Lecture Schedule

TOPIC	LECTURE	READING	
		From Text Book (CLRS)	*From Lecture Notes*
Preliminaries, Divide and Conquer	Preliminaries, Mergesort, Master Theorem	1, 2, 3, 4	1, 2.1
	Strassen's Matrix Multiplication Algorithm, Closest Pairs	28.1, 28.2, 33.1, 33.2, 33.4	2.2-2.4
	The Fast Fourier Transform	30	2.5
Greedy Algorithms and Matroids	Minimum Spanning Trees, Kruskal's Algorithm, Union-Find Problem	23, 21, 16.1, 16.2	3.1, 3.5
	Subset Systems, Matroids	16.1, 16.2, 16.4	3.2, 3.3
	Bipartite Matchings		3.4
Dynamic Programming, Shortest Paths, and Network Flow	The Knapsack Problem, Dynamic Programming, Floyd-Warshall	15, 25.2	4.1-4.3
	The Dijkstra and Seidel Algorithms	24	4.4, 4.5
	More Seidel, Network Flow	26.1,	4.6, 5.1
	Network Flow, Ford-Fulkerson Algorithm	26.2	5.2-5.5
Randomized Algorithms	Quicksort, The Min-Cut Problem	5, 7.3	6.1,6.2
	Karger's Algorithm, Polynomial		6.3

	Identities, Matchings		
	Primality Testing	31	6.4
	Median Finding	9	6.5
NP-Completeness and Approximation Algorithms	NP-Completeness Fundamentals	34	7.1
	NP-Completeness Examples	34	7.2
	Subset Sum, Max-Cut	34	7.3
	P versus NP, Approximations, Independent Set Problem	35	7.4, 8.1, 8.2
	More Approximations, Metric TSP Problem	34, 35	8.3,8.4
	Set Cover Problem, Poly-Time Approximation Schemes		8.5,8.6
	NP-Hardness of Approximation Problems		8.7