VIKASH INSTITUTE OF TECHNOLOGY, BARGARH

LESSON PLAN

Semester: 4TH	**Year: 2025**	**Course: B.Tech**
	Sub:DATABASE ENGINEERING	**Total Credit:03**
Branch : CSE	**Sub Code :**	
Name of the Faculty:	**LOVELY RATH**	
Designation :	**ASST. PROFESSOR**	
Department :	CSE	
Session	**2024-25**	
Recommended Books	**Text book:**	
	Fundamentals of database system,Ramez Elmasri&Shamkant,Pearson publication	
	2	
	Reference Books:	
	1	
	2	

Sl. No.	Lecture No.	Topics to be covered	No. of Classes
		MODULE-1	
1	Lecture-01	Overview of database system vs file system,overall database structure	**8**
2	Lecture-02	characteristics of database,advantage of DBMS	
3	Lecture-03	History of database application,database concept	
4	Lecture-04	types of users,database design life cycle	
5	Lecture-05	Data models types,schema,3-schema archicture,data independence,database language&interfaces,DDL,DML	
6	Lecture-06	ER model concepts,notation,Mapping constraints,key concepts,relationship to higher degree,extended ER model	
7	Lecture-07	Specialisation,generalisation,Aggregation	
8	Lecture-08	super key,candiadate keys concept with question practice session	
		MODULE-2	
9	Lecture-09	Relational model concept,Codd's rule,integrity constraints,Entity integrity	
10	Lecture-10	Referential integrity,key constraints,Domain constraints,Update operations,transaction	
11	Lecture-11	Selection,projection,set operation,renamimg,join,division,Relational algebra	
12	Lecture-12	Introduction to SQL,characteristics,advantages of SQL,Types of SQL commands	
13	Lecture-13	SQL data defination,datatypes,,specifying constraints in SQL,Basic retrival of queries inSQL,INSERT,DELETE,UPDATE statements	10
14	Lecture-14	Additional features,more SQL retrival Queries,views&index,Queries&subQueries	
15	Lecture-15	Aggregate function,,join,union,intersection,minus cursors,triggers procedure in SQL	
16	Lecture-16	procedure in SQL/PL SQL	
17	Lecture-17	Calculus,Domain relational calculus	
18	Lecture-18	Calculus concepts	

MODULE-3			
19	Lecture-19	data base design theory, dependencies	
20	Lecture-20	Normal form based on primary key, 2nd, 3rd Normal form	
21	Lecture-21	Boyce codd nnormal form, multivalued dependencies and 4th & 5th normal form	
22	Lecture-22	Normalisation algorithm	
23	Lecture-23	Inference rule, equivalence and minimal cover	
24	Lecture-24	Properties of relational decomposition, algorithm for relation database schema	
25	Lecture-25	Dangling Tupples and alternate realtional design	
26	Lecture-26	Further discussion of multivalued dependency	
27	Lecture-27	Other dependencies and normal form	9
MODULE-4			
28	Lecture-28	File structure, Hashing and indexing	
29	Lecture-29	Placing file records on disk, Hashing technique	
30	Lecture-30	Paralysing Disk,Assesing using RAID technology	
31	Lecture-31	Indexing strcutures of file types of single level order index	
32	Lecture-32	Dynamic multi level index using B-Tree, B+ Trees on multiple keys	
33	Lecture-33	Query processing optimisation and database tuning	
MODULE-5			
34	Lecture-34	Transaction processing	8
35	Lecture-35	Concurrency control technique	

Signature of Faculty Member **Signature of HOD**

PRINCIPAL