

CS223 SPRING 2023

Schedule

(colors indicate weeks)

b

Day	Date	Topic & Lecture	Other Handouts/Readings	Homework
Tu	1/24	Class Introduction : Read Chapters 1-4 on your own when possible	syllabus , survey , problems (Note class problems will generally not be made available until after class.)	
Th	1/26	Balls and bins (Chapter 5 of MU)	In-class problem (secretary problem)	HW1 , Skeleton Latex file for HW solutions
Tu	1/31	Random Graphs (Read Chapter 5 of MU)	In-class problem Read How to Read a Research Paper (discussion Thursday)	
Th	2/2	Coupon Collector's (Read Chapter 5 of MU)	Read the Odd Sketch paper (discussion Tues) ,	HW2
Tu	2/7	Odd Sketches, End Chapter 5 of MU		
Th	2/9	Start Probabilistic Method (Chapter 6 of MU)		Encoding Arguments Paper Read in background, good if you read at least the beginning (up to section 4.2 or 4.3) for Tuesday.
Tu	2/14	Continue Probabilistic Method (Chapter 6 of MU)	In class problem	Moser's algorithm and LLL writeup Read in background
Th	2/16	Algorithmic Lovasz Local Lemma (Chapter 6 of MU)	Project Description pdf ; New assignment: Make a Project Proposal	HW3 due March 2
Tu	2/21	Markov Chains (Read Chapter 7 of MU)	Schoning's 3-SAT paper (For your enjoyment, not required)	
Th	2/23	Continue Markov Chains (Read Chapter 7 of MU)		
Tu	2/28	Finish Markov chains Continuous Random Variables (Read Chapter 8 of MU)		
Th	3/2	Percolation		Read for next Tuesday the paper on COBRA walks at least through section 3. (Read more if you like; you can ignore the expander stuff.)
Tu	3/7	Cobra Walks/Continuous Random Variables		
Th	3/9	Finish Continuous Random Variables; Entropy (Read Chapter 10 of MU); Start with compression (other stuff will be later)	In class problem	
Tu	3/14	Spring Break		
Th	3/16	Spring Break		
Tu	3/21	Compression (Ch 10)		Read for next Tuesday the paper on Compressing Deep

				Neural Networks . For this paper you will write a short summary.
Th	3/23	Codes (Ch 10)		HW4 , Due April 6
Tu	3/28	Ch 13 Martingales, Discuss Weightless paper		
Th	3/30	Ch 13, Continue Martingales		
Tu	4/4	Ch 15, Pairwise Independence		
Th	4/6	Continue Pairwise Independence; Start Chapter 12, Convergence/Coupling	For next week read Why Simple Hash Functions Work	Assignment 5 , Due April 20
Tu	4/11	Ch 11 Coupling, Discuss Hash Functions paper		
Th	4/13	Ch 16, Power Laws	For next week read Power law paper	