1.	Title of the course	Database Systems
2.	Course number	CS308M
3.	Structure of credits	3-0-2-4
4.	Offered to	UG
5.	New course/modification to	Modification To CS3206/8
6.	To be offered by	Department of Computer Science and Engineering
7.	To take effect from	July 2022
8.	Prerequisite	Nil
9.	**Course Objective(s):** To impart theoretical and practical concepts in database systems including data representation, modeling, storage and retrieval mechanisms; To impart hands-on experience on usage of state of the art database frameworks, applications and their design aspects	
10.	**Course Content:** Data modeling methodologies including ER diagrams, relational models, relational algebra, tuple relational calculus, integrity constraints and views; Schema representation and normalization including functional dependencies and 1NF to 5NF; Hands on using SQL scripting over standard workbenches; External data storage mechanisms including indexing, hashing and B/B+ trees; Transaction processing and concurrency control algorithms; Introduction to and hands-on with distributed database systems including NOSQL systems; Basics of DBMS security such as SQL injection.	
11.	**Textbook(s):** 1. Ramez E and Shamkant B N,Fundamentals of Database Systems, 7th Edition, Pearson (2015). 2. Avi S, Henry F K and Sudarshan S, Database System Concepts, 6th Edition, McGraw Hill Education (2013).	
12.	**Reference(s):** 1. Edward C, Wampler D and Rutherglen J, *Programming Hive: Data Warehouse and Query Language for Hadoop*, 1st Edition, Shroff (2012). 2. White T, *Hadoop: The Definitive Guide*, 3rd Edition, White T (2012).	