

CS F211 / MAC F242 Data Structures and Algorithms

HANDOUT (Jan–May 2026)

January 15, 2026

1 When and Where

1.1 Lectures

- Time: Mon Wed Fri 11:00 AM – 11:50 AM
- Place: LT1

1.2 Labs

- Time: Fri 1:00 PM – 3:00 PM
- Place: CC 219 + D153

1.3 Exams

- Midsem: 10 March Tuesday, 11:30 AM – 1:00 PM
- Endsem: 06 May Wednesday, 2:00 PM – 5:00 PM

1.4 Google Calendar

[Click here](#) to add the course calendar or scan the QR code below.



2 People

- Students
 - CS Single degree 2nd year 2nd semester
 - CS + X, Dual degree 3rd year 2nd semester
 - Math and Computing, 2nd year 2nd semester
- Staff
 - Aniket Basu Roy (Instructor-in-Charge)
 - Girija Deepak Limaye (Instructor)
 - Siddharth Gupta (Lab Instructor)
 - Teaching assistants (TBA)

3 Zulip Chat

Click here to join the course Zulip chat or scan the QR code below.



4 Course Webpage

Click here to visit the course webpage or scan the QR code below.



5 Course Objective

- Learn commonly used data structures in Computer Science.
- Learn various algorithmic approaches to problem solving.
- Learn to analyze algorithms and devise efficient algorithms for problem solving.

6 A Tentative List of Topics

1. Foundations

- What and Why
- Growth of Functions. Asymptotic Notations
- Recurrences
- Probabilistic Analysis and Randomized Algorithms

2. Sorting and Order Statistics

- Heapsort
- Quicksort
- Lower Bounds to Comparison based Sorting. Linear time Sorting
- Medians and Order Statistics

3. Data Structures

- Stacks, Queues, Deques, Linked Lists
 - Hash Tables
 - Binary Search Trees
 - Height-Balanced Trees
4. Graph Algorithms
- Representation of Graphs
 - Graph Traversals
 - Minimum Spanning Trees
 - Single-Source Shortest Paths
 - All-Pairs Shortest Paths
 - Maximum Flow

7 Evaluation Breakdown

Endsem	40%
Midsem	35%
Labs	25%

8 References

1. Cormen, T. H., Leiserson, C. E., Rivest, R. L., & Stein, C. (2022). **Introduction to algorithms** (4th ed.). MIT Press.
2. Dasgupta, S., Papadimitriou, C. H., & Vazirani, U. V. (2006). **Algorithms**. McGraw-Hill.
3. Kleinberg, J., & Tardos, E. (2006). **Algorithm design**. Pearson/Addison-Wesley.
4. Knuth, D. E. (1997). **The Art of Computer Programming**, Vol. 1: **Fundamental Algorithms** (3rd ed.). Addison-Wesley.

9 Good To Know

- Lab marks will be calculated based on best (N-3) of N lab marks. There will be no make-up for the lab.

- Plagiarism in lab or lab exam will result in zero marks for the component. You need to understand the meaning of plagiarism. There will be no distinction between minor and major plagiarism.
- Any form of malpractice (including plagiarism) will lead to NC grade and/or action by Institute Disciplinary Committee.
- A student should obtain 30% of the average of marks above the 95th percentile in the class, or 40% of the median marks of the class, whichever is lower to clear the course.

9.1 Makeup Policy

- No makeups will be given for the lab components.
- No makeup will be given based on OPD prescriptions.
- Midsem and Endsem makeup will be given only for exceptional cases having extremely genuine reasons for not appearing for the regular exam.
- The makeup exam will be more difficult compared to the regular exam.

10 Office Hours

Can be fixed by email or through Zulip.