

Week	Date	Day	Topic		Homework
1	1/18/22	Tue	Organizational Items Four Representative Problems	KT 1.2	
	1/20/22	Thu	Problem Reductions, Mathematical Induction	KT 2.1, 2.2	PS1 Out
2	1/25/22	Tue	Algorithm Efficiency	KT 2.2, 2.4	PA1 out
	1/27/22	Thu	Asymptotic Order of Growth Algorithms in Common Efficiency Classes	KT 2.4, 2.5	
3	2/1/22	Tue	Arrays, Linked Lists, Priority Queues	KT 2.5, 3.1 DPV 3.1	
	2/3/22	Thu	Graphs, Breadth First Search	KT 3.2, 3.3	PS1 Due/PS2 Out
4	2/8/22	Tue	Depth First Search; Entry and Exit Times; Parentheses Theorem	DPV 3.2, 3.3 KT 3.2, 3.3	
	2/10/22	Thu	Post Ordering, Edge Types Cycles, Topological Sort	DPV 3.2, 3.3 KT 3.6	
5	2/15/22	Tue	Connectivity & Strong Connectivity , Computing Strongly Connected Components	DPV 3.4 KT 3.5, KT 3.6	PA1 Due/PA2 Out
	2/17/22	Thu	Greedy Algorithms: Scheduling	KT 4.1	
	2/21/22	Mon	non-lecture day		PS2 Due/PS3 Out
6	2/22/22	Tue	Greedy Algorithms: Shortest paths	KT 4.4	
	2/24/22	Thu	Greedy Algorithms: Minimum spanning trees	KT 4.5	
7	3/1/22	Tue	Kruskal's algorithm implementation Clustering	KT 4.6, 4.7	
	3/3/22	Thu	Divide-and-Conquer: Merge Sort Solving Recurrence Relations	KT 5.1, 5.2	
	3/7/22	Mon	non-lecture day		PS3 Due/PS4 Out
8	3/8/22	Tue	Midterm Exam		
	3/10/22	Thu	Master Method Counting Inversions	KT 5.3	PA2 Due/PA3 Out
9	3/15/22	Tue	SPRING BREAK		
	3/17/22	Thu			
10	3/22/22	Tue	Finding closest pair of points Fast Integer & Matrix Multiplication	KT 5.4, 5.5	
	3/24/22	Thu	Dynamic programming Weighted interval scheduling	KT 6.1, 6.2	
	3/20/22	Mon	non-lecture day		PS4 Due/PS5 Out
11	3/29/22	Tue	Shortest paths with negative weights	KT 6.8	
	3/31/22	Thu	Knapsack Problem	KT 6.4, 6.7	PA3 Due/PA4 Out
12	4/5/22	Tue	Network Flows Min-Cut, Max-Flow	KT 7.1, 7.2	
	4/7/22	Thu	Residual Graphs, Ford Fulkerson Algorithm	KT 7.1, 7.2	
	4/11/22	Mon	non-lecture day		PS5 Due/PS6 Out
13	4/12/22	Tue	Ford Fulkerson Algorithm, Bipartite matching	KT 7.5, 7.10	
	4/14/22	Thu	Polynomial Reductions Polynomial Certifiers	KT 8.1, 8.2, 8.3	
14	4/19/22	Tue	P, NP, and NP-completeness	KT 8.3, 8.4	
	4/21/22	Thu	NP-completeness reductions	KT 8.4	
	4/26/22	Tue	Linear Programming	DPV Chap 7	PA4 Due
15	4/28/22	Thu	Review		PS6 Due
		TBA	Final Exam		