December 22, 2019

CSGE201 Generic Elective: Database Management System

Sr. No.	Topic	Chapter	Reference	# of Lecture
1.	**Introduction:** Introduction to database, relational data model, DBMS architecture, data independence and data abstraction, DBA, database users, end users, front end tools.	1.1-1.6 2.1-2.3	1	10
2.	**Data Modeling:** Entity types, entity set, attribute and key, relationships, relation types, ER diagrams, database design using ER diagrams.	3.2-3.7, 3.9, 3.10	1	8
3.	**Relational Data Model:** Relational model concepts, relational constraints, primary and foreign key, candidate key, alternate, composite, super-key.	5.1-5.2.4	1	6
4.	**Data Redundancy, Normalization:** 1NF, 2NF, 3NF.	14.1-14.4	1	10
5.	**Structured Query Language:** Introduction to SQL, concepts of Data Definition Language (DDL) and Data Manipulation Language (DML), DDL queries like create a data base, drop a database, create table, drop table, alter table, DML queries like inserting data in a table, update in a table, delete data from a table, filter data. Create relationships between database tables, auto increment, check, Null values, aggregate functions - min, max, count, average, sum, nested sub-queries, group by, having, exists, case, order by. Join operations - inner, left join, right join, natural join and Cartesian product. Overview of forms and reports.	6.1-6.4 7.1, 7.4	1	14

References

1. Elmasri, R., & Navathe, S. (2017). *Fundamentals of Database Systems.* 7th edition. Pearson Education.

Additional References

2. Bayross, I. (2010) *SQL, PL/SQL the Programming Language of Oracle*. 4th edition. BPB Publications.
3. Silberschatz, A., Korth, H. F., & Sudarshan, S. (2011), *Database System Concepts*. 6th edition. Tata McGraw-Hill Education.