born in 1985.
3) Display the name of product starts with "s".
4) Display details of product having maximum sales.

2. BRANCH_MASTER(B_NO,B_NAME,LOCATION)
CUSTOMER_MASTER(C_NO,C_NAME,GENDER,DOB,CITY,CONTACT_NO)
ACCOUNT_MASTER(ACC_NO,ACC_TYPE,B_NO,C_NO,OPEN_DATE,CURR_ BALANCE)
1) Display details of male customers only.
2) Display the details of account opened in 1999.
3) List all records where current balance not less than 4000.
4) List all branch names where branch number is 1 or 3.

3. EMP(EMP_NO,EMP_NAME,DESIGNATION,MGR_NO,HIREDATE,SALARY,
COMMISSION,DEPT_NO)
DEPT(DEPT_NO,DEPT_NAME,LOCATION)
1) List DEPTNO as DEPARTMENT NUMBER, Count of Employees as "Number of Employees"
FROM Employee table.
2) List all employees who earn more than the average salary of their departments.
3) List DEPTNO, sum of salary department wise of employees who earn more than 2000.
4) Create a view on all the employee details of deptno=10.

4. PERSON (P_ID, LASTNAME, FIRSTNAME, ADDRESS, CITY)
ORDER (O_ID, ORDERNO, P_ID,ORDER_PRICE)
1) List all persons in Norway and USA:
2) Select only the records with NULL values in the "Address" column
3) List firstname,lastname with an Order month "November".
4) Count the no of persons having average order price=20;

5. PROGRAMMER(NAME,DOB,DOJ,PROF1,PROF2,SALARY)
SOFTWARE(NAME,TITLE,DEV_IN,SCOST,DCOST,SOLD)
STUDIES (NAME,SPLACE,COURSE,CCOST)
1) How many programmers have done the PGDCA course.
2) Display the institute names from the Studies table without Duplicates.
3) Display details of software having maximum scost.
4) Display the names of the programmers whose names contain 2 Occurrences of the letter
'A':

TEXTBOOKS:

Database System Concepts (First Edition: 2008)
Publisher: Cengage Learning
By Peter Rob and Carlos Coronel

REFERENCE BOOKS

1. SQL, PL/SQL: The Programming Language Of Oracle (4th Revised Edition) by Ivan Bayross
Publisher: BPB Publications
2. An Introduction to Database Systems (Eighth Edition 2006)
Publisher : Pearson
By C. J. Date, A. Kannan & S. Swamynathan

REQUIRED SOFTWARE: