CS3510 Algorithms

CS3510 Algorithms Summer 2026 12:30-2:40PM MW Klaus 2443

People

- Lecturer: Abrahim Ladha
- TAs:
  - Yolanda Li
  - Sankar Gopalkrishna
- For office hour times, see the schedule on the pinned Edstem post. They are subject to change.
- Office hours are located in an open area just outside CCB203, the third floor of the CoC building, across the Klaus bridge.
- They will also be held remotely
- My Office is in CCB 207B, third floor. I have an open door policy. If my door is open, I am available to ask questions.
- I will also have remote office hours 12-2 every Tuesday on zoom.

Course Information

Welcome to algorithms! We have four main sections.

- Divide and Conquer
- Graph Algorithms
- Dynamic Programming
- NP-completeness

There are also minor units on maxflow, linear programming, greedy algorithms, and randomized and approximation algorithms. It is expected that you read the class notes in parallel with class attendance.

Evaluation

- Four exams, including the final, each worth 10%
- Weekly problem sets, each worth 6%

This is subject to change as I realize what takes more or less time.

No.	Date	Lecture
L01A	May 18	Introduction, Big O
L01B	May 18	Master Theorem, MergeSort
L02A	May 20	Arithmetic
L02B	May 20	Lack of Lower Bounds
L03A	May 27	QuickSort
L03B	May 27	Median of Medians
L04A	Jun 01	Fast Fourier Transform
L04B	Jun 01	Closest Pair of Points
	Jun 01	Exam 1
L05A	Jun 03	DFS
L05B	Jun 03	Applications of DFS
L06A	Jun 08	BFS, Dijkstra's
L06B	Jun 08	Heaps
L07A	Jun 10	Kruskal's, Prims, Union-Find
L07B	Jun 10	The Cut Property
L08A	Jun 15	Bellman-Ford, Floyd-Warshall
L08B	Jun 15	Kirchoff's Matrix Tree Theorem
	Jun 15	Exam 2
L09A	Jun 17	Dynamic Programming
L09B	Jun 17	Longest Sequences
L10A	Jun 22	Chain Matrix Multiplication
L10B	Jun 22	Knapsack
L11A	Jun 24	Tree DP
L11B	Jun 24	Aliens Trick

No.	Date	Lecture
	Jun 24	Exam 3
L12A	Jun 29	NP-completeness
L12B	Jun 29	Satisfiability
L13A	Jul 01	Hard Graph Problems
L13B	Jul 01	Hard Constraint Problems
L14A	Jul 06	3 Coloring
L14B	Jul 06	Zero Knowledge Proofs
L15A	Jul 08	Hard Puzzles and Games
L15B	Jul 08	Hamiltonian Path
	Jul 08	Exam 4
L16A	Jul 13	Max Flow Min Cut Theorem
L16B	Jul 13	MFMC Applications
L17A	Jul 15	Linear Programming
L17B	Jul 15	Duality
L18A	Jul 20	Randomized Algorithms
L18B	Jul 20	Randomized Algorithms
L19A	Jul 22	Approximation Algorithms
L19B	Jul 22	FPTAS for Knapsack
L20A	Jul 27	Open Topic
L20B	Jul 27	Open Topic

Other Resources

Lecture Notes

Lecture Videos

Erickson's Free Book

Integrity Statement

Submission of any work not your own will result on a zero on the assignment to a

report to OSI, which may incur further sanctions.

Statement of Intent for Classroom Inclusivity

As a member of the Georgia Tech community, I am committed to creating a learning environment in which all of my students feel safe and included. Because we are individuals with varying needs, I am reliant on your feedback to achieve this goal. To that end, I invite you to enter into dialogue with me about the things I can stop, start, and continue doing to make my classroom an environment in which every student feels valued and can engage actively in our learning community.