LEC #	TOPICS	KEY DATES
Unit 1: Introduction		
1	Algorithmic thinking, peak finding	Problem set 1 out
2	Models of computation, Python cost model, document distance	
Unit 2: Sorting and Trees		
3	Insertion sort, merge sort	Problem set 1 due Problem set 2 out
4	Heaps and heap sort	
5	Binary search trees, BST sort	
6	AVL trees, AVL sort	Problem set 2 due
7	Counting sort, radix sort, lower bounds for sorting and searching	Problem set 3 out
Unit 3: Hashing		
8	Hashing with chaining	
9	Table doubling, Karp-Rabin	Problem set 3 due Problem set 4 out
10	Open addressing, cryptographic hashing	Problem set 4 due
	Quiz 1	
Unit 4: Numerics		
11	Integer arithmetic, Karatsuba multiplication	Problem set 5 out
12	Square roots, Newton's method	
Unit 5: Graphs		
13	Breadth-first search (BFS)	
14	Depth-first search (DFS), topological sorting	Problem set 5 due Problem set 6 out

Unit 6: Shortest Paths		
15	Single-source shortest paths problem	
16	Dijkstra	
17	Bellman-Ford	
18	Speeding up Dijkstra	Problem set 6 due
	Quiz 2	
Unit 7: Dynamic Programming		
19	Memoization, subproblems, guessing, bottom-up; Fibonacci, shortest paths	Problem set 7 out
20	Parent pointers; text justification, perfect-information blackjack	
21	String subproblems, pseudopolynomial time; parenthesization, edit distance, knapsack	
22	Two kinds of guessing; piano/guitar fingering, Tetris training, Super Mario Bros.	Problem set 7 due
Unit 8: Advanced Topics		
23	Computational complexity	
24	Algorithms research topics	