

NITK –Surathkal
Department of Computer Science & Engineering
Course Plan

Name of the Course: Database Management Systems Lab	Course No: CO303	No. of Credits (L-T-P): 2(0-0-3)
Year : 2019 Semester: V Section: S1 &S2	Course Type: Program Core(PC)	Academic Session: ODD

Prerequisites (if any):None

Name and Contact Details of Course Instructor:

Dr.M.Venkatesan, venkisakthi77@gmail.com

Mr. Vinnakota Saran Chaitanya(AL), vsaranchaitanya@gmail.com

Mr. Ankit Gupta(AL), ankitguptamiet1500@gmail.com

Evaluation Scheme: Project(Application) - 30%, Mid Sem - 30%, Final Exam - 40%.

Course Objectives:

1. Develop solid understanding and practical experience using relational databases
2. Understand database logical design and draw an ER diagram using data model tools
3. Understand the types of SQL Language such as DDL,DML,DTL and DCL
4. Construct advanced database queries using sub query and join
5. Develop an web based application for real time case studies

Course (Learning) Outcomes (COs):

CO1 – Able to know the basic structure of database and its related operations.

CO2 – Recognise and use various types SQL queries for database applications.

CO3 – Design database using ER Model and various types of normalization techniques.

CO4 – Know the complex SQL Queries and able to develop a web based applications.

Mapping of COs with POs:

(Strength of correlation: S-Strong, M-Medium, W-Weak)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	M	S	S	M	S	M	M	W	W	S	S	S
CO2	S	S	S	S	S	W	W	W	W	M	S	S
CO3	S	S	S	S	S	S	M	M	M	S	M	S
CO4	S	S	S	S	S	M	S	M	S	M	S	S

1. Teaching Learning Interaction:

Module – Title		Content	L-T-P hours
M1	Overview of Database Concepts and Introduction to SQL	Database concepts, Introduction to MySQL, DDL,DML,DTL and DCL.	6-0-0
M2	Integrity Constraints	Overview of Constraints, Primary Key, Unique, Not Null, check and Foreign Key. Table level and column level constraints. Constraints violation.	10-2-0
M3	My SQL Operators	Arithmetic ,Relational and Logical operator	6-1-0
M4	My SQL Functions	String Functions, Date and time functions Numeric Functions and Aggregate Functions	7-2-0
M5	Sub query	Select query with where, Having and Group by clause and Nested query	5-1-0
M6	Joins	Querying multiple tables, Inner Join, Equi Join, Left Outer and Right outer Join	10-1-0
M7	Advanced Concepts	Index, Database Backup and SQL Injection,	4-2-0
	Topics beyond syllabus/Advanced Topics (if any): No SQL Database-MongoDB		
	Gaps in the Syllabus (if any)		

2. List of Text Books & Reference Books, On-line Course Resources:

- Ramez Elmasri and Shamkant B.Navathe, Fundamentals of Database Systems, Pearson Education, 7th edition, 2016.*
- Raghu Rama Krishnan, Database Management Systems, Tata Mcgraw Hill, 3rd Edition, 2014.*
- Vikram Vaswani , MySQL(TM): The Complete Reference, McGraw Hill Education; 1 edition, 2017*
- James Groff (Author), Paul Weinberg (Author), And Oppel, SQL The Complete Reference, 3rd Edition, 2017*

2.1 NPTEL Courses (<http://www.nptel.ac.in>):

- a. Database Management System -Prof. Partha Pratim Das -IIT Kharagpur (Jul- Sep 2019)
- b. Database Design / Database Management System -Prof. D. Janakiram- -IIT Madras
- c. Fundamentals of Database Systems- Prof. Arnab Bhattacharya-IIT Kanpur
- d. Database Management System -Partha Pratim Das-IIT Kharagpur

2.2 Other Online Courses:

- a. SQL Course For Beginners: Learn SQL Using MySQL Database
<https://www.udemy.com/sqlcourse/>
- b. MySQL for Beginners: <https://www.udemy.com/mysql-db-for-beginners/>
- c. Introduction to Structured Query Language (SQL): <https://www.coursera.org/learn/intro-sql>

3 Suggested list of Assignments / home works /problems/ ANY OTHER : Annexure-I

4. Laboratory Instructions (if any) :

Develop an application and implement a database system for an any real time applications area in which you have an interest. Use back end as MySQL and front end environments of your choice to develop your system. You are required to consider the following stages to complete your task:

Stage1: Choose your real time application and explore suitable framework to develop your application and submit one page abstract about your project.

Stage 2: Design an ER diagram of your proposed database application using any one of the ER tools like ER win, ER studio, etc

Stage 3: Map the ER diagram to Relation Schema and Apply integrity constraints.

Stage 4: Develop your backend using MySql database and learn sql operations, sub query and join.

Stage 5: Develop an application(front end environment) based on your choice

Stage 6: Demonstrate the DB system with a written report and justify your system meets the minimum requirements of the lab.

5. Assessment Pattern (Use Bloom's Taxonomy to design rubrics for evaluating student performance)

Level No.	Knowledge Level	Evaluation Component					Assessment (%)
		Project Review1 (10%)	Project Review 2 (10%)	Project Review 3 (10%)	Mid Sem (30%)	Final Exam (40%)	
K1	Remember	10%	0%	0%	10%	10%	8
K2	Understand	20%	20%	20%	20%	15%	18
K3	Apply	20%	20%	10%	25%	25%	22.5
K4	Analyse	20%	20%	10%	20%	25%	21
K5	Evaluate	20%	20%	10%	15%	15%	15.5
K6	Create	10%	20%	50%	10%	10%	15
							100%

Name and Signature of Course Instructor:

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HOD signature: