EE5048 The Design and Analysis of Algorithms

Staff and Contact Information:

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Office Hour: Monday 12:00-13:00
TA: TBA

Class website:

Announcement/homework: Ceiba
Course videos: COOL

Textbook: Introduction to Algorithms, by Cormen, Leiserson, Rivest, and Stein

Grading Information:

There will be several homeworks (40% total) and two exams (30% each). Homeworks will be announced both in class and on the class website. You will have 1-2 weeks for each homework assignment. All homeworks are due on Monday 10:20am. Late homeworks will not be graded. The exams will be scheduled on 11/09(Mon) and 01/11(Mon) from 9:10am to 12:10am. No individual extensions of homeworks or rescheduling of exams will be arranged except for cases of illness or emergency.

Collaboration Policy:

In the homeworks, you are encouraged to discuss the problems with other students, but you must obtain and write the final solution by yourself. Lending and Borrowing homeworks is strictly prohibited and will result in an automatic failure of the class.

Please specify all of your collaborators (name and student id) for each question. If you solve some problems by yourself, please also specify "no collaborators". Homeworks without these specifications will not be graded.

Syllabus

- Mathematic Tools
  - Asymptotic Notations
  - Recurrence Relations
- Algorithm Design Techniques
  - Divide and Conquer
  - Sorting and Order Statistics
  - Greedy Algorithms
  - Dynamic Programming
- Data Structures
  - Heaps
  - Disjoint Sets
  - Hash Tables (if time permits)
- Graph Algorithms
  - Search
  - Shortest Path
  - Minimum Spanning Tree
  - Max Flow / Min Cut
- Advanced Topics
  - NP-Completeness
  - Approximate Algorithms
  - Randomized Algorithms (if time permits)
  - Other Topics (if time permits)