

Database Management Systems (CSN-351)

Course Plan and Overview

BTech 3rd Year (CS) + Minor

Instructor: **Ranita Biswas**

Department of Computer Science and Engineering
Indian Institute of Technology Roorkee
Roorkee, Uttarakhand - 247 667, India



Topics to be Covered

- Overview
- ER Diagram
- Relational Model
- Basic SQL
- Relational Database Design
- Transaction Management
- Concurrency Control
- Recovery
- File Structures
- Indexing, Hashing, B^+ Tree
- Relational Algebra and Relational Calculus
- Intermediate and Advanced SQL
- Query Optimization
- XML, JSON, NoSQL, MongoDB, Redis

Books

- Silberschatz, A., Korth, H. F., and Sudershan, S., Database System Concepts, 6th Ed., McGraw-Hill.
- Elmasri, R. and Navathe, S.B., Fundamentals of Database Systems, 6th Ed., Addison Wesley.
- Ramakrishnan, R. and Gehrke, J., Database Management Systems, 3rd Ed., McGraw-Hill.
- Garcia-Molina, H., Ullman, J. D., and Widom, J., Database Systems: The Complete Book, Prentice Hall.

Marks Distribution

- CWS (25) + MTE (25) + ETE (50)
- CWS Breakup: (may change a little)
 - Tutorials and Weekly Assignments: 11
 - Class Tests: 6 ($3 + 3$, best 2 of 3)
 - Project: 8
- MTE: 50 marks exam
- ETE: 100 marks exam

Grading

- Grade boundaries will be decided by GFS automatically, and no change request will be entertained.
- Current state of marks and attendance will be available via shared google sheet.
- Bonus mark (if any, awarded during random quizzes or open-source contribution) will only be used in case you fall on the grade boundary.

Contact Details

- `biswas.ranita@gmail.com` (most preferred),
`ranitafcs@iitr.ac.in`
- <https://www.facebook.com/ranitabiswas87>
- Mobile: 9933992472 (call me only in case of an emergency¹)

¹It can be any DBMS or non-DBMS emergency.