

Syllabus

Add-on Course on Fundamentals of DBMS

Course Code: CSAD02

Course Objectives:

- To provide students with a solid foundation in the fundamentals of database management systems (DBMS).
- To enable students to design, develop, and manage databases.
- To prepare students for a career in database administration or development.

Prerequisites:

- B.Sc. Computer Science or equivalent
- Programming experience in a high-level language such as Java, C++, or Python

Course Outline:

- Introduction to DBMS
- Database design
- Relational database model
- SQL
- Database administration
- Database security
- Database performance tuning

Grading:

- Midterm exam: 30%
- Final exam: 40%
- Term project: 30%

Course Schedule:

Week 1: Introduction to DBMS Week 2: Database design Week 3: Relational database model Week 4: SQL Week 5: Database administration Week 6: Database security Week 7: Database performance tuning Week 8: Midterm exam Week 9: Database design (cont.) Week 10: Relational database model (cont.) Week 11: SQL (cont.) Week 12: Database administration (cont.) Week 13: Database security (cont.) Week 14: Database performance tuning (cont.) Week 15: Final exam

Course Outcomes:

Upon successful completion of this course, students will be able to:

- Define the basic concepts of database management systems.

- Design a database to meet specific business requirements.
- Create and maintain a relational database using SQL.
- Administer a database, including creating users and groups, managing permissions, and backing up and restoring data.
- Secure a database against unauthorized access.
- Tune a database for optimal performance.

Reference Books:

- Database Systems: The Complete Book, 5th Edition by C. J. Date, Hugh Darwen, and David McGoveran
- Database Management Systems by Raghurama Krishnan and Johannes Gehrke
- Fundamentals of Database Systems by Ramez Elmasri and Shamkant Navathe