BMS COLLEGE OF ENGINEERING, BENGALURU-19
Autonomous Institute, Affiliated to VTU

PROPOSED COURSE PLAN

Academic Year	April-July-2021	**Sem**	4th	**Section(s)**	A, B,C,D
Faculty Name:	Dr.Kayarvizhy, Prof. Vikrant B, Dr. Selvakumar, Dr.K.Panimozhi				
Course Title:	Database Base Management Systems				
Course Code:	19CS4PCDBM				
L-T-P-S:	3-0-0-1	**Total Credits:**	4		

A Course Outcomes

At the end of the course the student will be able to

CO1	Ability to **apply** the concepts of database management system for various applications
CO2	Ability to **analyse** the given database concepts to its correctness
CO3	Ability to **design** and demonstrate conceptual models, query and optimization.
CO4	Ability to **conduct** experiments to demonstrate the various SQL query processing.

B CO-PO-PSO mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3												1		
CO2		3												2	
CO3			3											3	
CO4			3		3									2	

Indicate strength of mapping (1/2/3) with justification

C Proposed Assessment Plan (for 50 marks of CIE)

Tool	Remarks	Marks
Internals	**Best 2 of 3**	**20**
QUIZ	**1**	**5**
Lab Component	**Lab Test**	**25**
Total		**50**

D **Proposed Lecture Plan**

Unit No.	Sl.No.	Topics
	1	**Introduction to Databases**: Introduction, An Example, Characteristics of Database approach, Advantages of using DBMS approach, When not to use a DBMS.
	2	**Database System Concepts and Architecture**: Data models, Schemas and instances Three schema architecture and data independence
	3	Database languages and interfaces, The database system environment
UNIT 1	4	**SQL:** SQL Data Definition and Data Types specifying basic constraints in SQL
	5	Basic retrieval queries in SQL, Insert, Delete and Update statements in SQL, Additional features of SQL
	6	More complex SQL Queries, Specifying Constraints as Assertion and Trigger Views (Virtual Tables) in SQL
	7	Schema Change Statement in SQL.
	1	**Data Modeling using the Entity-Relationship(ER) model**: Using High-Level conceptual Data Models for Database Design, A sample Database Application
	2	Entity types, Entity Sets, Attributes and Keys
	3	Relationship Types, Relationship Sets, Roles and Structural Constraints
UNIT 2	4	Weak Entity types, Refining the ER Design, ER Diagrams
	5	Naming Conventions and Design Issues,
	6	Relationship Types of Degree Higher than two.
	7	Database Design using ER-to-Relational Mapping.
	8	Database Design using ER-to-Relational Mapping.
	1	**Relational Data Model and Relational Database Constraints**: Relational Model Concepts
	2	Relational Model Constraints
UNIT- 3	3	Relational Database Schemas, Update Operations, Transactions
	4	Dealing with Constraint Violations.
	5	**Relational Algebra:** Unary Relational Operations, SELECT and PROJECT,
	6	Relational Algebra Operations from Set Theory
	7	Binary Relational Operations: JOIN and DIVISION
	8	Additional Relational Operations, Examples of Queries in Relational Algebra.
	1	**Database Design Theory and Normalization:** Informal Design Guidelines for

			Relation Schemas
		2	Functional Dependencies
		3	Normal Forms Based on Primary Keys
	UNIT 4	4	General Definitions of Second and Third Normal Forms
		5	Boyce-Codd Normal Form
		6	Multi-valued Dependencies and a Fourth Normal Form
		7	Join Dependencies
		8	Fifth Normal Form.
		1	**Transaction Processing, Concurrency Control, and Recovery:** Introduction to Transaction Processing, Transaction and System Concepts
		2	Desirable Properties of Transactions
		3	Characterizing Schedules Based on Recoverability
		4	Characterizing Schedules Based on Serializability
		5	Two-Phase Locking Techniques for Concurrency Control,
	UNIT 5	6	Recovery Concepts ,NO-UNDO/REDO Recovery Techniques based on Deferred Update
		7	Recovery Techniques Based on Immediate Update
		8	Shadow Paging, The ARIES Recovery Algorithm.

Prescribed Text Book

Sl. No.	Book Title	Authors	Edition	Publisher	Year
1.	**Fundamentals of Database Systems**	Ramez Elmasri and Shamkant B Navathe	Sixth Edition	Pearson	2017
2.	**Database Management Systems**	Ramakrishnan and Gehrke	3rd Edition	McGraw Hill	2014

Reference Text Book

Sl. No.	Book Title	Authors	Edition	Publisher	Year
1.	**An Introduction to Database Systems**	C.J. Date, A.Kannan, S.Swamynathan	8th Edition	Pearson Education	2006
2.	**Database Systems: The Complete Book**	Hector Garcia-Molina,Jeffrey D.Ullman, Jennifer Widom ,	Second Edition	Pearson Education	2001
3.	**Database System Concepts**	Abraham Silberschatz, HenryF. Korth, S.	Sixth Edition	Tata McGraw-Hill	2010

Sudarshan

E-Book

Sl. No.	Book Title	Authors	Edition	Publisher	Year	URL
1.	An Introduction to Relational Database Theory	Hugh Darwen	3rd Edition	Ventus Publishing ApS	2012	https://zodml.org/sites/default/files/An_Introduction_to_Relational_Database_Theory_0.pdf
2.	Database Systems: Design, Implementation, and Management, Eighth Edition	Peter Rob and Carlos Coronel	8th Edition		2009	http://m5zn.com/newuploads/2015/04/27/pdf/b38963a5c2824b9.pdf

MOOC Course

Sl. No.	Course name	Course Offered By	Year	URL
1.	Data Base Management System	NPTEL	2019	https://onlinecourses.nptel.ac.in/noc19_cs12/preview
2.	Data Base Management System	SWAYAM	2017	https://swayam.gov.in/course/220-database-management-system
3.	SQL tutorial	W3 schools	--	www.w3schools.com/sql/

E **Proposed Tutorial Plan** *(if applicable):NA*

F **Proposed Lab Plan**

Instructions to Students to be followed in each DBMS lab:

1. Each Student should write down the work carried out and the outputs in the observation book and get it evaluated by the respective lab faculty in-charge.

2. Each Student should bring the lab record with the programs and output written for the programs completed in their respective previous week and get it evaluated by the lab faculty in-charge.

Writing SQL Queries using Oracle for the following database systems

Experiment #	Name of Experiment
1	Insurance Database
2	Banking Enterprise Database
3	Supplier Database

	4	Student Faculty Database
	5	Airline Flight Database
	6	Order Processing Database
	7	Book dealer Database
	8	Student Enrolment Database
	9	Movie Database
	10	College Database

G	**Proposed Self-Study Plan** *(if applicable):NA*
H	**List the suggestions/Comments for improvement of the course (or similar course) delivered during the previous Academic year** *(as mentioned in the Course File)*
I	**Proposed Action Plan to address the suggestions/Comments**
J	**CO Attainment during the previous Academic Year**

CO#	Attainment: CAYm1 (Jan-May 2019)	Remarks
CO1		
CO2		
CO3		

K	**Proposed innovations in TLP/Best Practices (delivery/assessment)**
L	**Any other**

Signature(s) of the Faculty(s) Signature of the HOD

Date:

Note:

i) The Course plan is an attempt to ensure **continuous improvement** in the TLP of the course.
ii) The proposed Course Plan is submitted to **DAC** before the commencement of the semester.
iii) At the end of the semester, the faculty shall submit the **actual implemented plan**.
iv) Calendar of Events included.