

**MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY
BHOPAL - 462003**

Name of Program	B.Tech	Semester III	Year II
Name of Course	Data Base Management Systems		
Course Code	CSE 212		
Core / Elective / Other	Core		

Prerequisite:

1. Programming Languages and Data Structures

Course Outcomes:

On successful completion of the course, students should be able to

1. Discuss the database concepts and database management system software
2. Model an application's data requirements using conceptual modeling tools like ER diagrams and design database schemas based on the conceptual model.
3. Practice the DBMS query languages and representation of queries using Relational algebra, calculus and SQL.
4. Design the database using bottom up approach
5. Describe the concurrent execution of transactions and their control and recovery

Description of Contents in brief:

1. Fundamentals of DBMS, different data models. ER modelling, Enhanced ER Model, Relational database systems, integrity constraints, ER to Relational Mapping.
2. Database Query Languages: Relational algebra and calculus, SQL, assertions, triggers.
3. Relational Database Design, functional dependency constraints, Normalization in relational approach.
4. Overview of query processing and cost estimation, Query Optimization, Transaction processing and concurrency control.
5. Data storage and indexing, B-Trees and B+ Trees, Overview of advanced databases.

List of Text Books:

1. Fundamentals of Database Systems Elmasri and Navathe
2. Database System Concepts Silberschatz, Korth and Sudershan .

List of Reference Books:

- An Introduction to Database Systems C. J. Date