

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	Lecture Notes Husky CT	PS1 Out
2	1/25/22	Tue	Algorithm Efficiency	KT 2.1, 2.2	PA1 out
	1/27/22	Thu	Big O, Omega, Theta, Asymptotic Order of Growth	KT 2.2	
3	2/1/22	Tue	Algorithms in Common Efficiency Classes	KT 2.4	
	2/3/22	Thu	Arrays, Linked Lists, Priority Queues	KT 2.3, 2.5	
	2/7/22	Mon	non-lecture day		PS1 Due
4	2/8/22	Tue	Graphs	KT 3.1, 3.2	PS2 Out
	2/10/22	Thu	Breadth First Search, Layers & Queue Implementations	KT 3.2	
5	2/15/22	Tue	Depth First Search, State Diagram, Entry & Exit times	DPV 3.2 KT 3.2, 3.3	PA1 Due/PA2 Out
	2/17/22	Thu	Parentheses Theorem, Edge Types, Topological Sort	DPV 3.3 KT 3.5, 3.6	
6	2/22/22	Tue	Connectivity & Strong Connectivity	DPV 3.4	
	2/24/22	Thu	Greedy Algorithms: Interval Scheduling, Shortest paths	KT 4.1, KT 4.4	
	2/26/22	Sat	non-lecture day		PS2 Due/PS3 Out
7	3/1/22	Tue	Dijkstra Algorithm Correctness, Minimum spanning trees	KT 4.5	
	3/3/22	Thu	Cycle Property, Implementation Of Dijkstra Algorithm Using A Priority Queue	KT 4.6, 4.7	
8	3/8/22	Tue	Midterm Exam		
	3/10/22	Thu	Implementation of Prim's and Kruskal's Algorithms, The Union Find Structure	KT 4.6, 4.7	
	3/11/22	Fri	non-lecture day		PS3 Due/PS4 Out
	3/12/22	Sat	non-lecture day		PA2 Due/PA3 Out
1	3/15/22	Tue	SPRING BREAK		
	3/17/22	Thu			
2	3/22/22	Tue	Divide & Conquer, Merge Sort, Counting Inversions	KT 5.1, 5.2, 5.3	
	3/24/22	Thu	Finding closest pair of points Fast Integer & Matrix Multiplication	KT 5.4, 5.5	
3	3/29/22	Tue	Dynamic programming Weighted interval scheduling	KT 6.1, 6.2	
	3/31/22	Thu	Shortest paths with negative weights	KT 6.8	PS4 Due/PS5 Out
	4/3/22	Sun	non-lecture day		PA3 Due/PA4 Out
4	4/5/22	Tue	Knapsack Problem	KT 6.4, 6.7	
	4/7/22	Thu	Network Flows Min-Cut, Max-Flow	KT 7.1, 7.2	
5	4/12/22	Tue	Residual Graphs, Ford Fulkerson Algorithm	KT 7.1, 7.2	
	4/14/22	Thu	Ford Fulkerson Algorithm, Bipartite matching	KT 7.5, 7.10	PS5 Due/PS6 Out
6	4/19/22	Tue	Polynomial Reductions Polynomial Certifiers	KT 8.1, 8.2, 8.3	
	4/21/22	Thu	P, NP, and NP-completeness	KT 8.3, 8.4	
	4/26/22	Tue	NP-completeness reductions	KT 8.4	PA4 Due
15	4/28/22	Thu	Review		PS6 Due
	5/5/22	Thu	Final Exam	DWTN 216	10:30AM-12:30PM