



K L Deemed to be University

**Department of Computer Science and Engineering-Honors -- KLVZA
Course Handout
2022-2023, Summer Term**

Course Title	:DATABASE MANAGEMENT SYSTEMS
Course Code	:22AD2102A
L-T-P-S Structure	: 3-0-4-0
Pre-requisite	:
Credits	: 5
Course Coordinator	:Bhavani Vasantha
Team of Instructors	:
Teaching Associates	:

Syllabus :Database Fundamentals: DBMS Characteristics & Advantages, Database Environment, Database Users, Database Architecture, Data Independence, Languages, Tools and Interface in DBMS, DBMS types. Data Modeling: ER Model, Notation used in ER Diagram, Constraint, Types, Relationships in ER Model and other considerations in designing ER diagram. Enhanced, ER data Model, EER Diagram Relational Model: concepts, constraints, schemas, ER to Relational Model. SQL & Relational Algebra: Data Definition and other languages in SQL, Creating tables and Data types, Constraints, DML statements, Functions and writing SQL statements using nested sub queries, complex queries, joining relations, views, compound statements, user defined functions, user defined procedures, cursors, Triggers, Relational Algebra :Operators in relational algebra, Database Design: Guidelines for good database design Normalization- Normal Forms, First, Second, Third Normal Forms, BCNF, Multi value and join dependencies, 4th and 5th normal forms. Decomposition algorithms for normalization. File and Storage Structures: File storage, Index structures, Indexing and hashing, Query processing and optimization. Transaction Management: Transaction processing issues, Transaction states, problems during multiple transactions processing, ACID properties, system log and concurrency control Techniques: Lock based techniques, and Timestamp based techniques, Multiversion based Techniques. Recovery Techniques: Recovery concepts, shadow paging, ARIES

Text Books :Book1: Database System Concepts by Abraham Silberschatz, Yale University Henry, F. Korth Lehigh University, S. Sudarshan Indian Institute of Technology, Bombay. 6th Edition Book2: Fundamentals of Database Systems by RamezElmasri, University of Texas at Arlington, Shamkant B. Navathe, University of Texas at Arlington. 7th Edition Book3: An Introduction to Database Systems by Bipin C. Desai 1st Edition Book4: Principles of Database Systems by Jeffrey D. Ullman 1st Edition Book5: Database Management Systems by Raghu Ramakrishnan, Johannes Gehrke 3rd Edition

Web Links :1. DBMS by Mr. Arnab Chakraborty, Tutorials Point India Private Limited:
<https://www.tutorialspoint.com/videot> 2. DBMS by Edureka :https://www.youtube.com/watch?v=oH9qtC6_W-4 3. DBMS by Edoreal Learning Solution: <https://www.youtube.com/watch?v=cMUQznvYZ6w>

MOOCS :1. Database Foundations, <https://www.linkedin.com/learning/database-foundations-database-management> 2. Database Systems Concepts & Design, <https://www.udacity.com/course/database-systems-concepts-design--ud150> 3. Introduction to Databases, <https://www.coursera.org/learn/introduction-to-databases> 4. Database Management Essentials, <https://www.coursera.org/learn/database-management#syllabus>

Course Rationale :Course rationale to include the following aspects: This course offers to the students to impart theoretical and practical aspects of Database Management System To study and elaborate the case studies of business information systems for designing and developing a project based learning to acquire experiential learning.

COURSE OUTCOMES (COs):

CO NO	Course Outcome (CO)	PO/PSO	Blooms Taxonomy Level (BTL)
CO1	Make use of ER model for Databases	PSO1,PO1,PO2	3
CO2	Develop relational model for a database & Implement SQL concepts and relational algebra.	PSO1,PO2,PO3	3
CO3	Analyze the concepts of indexing, PL/SQL programs on a given database.	PSO1,PO3,PO5	4
CO4	Analyze the importance of transaction Processing, concurrency control and recovery techniques.	PO5,PSO1,PO3	4
CO5	Estimate the Performance analysis of the Distributed Databases	PSO1,PO4,PO5	5
CO6	Measure the Distributed database- Replication, Sharding, Performance analysis Using MongoDB	PSO1,PO2,PO5	5

COURSE OUTCOME INDICATORS (COIs)::

Outcome No.	Highest BTL	COI-3	COI-2	COI-4	COI-5
CO1	3	Btl-3 make use of ERmodel for database			
CO2	3	Btl-3 Develop ER Model Concepts for Relational DB design	Btl-2 illustrate the DDL, DML, TCL commands, Interpret various symbols used in Relation Algebra.		
CO3	4	Btl-3 Apply the concepts of query processing		Btl-4 Analyze the concepts of indexing, PL/SQL programs on a given database.	
CO4	4			Btl-4 Analyze various concepts of concurrency control techniques.	
CO5	5			Btl-4 Analyze the Replication Concepts in Distributed Databases, various Shading techniques.	Btl-5 Estimate the Performance analysis of the Distributed Databases
CO6	5	Btl-3 Apply the DDL,DML commands using PostgreSQL	Btl-2 understand ER model and convert ER to relation model	Btl-4 outline the PL/Sql programs using PostgreSQL	Btl-5 Measure the Distributed database-Replication, Sharding,

PROGRAM OUTCOMES & PROGRAM SPECIFIC OUTCOMES (POs/PSOs)

Po No.	Program Outcome
PO1	Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	Problem Analysis: Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences
PO3	Design/Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations
PO4	Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions for complex problems that cannot be solved by straightforward application of knowledge, theories and techniques applicable to the engineering discipline.
PO5	Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
PO6	The Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	Environment and Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice
PO9	Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
PO11	Project Management and Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.
PSO1	An ability to design and develop software projects as well as Analyze and test user requirements.
PSO2	An Ability to gain working Knowledge on emerging software tools and technologies.

Lecture Course DELIVERY Plan:

Sess.No.	CO	COI	Topic	Book No[CH No][Page No]	Teaching-Learning Methods	Evaluation Components
1	CO1	COI-3	Course handout Explanation, Database	T1[8-9],T2[10-	Chalk,LTC,PPT,Talk	ALM,End Semester

Sess.No.	CO	COI	Topic	Book No[CH No][Page No]	Teaching-Learning Methods	Evaluation Components
			Fundamentals: DBMS Characteristics & Advantages, Database Environment, Database Users	14,17], T1[38-42]		Exam,MOOCs Review,SEM-EXAM1
2	CO1	COI-3	Database Architecture, Data Independence, Languages, Tools and Interface in DBMS, DBMS types	T2[15-17], T2[32-36] ,T2[52-53]	Chalk,LTC,PPT,Talk	ALM,MOOCs Review,SEM-EXAM1
3	CO1	COI-3	Data Modelling: ER Model, Notation used in ER Diagram	T2[60-71]	Chalk,LTC,PPT,Talk	ALM,MOOCs Review,SEM-EXAM1
4	CO1	COI-3	Constraint Types, Relationships in ER Model	T2[72-81][88-92]	Chalk,LTC,PPT,Talk	ALM,MOOCs Review,SEM-EXAM1
5	CO1	COI-3	Considerations in designing ER diagram. Enhanced, ER data Model, EER Diagram	T1[283-310], T2 [108-122]	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review,SEM-EXAM1
6	CO1	COI-3	ER To Relational Model, SQL Introduction	T1[259-274], T2 [10-14,17]	Chalk,LTC,PPT,Talk	ALM,MOOCs Review,SEM-EXAM1
7	CO2	COI-2	Data Definition and other languages in SQL, Creating tables	T2 [179 –201]	Chalk,LTC,PPT,Talk	ALM,MOOCs Review,SEM-EXAM1
8	CO2	COI-2	Data types, Constraints, DML statements	T1[135-143]	Chalk,LTC,PPT,Talk	ALM,MOOCs Review,SEM-EXAM1
9	CO2	COI-2	Functions and writing SQL statements using nested sub queries	T1[149-153]	Chalk,LTC,PPT,Talk	ALM,MOOCs Review,SEM-EXAM1
10	CO2	COI-3	joining relations, views, compound statements, user defined functions	T2 [207 –216]	Chalk,LTC,PPT,Talk	ALM,MOOCs Review,SEM-EXAM1
11	CO2	COI-3	complex queries with Syntax	T2 [216-223]	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review,SEM-EXAM1
12	CO2	COI-	User defined procedures	T1[232-240]	Chalk,LTC,PPT,Talk	ALM,MOOCs

Sess.No.	CO	COI	Topic	Book No[CH No][Page No]	Teaching-Learning Methods	Evaluation Components
		3				Review,SEM-EXAM1
13	CO2	COI-3	cursors, Triggers	T1[180-186]	Chalk,LTC,PPT,Talk	ALM,MOOCs Review,SEM-EXAM1
14	CO2	COI-3	Relational Algebra	T1[657-683]	Chalk,LTC,PPT,Talk	ALM,MOOCs Review,SEM-EXAM1
15	CO3	COI-3	PL/SQL programs with Syntax and Examples	T2[226-227], T1[173-178]	Chalk,LTC,PPT,Talk	ALM,MOOCs Review,SEM-EXAM2
16	CO3	COI-3	Database Design: Guidelines for good database design	T[1257-264], 294	Chalk,LTC,PPT,Talk	ALM,MOOCs Review,SEM-EXAM2
17	CO3	COI-3	Normalization- Normal Forms, First, Second, Third Normal Forms,	T1[257-264]	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review,SEM-EXAM2
18	CO3	COI-4	BCNF, Multi value and join dependencies, 4th and 5th normal forms.	T1[268-275]	Chalk,LTC,PPT,Talk	ALM,MOOCs Review,SEM-EXAM2
19	CO3	COI-4	Decomposition algorithms for normalization.	T2[541-568]	Chalk,LTC,PPT,Talk	ALM,MOOCs Review,SEM-EXAM2
20	CO3	COI-4	File and Storage Structures: File storage	T2[541-568]	Chalk,LTC,PPT,Talk	ALM,MOOCs Review,SEM-EXAM2
21	CO3	COI-4	Index structures	T1[602-633],R3[339-366]	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review,SEM-EXAM2
22	CO3	COI-4	Indexing and hashing,	T1[602-633],R3[339-366]	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review,SEM-EXAM2
23	CO4	COI-4	Transaction Management: Transaction processing issues, Transaction states	T1[121-127]	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review,SEM-EXAM2
24	CO4	COI-4	problems during multiple transactions processing	R3[520-523]	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review,SEM-EXAM2
25	CO4	COI-	ACID properties	R3[520-523]	Chalk,LTC,PPT,Talk	ALM,End Semester

Sess.No.	CO	COI	Topic	Book No[CH No][Page No]	Teaching-Learning Methods	Evaluation Components
		4				Exam,MOOCs Review,SEM-EXAM2
26	CO4	COI-4	system log and concurrency control Techniques: Lock based techniques	T1[578-584], [591-596]	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review,SEM-EXAM2
27	CO4	COI-4	Timestamp based techniques	T1[596-599], [604-606]	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review,SEM-EXAM2
28	CO4	COI-4	Multiversion based Techniques. Recovery Techniques	T1[639-645]	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review
29	CO4	COI-4	Recovery concepts, shadow paging	T1[646-657]	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review,SEM-EXAM2
30	CO1	COI-3	Recovery algorithm: ARIES.	T1[646-657]	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review,SEM-EXAM2
31	CO5	COI-4	Mongo DB: Introduction to NOSQL	Weblink1	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review
32	CO5	COI-4	CRUD operations	weblink1	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review
33	CO5	COI-4	INDEXING	weblink1	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review
34	CO5	COI-4	MongoDB AGGREGATE functions	weblink1	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review
35	CO5	COI-5	Distributed database	weblink1	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review
36	CO5	COI-5	Replication	weblink1	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review
37	CO5	COI-5	Sharding,	Weblink 1	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review
38	CO5	COI-5	MongoDB Performance analysis.	weblink1	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review

Sess.No.	CO	COI	Topic	Book No[CH No][Page No]	Teaching-Learning Methods	Evaluation Components
39	CO5	COI-5	MongoDB application	weblink1	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review

Lecture Session wise Teaching – Learning Plan

SESSION NUMBER : 1

Session Outcome: 1 Students able to understand course handout and Database Fundamentals

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	LTC	--- NOT APPLICABLE ---
20	Course handout Explanation	3	LTC	--- NOT APPLICABLE ---
25	Database Fundamentals: DBMS Characteristics & Advantages, Database Environment, Database Users	3	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 2

Session Outcome: 1 Student able to understand Data Independence, Languages,Tools and Interface in DBMS, DBMS types

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	LTC	--- NOT APPLICABLE ---
20	Explanation of Database Architecture, Data Independence	3	LTC	--- NOT APPLICABLE ---
20	Explanation of Languages,Tools and Interface in DBMS, DBMS types	3	LTC	--- NOT APPLICABLE ---
5	Discussions	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 3

Session Outcome: 1 Student able to draw ER diagram

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	3	Talk	Case Study
20	Explanation of Data Modelling: ER Model	3	PPT	Case Study
20	Explanation of Notation used in ER Diagram	3	PPT	Case Study
5	Discussions	3	Talk	Case Study

SESSION NUMBER : 4

Session Outcome: 1 student able to understand different constraints and relationships in ER model

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	3	Talk	--- NOT APPLICABLE ---
20	Constraint Types	3	LTC	--- NOT APPLICABLE ---
20	Relationships in ER Model	3	PPT	--- NOT APPLICABLE ---
5	Discussions	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 5

Session Outcome: 1 student able to understand EER diagram

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	3	Talk	--- NOT APPLICABLE ---
20	Explanation of Considerations in designing ER diagram	3	PPT	--- NOT APPLICABLE ---
20	Explanation of Enhanced, ER data Model, EER Diagram	3	PPT	--- NOT APPLICABLE ---
5	Discussions	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 6

Session Outcome: 1 student able to understand conversion from ER To Relational Model, SQL Introduction

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	3	Talk	--- NOT APPLICABLE ---
20	conversion from ER To Relational Model	3	LTC	Case Study
20	explanation of SQL Introduction	3	PPT	Case Study
5	Discussions	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 7

Session Outcome: 1 students able to understand different languages in SQL

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	2	Talk	--- NOT APPLICABLE ---
20	explanation of languages in SQL	2	PPT	--- NOT APPLICABLE ---
20	explanation of Creating tables	2	LTC	--- NOT APPLICABLE ---
5	summary of the session	2	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 8

Session Outcome: 1 student able to understand Data types, Constraints, DML statements

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	2	Talk	--- NOT APPLICABLE ---
20	explanation of Data types, Constraints	2	PPT	One minute paper
20	explanation of DML statements	2	PPT	One minute paper
5	summary of the session	2	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 9

Session Outcome: 1 student able to understand Functions and writing SQL statements using nested sub queries

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	3	Talk	--- NOT APPLICABLE ---
20	explanation of Functions and writing SQL statements using nested sub queries	3	PPT	One minute paper
20	explanation of Functions and writing SQL statements using nested sub queries	3	PPT	One minute paper
5	summary of the session	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 10

Session Outcome: 1 student able to understand joining relations, views, compound statements, user defined functions

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	3	Talk	--- NOT APPLICABLE ---
20	explanation of joining relations, views	3	PPT	--- NOT APPLICABLE ---
20	Explanation of compound statements, user defined functions	3	PPT	--- NOT APPLICABLE ---
5	summary of the session	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 11

Session Outcome: 1 student able to understand complex queries with Syntax

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	3	Talk	--- NOT APPLICABLE ---
20	Explanation of complex queries with Syntax	3	PPT	--- NOT APPLICABLE

20	Explanation of complex queries with Syntax with examples	3	PPT	--- NOT APPLICABLE ---
5	summary of the session	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 12**Session Outcome:** 1 student able to understand User defined procedures

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	3	Talk	--- NOT APPLICABLE ---
20	Explanation of User defined procedures	3	PPT	--- NOT APPLICABLE ---
20	Explanation of User defined procedures	3	PPT	--- NOT APPLICABLE ---
20	summary of the session	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 13**Session Outcome:** 1 Students able to understand cursors, Triggers

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	3	Talk	--- NOT APPLICABLE ---
20	Explanation of cursors	3	PPT	--- NOT APPLICABLE ---
20	Explanation of Triggers	3	PPT	--- NOT APPLICABLE ---
5	summary of the session	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 14**Session Outcome:** 1 Student able to understand Relational Algebra

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	3	Talk	--- NOT APPLICABLE ---
20	Explanation of Relational Algebra	3	PPT	--- NOT APPLICABLE ---
20	Explanation of Relational Algebra	3	PPT	--- NOT APPLICABLE ---
20	summary of the session	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 15

Session Outcome: 1 Student able to understand PL/SQL programs with Syntax and Examples

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	3	Talk	--- NOT APPLICABLE ---
20	Explanation of PL/SQL programs with Syntax	3	PPT	--- NOT APPLICABLE ---
20	Explanation of PL/SQL programs with Syntax and Examples	3	PPT	--- NOT APPLICABLE ---
5	summary of the session	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 16

Session Outcome: 1 Student able to understand Database Design: Guidelines for good database design

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	3	Talk	--- NOT APPLICABLE ---
20	Explanation of Database Design: Guidelines for good database design	3	PPT	--- NOT APPLICABLE ---
20	Explanation of Database Design: Guidelines for good database design	3	PPT	--- NOT APPLICABLE ---

5	summary of the session	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 17

Session Outcome: 1 Student able to understand Normalization- Normal Forms, First, Second, Third Normal Forms,

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	3	Talk	Think / Pair / Share
20	Explanation of Normalization- Normal Forms, First Normal Forms	3	PPT	Think / Pair / Share
20	Explanation of Second, Third Normal Forms	3	PPT	Think / Pair / Share
5	summary of the session	3	Talk	Think / Pair / Share

SESSION NUMBER : 18

Session Outcome: 1 Student able to understand BCNF, Multi value and join dependencies, 4th and 5th normal forms.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	4	Talk	--- NOT APPLICABLE ---
20	Explanation of BCNF, Multi value and join dependencies	4	PPT	--- NOT APPLICABLE ---
20	Explanation of 4th and 5th normal forms.	4	PPT	--- NOT APPLICABLE ---
5	summary of the session	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 19

Session Outcome: 1 Students able to understand Decomposition algorithms for normalization. File and Storage Structures: File storage

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods

5	Attendance	4	Talk	--- NOT APPLICABLE ---
20	Explanation of Decomposition algorithms for normalization.	4	PPT	One minute paper
20	Explanation of Decomposition algorithms for normalization	4	PPT	One minute paper
5	summary of the session	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 20

Session Outcome: 1 student able to understand File and Storage Structures: File storage

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	4	Talk	--- NOT APPLICABLE ---
20	Explanation of File and Storage Structures	4	PPT	--- NOT APPLICABLE ---
20	Explanation of File storage	4	PPT	--- NOT APPLICABLE ---
5	summary of the session	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 21

Session Outcome: 1 Student able to understand Index structures

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	4	Talk	--- NOT APPLICABLE ---
40	Explanation of Index structure	4	PPT	--- NOT APPLICABLE ---
5	summary of the session	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 22

Session Outcome: 1 Students able to understand Indexing and hashing,

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	4	Talk	--- NOT APPLICABLE ---
20	Explanation of Indexing and hashing,	4	PPT	--- NOT APPLICABLE ---
20	Explanation of hashing,	4	PPT	--- NOT APPLICABLE ---
20	summary of the session	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 23

Session Outcome: 1 student able to understand Transaction Management: Transaction processing issues, Transaction states

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	2	Talk	--- NOT APPLICABLE ---
20	Explanation of Transaction Management: Transaction processing issues	2	PPT	--- NOT APPLICABLE ---
20	Explanation of Transaction states	2	PPT	--- NOT APPLICABLE ---
5	summary of the session	2	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 24

Session Outcome: 1 Students able to understand problems during multiple transactions processing

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	4	Talk	--- NOT APPLICABLE ---
20	Explanation about problems during multiple transactions processing	4	PPT	Just in-time teaching
20	Explanation about problems during multiple transactions processing	4	PPT	Just in-time teaching

5	Summary of the session	4	Talk	--- NOT APPLICABLE ---
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SESSION NUMBER : 25

Session Outcome: 1 Students able to understand ACID properties

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	4	Talk	--- NOT APPLICABLE ---
40	Explanation of ACID properties	4	PPT	--- NOT APPLICABLE ---
5	Summary of the Session	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 26

Session Outcome: 1 Students able to understand system log and concurrency control Techniques: Lock based techniques

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	4	Talk	--- NOT APPLICABLE ---
20	Explanation of system log and concurrency control Techniques	4	PPT	--- NOT APPLICABLE ---
20	Explanation of Lock based techniques	4	PPT	--- NOT APPLICABLE ---
5	Summary of the session	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 27

Session Outcome: 1 Students able to understand Timestamp based techniques

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	4	Talk	--- NOT APPLICABLE

40	Explanation of Timestamp based techniques	4	PPT	Think / Pair / Share
5	Summary of the Session	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 28

Session Outcome: 1 Students able to understand Multiversion based Techniques. Recovery Techniques

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	4	Talk	--- NOT APPLICABLE ---
20	Explanation of Multiversion based Technique	4	PPT	--- NOT APPLICABLE ---
20	Explanation of Recovery Techniques	4	PPT	--- NOT APPLICABLE ---
5	Summary of the session	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 29

Session Outcome: 1 Students able to understand Recovery concepts, shadow paging

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	4	Talk	--- NOT APPLICABLE ---
20	Explanation of Recovery concepts	4	PPT	--- NOT APPLICABLE ---
20	Explanation of shadow paging	4	PPT	--- NOT APPLICABLE ---
5	Summary of the session	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 30

Session Outcome: 1 Students able to understand Recovery algorithm: ARIES.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	4	Talk	--- NOT APPLICABLE ---
40	Explanation of Recovery algorithm: ARIES.	4	PPT	--- NOT APPLICABLE ---
5	Summary of the Session	4	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 31**Session Outcome:** 1 Mongo DB: Introduction to NOSQL

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	4	Talk	--- NOT APPLICABLE ---
20	Explanation of Introduction to MongoDB	4	PPT	--- NOT APPLICABLE ---
20	Explanation of Introduction to NOSQL	4	PPT	--- NOT APPLICABLE ---
20	Summary of the session	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 32**Session Outcome:** 1 Students able to understand CRUD operations

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	4	Talk	--- NOT APPLICABLE ---
40	CRUD operations	4	PPT	Role playing
5	Summary of the Session	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 33**Session Outcome:** 1 Students able to understand INDEXING

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	4	Talk	--- NOT APPLICABLE ---
40	Explanation of INDEXING	4	PPT	--- NOT APPLICABLE ---
5	Summary of the Session	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 34

Session Outcome: 1 Students able to understand MongoDB AGGREGATE functions

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	4	Talk	--- NOT APPLICABLE ---
20	Explanation of MongoDB AGGREGATE functions	4	PPT	--- NOT APPLICABLE ---
20	Examples of MongoDB AGGREGATE functions	4	PPT	--- NOT APPLICABLE ---
5	summary of the session	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 35

Session Outcome: 1 Students able to understand Distributed database

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	5	Talk	--- NOT APPLICABLE ---
40	Explanation of Distributed database	5	PPT	--- NOT APPLICABLE ---
5	Summary of the Session	5	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 36

Session Outcome: 1 Students able to understand Replication

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	5	Talk	--- NOT APPLICABLE ---
20	Explanation of Replication	5	PPT	One minute paper
20	Explanation of Replication examples	5	PPT	--- NOT APPLICABLE ---
5	Summary of the session	5	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 37**Session Outcome: 1** Students able to understand Sharding concept

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	5	Talk	--- NOT APPLICABLE ---
40	Explanation of Sharding concepts	5	PPT	--- NOT APPLICABLE ---
5	Summary of the Session	5	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 38**Session Outcome: 1** Students able to understand MongoDB Performance analysis.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	5	Talk	--- NOT APPLICABLE ---
40	Explanation of MongoDB Performance analysis.	5	PPT	--- NOT APPLICABLE ---
5	Summary of the Session	5	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 39

Session Outcome: 1 Students able to understand MongoDB application

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	5	Talk	--- NOT APPLICABLE ---
40	Explanation of MongoDB application	5	PPT	--- NOT APPLICABLE ---
5	Summary of the Session	5	Talk	--- NOT APPLICABLE ---

Tutorial Course DELIVERY Plan: NO Delivery Plan Exists

Tutorial Session wise Teaching – Learning Plan

No Session Plans Exists

Practical Course DELIVERY Plan:

Tutorial Session no	Topics	CO-Mapping
1	Installation of POSTGRESQL client & server	CO6
2	Installation of TERA ER tool & case study-1 & 2(convert ER to relation model)	CO6
3	Case Study-3& 4(convert ER to relation model)	CO6
4	Implementation of DDL & DML Commands	CO6
5	Implementation of Joins: Inner Join, Outer Join, Natural Join	CO6
6	Implementation of Nested Sub Quires	CO6
7	Implementation of: Sub Queries and Views	CO6
8	Implementation of PL/SQL programs, procedures, functions	CO6
9	Implementation of Triggers & Cursors	CO6
10	Aggregate Functions, Group by & Having Clauses and Set Operations	CO6
11	Implement Correlated Nested Query, Views, and DCL Commands	CO6

Tutorial Session no	Topics	CO-Mapping
12	Implementation of Transaction in SQL Server	CO6
13	MongoDB installation and configuration in windows	CO6
14	Create and Drop Database in MongoDB	CO6
15	Creating the Collection and Drop the collection using MongoDB.	CO6
16	Insert Document and Query Document in MongoDB collection	CO6
17	Update and delete document in MongoDB collection.	CO6
18	MongoDB Projection	CO6
19	MongoDB indexing	CO6
20	Aggregations operations in MongoDB	CO6
21	Capstone Project-1	CO6
22	Capstone Project-2	CO6
23	capstone project-3	CO6
24	capstone project-4	CO6
25	Capstone project - 5	CO6
26	Capstone project - 6	CO6

Practical Session wise Teaching – Learning Plan

SESSION NUMBER : 1

Session Outcome: 1 Student able to do Installation of POSTGRESQL client & server

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	ATTENDENCE	1	LTC	--- NOT APPLICABLE ---
45	Installation of POSTGRESQL client & server	3	LTC	--- NOT APPLICABLE

50	Installation of POSTGRESQL client & server	3	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 2**Session Outcome:** 1 Installation of TERA ER tool & case study-1 & 2(convert ER to relation model)

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
25	Explanation of Installation of TERA ER tool and how utilized this tool.	3	PPT	--- NOT APPLICABLE ---
50	Execution of lab experiment	3	LTC	--- NOT APPLICABLE ---
20	Evaluation of lab experiment	3	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 3**Session Outcome:** 1 Case Study-3& 4(convert ER to relation model)

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
25	Explanation of Case Study-3& 4(convert ER to relation model)	3	PPT	--- NOT APPLICABLE ---
50	Execution of lab experiment	3	LTC	--- NOT APPLICABLE ---
20	Evaluation of lab experiment	3	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 4**Session Outcome:** 1 Implementation of DDL & DML Commands

Time(min)	Topic	BTL	Teaching-Learning	Active Learning

			Methods	Methods
5	Attendance	3	PPT	--- NOT APPLICABLE ---
25	Explanation of DDL & DML Commands	3	PPT	--- NOT APPLICABLE ---
50	Execution of lab experiment	3	LTC	--- NOT APPLICABLE ---
20	Evaluation of lab experiment	3	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 5

Session Outcome: 1 Implementation of Joins: Inner Join, Outer Join, Natural Join

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
25	Explanation of Joins: Inner Join, Outer Join, Natural Join	3	PPT	--- NOT APPLICABLE ---
50	Execution of lab experiment	3	LTC	--- NOT APPLICABLE ---
20	Evaluation of lab experiment	3	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 6

Session Outcome: 1 Implementation of Nested Sub Quires

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
25	Explanation of Nested Sub Quires	3	PPT	--- NOT APPLICABLE ---
50	Execution of lab experiment.	3	LTC	--- NOT APPLICABLE ---

20	Evalution of lab experiment.	3	LTC	--- NOT APPLICABLE ---
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SESSION NUMBER : 7**Session Outcome:** 1 Implementation of: Sub Queries and Views

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
25	Explanation of Sub Queries and Views	3	PPT	--- NOT APPLICABLE ---
45	Execution of lab experiment.	3	LTC	--- NOT APPLICABLE ---
20	Evalution of lab experiment.	3	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 8**Session Outcome:** 1 Implementation of PL/SQL programs, procedures, functions

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
25	Explanation of PL/SQL programs, procedures, functions	3	PPT	--- NOT APPLICABLE ---
50	Execution of lab experiment.	3	LTC	--- NOT APPLICABLE ---
20	Evalution of lab experiment.	3	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 9**Session Outcome:** 1 Implementation of Triggers & Cursors

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
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5	Attendance	1	Talk	--- NOT APPLICABLE ---
25	Explanation of Triggers & Cursors	3	PPT	--- NOT APPLICABLE ---
50	Execution of lab experiment	3	LTC	--- NOT APPLICABLE ---
20	Evaluation of lab experiment	3	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 10

Session Outcome: 1 Aggregate Functions, Group by & Having Clauses and Set Operations

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
25	Explanation of Aggregate Functions, Group by & Having Clauses and Set Operations	2	PPT	--- NOT APPLICABLE ---
50	Execution of lab experiment	3	LTC	--- NOT APPLICABLE ---
20	Evaluation of lab experiment	3	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 11

Session Outcome: 1 Implement Correlated Nested Query, Views, and DCL Commands

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
25	Explanation of Correlated Nested Query, Views, and DCL Commands.	2	PPT	--- NOT APPLICABLE ---
50	Execution of lab experiment	3	LTC	--- NOT APPLICABLE ---
20	Evaluation of lab experiment	3	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 12

Session Outcome: 1 Implementation of Transaction in SQL Server.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
25	Explanation of Implementation of Transaction in SQL Server	2	PPT	--- NOT APPLICABLE ---
50	Execution of lab experiment	4	LTC	--- NOT APPLICABLE ---
20	Evaluation of lab experiment	4	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 13

Session Outcome: 1 MongoDB installation and configuration in windows.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
60	Explanation and Execution of MongoDB installation and configuration in windows.	3	LTC	--- NOT APPLICABLE ---
35	Evaluation of lab experiment	4	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 14

Session Outcome: 1 Create and Drop Database in MongoDB

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
25	Explanation of Create and Drop Database in MongoDB	2	PPT	--- NOT APPLICABLE

50	Execution of lab experiment	3	LTC	--- NOT APPLICABLE ---
20	Evaluation of lab experiment	3	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 15

Session Outcome: 1 Creating the Collection and Drop the collection using MongoDB

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
25	Explanation of Creating the Collection and Drop the collection using MongoDB	2	PPT	--- NOT APPLICABLE ---
50	Execution of lab experiment	3	LTC	--- NOT APPLICABLE ---
20	Evaluation of lab experiment	3	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 16

Session Outcome: 1 Insert Document and Query Document in MongoDB collection

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
25	Insert Document and Query Document in MongoDB collection	2	PPT	--- NOT APPLICABLE ---
50	Execution of lab experiment	3	LTC	--- NOT APPLICABLE ---
20	Evaluation of lab experiment	3	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 17

Session Outcome: 1 Update and delete document in MongoDB collection

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
25	Explanation of Update and delete document in MongoDB collection	2	PPT	--- NOT APPLICABLE ---
50	Execution of lab experiment	3	LTC	--- NOT APPLICABLE ---
20	Evaluation of lab experiment	3	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 18**Session Outcome: 1** MongoDB Projection

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
25	Explanation of MongoDB Projection	2	PPT	--- NOT APPLICABLE ---
50	Execution of lab experiment	4	LTC	--- NOT APPLICABLE ---
20	Evaluation of lab experiment	4	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 19**Session Outcome: 1** MongoDB indexing

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
25	Explanation of MongoDB indexing	2	PPT	--- NOT APPLICABLE ---
50	Execution of lab experiment	4	LTC	--- NOT APPLICABLE

20	Evalution of lab experiment	4	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 20

Session Outcome: 1 Aggregations operations in MongoDB

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
25	Explanation of Aggregations operations in MongoDB	2	PPT	--- NOT APPLICABLE ---
45	Execution of lab experiment	4	LTC	--- NOT APPLICABLE ---
20	Evalution of lab experiment	4	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 21

Session Outcome: 1 Capstone Project-1

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
25	Explanation of Capstone Project	2	PPT	--- NOT APPLICABLE ---
50	Execution of Project	5	LTC	--- NOT APPLICABLE ---
20	Evalution of Project	5	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 22

Session Outcome: 1 Capstone Project-2

Time(min)	Topic	BTL	Teaching-Learning	Active Learning

			Methods	Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
25	Explanation of Capstone Project-2	2	PPT	--- NOT APPLICABLE ---
50	Execution of Project	5	LTC	--- NOT APPLICABLE ---
20	Evaluation of Project	5	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 23

Session Outcome: 1 capstone project-3

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	5	Talk	--- NOT APPLICABLE ---
40	Explanation of capstone project-3	5	LTC	--- NOT APPLICABLE ---
45	Execution of capstone project-3	5	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 24

Session Outcome: 1 capstone project-4

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	5	Talk	--- NOT APPLICABLE ---
40	Explanation of capstone project-4	5	LTC	--- NOT APPLICABLE ---
45	Execution of capstone project-4	5	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 25

Session Outcome: 1 Capstone project - 5

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
25	Explanation of Capstone project - 5	5	PPT	--- NOT APPLICABLE ---
50	Execution of Project	5	LTC	--- NOT APPLICABLE ---
20	Evaluation of Project	5	LTC	--- NOT APPLICABLE ---

SESSION NUMBER : 26

Session Outcome: 1 Capstone project - 6

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
25	Explanation of Capstone project - 5	5	LTC	--- NOT APPLICABLE ---
50	Execution of Project	5	LTC	--- NOT APPLICABLE ---
20	Evaluation of Project	5	LTC	--- NOT APPLICABLE ---

Skilling Course DELIVERY Plan: NO Delivery Plan Exists

Skilling Session wise Teaching – Learning Plan

No Session Plans Exists

WEEKLY HOMEWORK ASSIGNMENTS/ PROBLEM SETS/OPEN ENDED PROBLEM-SOLVING EXERCISES etc:

Week	Assignment Type	Assignment No	Topic	Details	co

COURSE TIME TABLE:

	Hour	1	2	3	4	5	6	7	8	9
Day	Component									
Mon	Theory	---	---	---	---	---	---	V-S1,V-S2,V-S8	V-S1,V-S2,V-S8	
	Tutorial	---	---	---	---	---	---	--	--	
	Lab	---	---	---	---	---	---	--	--	
	Skilling	---	---	---	---	---	---	--	--	
Tue	Theory	---	---	---	---	---	---	V-S3	V-S3	
	Tutorial	---	---	---	---	---	---	--	--	
	Lab	---	---	---	---	---	---	V-S1,V-S1,V-S2,V-S2,V-S8	V-S1,V-S1,V-S2,V-S2,V-S8	
	Skilling	---	---	---	---	---	---	--	--	
Wed	Theory	---	---	---	---	---	---	--	--	
	Tutorial	---	---	---	---	---	---	--	--	
	Lab	---	---	---	---	---	---	V-S3,V-S3,V-S5,V-S5,V-S6,V-S6	V-S3,V-S3,V-S5,V-S5,V-S6,V-S6	
	Skilling	---	---	---	---	---	---	--	--	
Thu	Theory	---	---	---	---	---	---	V-S5,V-S6	V-S5,V-S6	
	Tutorial	---	---	---	---	---	---	--	--	
	Lab	---	---	---	---	---	---	V-S4,V-S4,V-S8	V-S4,V-S4,V-S8	
	Skilling	---	---	---	---	---	---	--	--	
Fri	Theory	--	--	--	--	--	--	--	--	
	Tutorial	--	--	--	--	--	--	--	--	
	Lab	--	--	--	--	--	--	--	--	
	Skilling	--	--	--	--	--	--	--	--	
Sat	Theory	--	--	--	--	--	--	--	--	
	Tutorial	--	--	--	--	--	--	--	--	
	Lab	--	--	--	--	--	--	--	--	
	Skilling	--	--	--	--	--	--	--	--	
Sun	Theory	--	--	--	--	--	--	--	--	
	Tutorial	--	--	--	--	--	--	--	--	
	Lab	--	--	--	--	--	--	--	--	
	Skilling	--	--	--	--	--	--	--	--	

REMEDIAL CLASSES:

Supplement course handout, which may perhaps include special lectures and discussions that would be planned, and schedule notified according

SELF-LEARNING:

Assignments to promote self-learning, survey of contents from multiple sources.

S.no	Topics	CO	ALM	References/MOOCs
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DELIVERY DETAILS OF CONTENT BEYOND SYLLABUS:

Content beyond syllabus covered (if any) should be delivered to all students that would be planned, and schedule notified accordingly.

S.no	Advanced Topics, Additional Reading, Research papers and any	CO	ALM	References/MOOCs
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EVALUATION PLAN:

Evaluation Type	Evaluation Component	Weightage/Marks		Assessment Dates	Duration (Hours)	CO1	CO2	CO3	CO4	CO5	CO6
End Semester Summative Evaluation Total= 40 %	End Semester Exam	Weightage	25		180	5	5	5	5	5	
		Max Marks	100			20	20	20	20	20	
	Lab End Semester Exam	Weightage	15		120						15
		Max Marks	50								50
In Semester Summative Evaluation Total= 38 %	Semester in Exam-I	Weightage	12		90	6	6				
		Max Marks	50			25	25				
	Semester in Exam-II	Weightage	12		90			6	6		
		Max Marks	50					25	25		
	Lab In Semester Exam	Weightage	8		120						8
		Max Marks	50								50
	Mock Test	Weightage	6		90					6	
		Max Marks	25								25
In Semester Formative Evaluation Total= 22 %	ALM	Weightage	7.5		120	1.5	1.5	1.5	1.5	1.5	
		Max Marks	50			10	10	10	10	10	
	Continuous Evaluation - Lab Exercise	Weightage	7		120						7
		Max Marks	50								50
	MOOCs Review	Weightage	7.5		120	1.5	1.5	1.5	1.5	1.5	
		Max Marks	50			10	10	10	10	10	

ATTENDANCE POLICY:

Every student is expected to be responsible for regularity of his/her attendance in class rooms and laboratories, to appear in scheduled tests and examinations and fulfill all other tasks assigned to him/her in every course. In every course, student has to maintain a minimum of 85% attendance to be eligible for appearing in Semester end examination of the course, for cases of medical issues and other unavoidable circumstances the students will be condoned if their attendance is between 75% to 85% in every course, subjected to submission of medical certificates, medical case file and other needful documental proof to the concerned departments.

DETENTION POLICY :

In any course, a student has to maintain a minimum of 85% attendance and In-Semester Examinations to be eligible for appearing to the Semester End Examination, failing to fulfill these conditions will deem such student

to have been detained in that course.

PLAGIARISM POLICY :

Supplement course handout, which may perhaps include special lectures and discussions

COURSE TEAM MEMBERS, CHAMBER CONSULTATION HOURS AND CHAMBER VENUE DETAILS:

Supplement course handout, which may perhaps include special lectures and discussions

Name of Faculty	Delivery Component of Faculty	Sections of Faculty	Chamber Consultation Day (s)	Chamber Consultation Timings for each day	Chamber Consultation Room No:	Signature of Course faculty:
Vijaya Babu Burra	L	2-MA	-	-	-	-
Vijaya Babu Burra	P	2-A,4-B	-	-	-	-
Pradeepini Gera	L	8-MA	-	-	-	-
Pradeepini Gera	P	6-B,8-A,4-A	-	-	-	-
Sridhar Palacharla	L	3-MA	-	-	-	-
Sridhar Palacharla	P	3-A,8-B	-	-	-	-
Ashok P M	L	4-MA	-	-	-	-
Ashok P M	P	2-B	-	-	-	-
Veerubhotla Sarma	L	6-MA	-	-	-	-
Veerubhotla Sarma	P	6-A	-	-	-	-
Savaram Mythreya	P	5-A	-	-	-	-
Venkata Satya Vivek Tammineedi	P	1-B	-	-	-	-
K B Venkata Brahma Rao	L	1-MA	-	-	-	-
K B Venkata Brahma Rao	P	1-A,5-B	-	-	-	-
Srinvas Palvadi	L	5-MA	-	-	-	-
Srinvas Palvadi	P	3-B	-	-	-	-

GENERAL INSTRUCTIONS

Students should come prepared for classes and carry the text book(s) or material(s) as prescribed by the Course Faculty to the class.

NOTICES

Most of the notices are available on the LMS platform.

All notices will be communicated through the institution email.

All notices concerning the course will be displayed on the respective Notice Boards.

Signature of COURSE COORDINATOR

(Bhavani Vasantha)

Signature of Department Prof. Incharge Academics & Vetting Team Member

Department Of CSE-Honors

HEAD OF DEPARTMENT:

Approval from: DEAN-ACADEMICS

(Sign with Office Seal) [object HTMLDivElement]