DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
SYLLABUS FOR BE VI SEMESTER

INTRODUCTION TO DATABASES (Open Elective-VI)
(for other Departments)

Instruction: 2 Hrs /week	SEE Marks :70	Course Code : OE620CS
Credits : 2	CIE Marks: 30	Duration of SEE : 3 Hrs

Course Objectives	Course Outcomes
Students should be able to	At the end of the course, students will be able to
• Identify different issues involved in the design and implementation of a database system. • Understand transaction processing.	1. Identify the functional components of database management system. Create conceptual data model using Entity Relationship Diagram 2. Transform a conceptual data model into a relational model 3. Design database using normalization techniques 4. Apply indexing and hashing techniques for effective data retrieval

UNIT-I
Introduction: Database System Application, Purpose of Database Systems, View of Data, Database Languages, Relational Database, Database Architecture, Database Users and Administrators.
Database Design and E-R Model: Overview of the Design Process, the E-R Model, Constraints, E-R Diagrams.

UNIT-II
Relational Model: Structure of Relation Database, Relational Algebra Operations, Modification of the Database.
Structured Query Language: Introduction, Basic Structure of SQL Queries, Set Operations, Aggregate Functions, Null Values, Nested Sub queries, Views, Join Expressions.

UNIT-III
Relational Database Design: Features of Good Relational Designs, Atomic Domains and first Normal form, Decomposition Using Functional Dependencies, Functional Dependency Theory.

UNIT-IV
Indexing and Hashing: Basic Concepts, Ordered Indices, B+ Tree Index Files, B-Tree Files, Multiple – Key Access, Static Hashing, Dynamic Hashing.
Transaction Management: Transaction concept, Storage Structure, Transaction Atomicity and Durability, Transaction Isolation and Atomicity, Serializability, Recoverability.

Suggested books:
1. Abraham Silberschatz, Henry F Korth, Sudharshan S, Database System Concepts, 6th Edition(2011), McGraw-Hill International Edition.

Reference Books:
1. Date CJ, Kannan A, Swamynathan S, An Introduction to Database System , 8th Edition(2006) Pearson Education.
2. Raghu Ramakrishna, and Johannes Gehrke, Database Management Systems, 3rd Edition(2003), McGraw Hill.
3. RamezElmasri, Durvasul VLN Somyazulu, Shamkant B Navathe, Shyam K Gupta, Fundamentals of Database Systems, 4th Edition(2006), Pearson Education.
4. Peter rob, Carlos coronel, Database Systems, (2007), Thomoson.

Online resources:
1. http://nptel.ac.in/courses/106106093/