dont know	know a bit	OK	good!	master	COMS 311 TOPICS	
1	2	3	4	5	**BIG-OH**	WEEK1
					Basics	x
					Definitions of big-oh, omega, theta c>0, n>=0 (7 things)	x
					big-omega	x
					big-theta	x
					Intuition/understanding (graph)	x
					tighter and weaker bounds	x
					how to prove O/Omega/Theta techniques	x
					for polynomials choose c >sum of coeff or coeff for omega	x
					for same type compare exponents	x
					take log	x
					Application to Algorithms	x
					ram model (vs actual)	x
					instances and runtime graphs	x
					WCET, BCET, ACET	x
					Big-oh of code segments	x
					problem complexity and algorithmic complexity	x
					code examples of different Os	x
					Dominance Relationships	x
					logs beat constants	x
					poly beats all logs	x
					exp beats all poly	x
					fact beats all exp	x
					n^n beats fact	x
1	2	3	4	5	**DATA STRUCTURES**	
					Basic	x
					arrays (sorted/unsorted)	x
					linked lists (singly/doubly; sorted/unsorted)	x
					comparison of arrays and linked lists	x
					Basic Abstract Data Types	x
					Stack, Queue (implementations using array/linkedlists)	x
					comparison of operations of diff impl of stack/queue	x
					reasons for differences	x
1	2	3	4	5	**P-NP**	
					Intro Concepts	x
					the diagram and four classes of problems	x
					informal (solvable, probab intract, provably intract, prov unsolvable)	x
					examples of problems in four classes	x
					Halting Problem	x
					Hamiltonian Cycle Enumeration problem	x
					Hamiltonian Cycle Search problem	x
					Independent Set problem	x
					Search/Sort problems	x
					Classes of problems	
					Undecidable (prove Halting problem is undecidable)	x
					P	x
					NP	x
					prove P is a subset of NP	
					NP-Complete (probably intractable class)	x
					why if a NP-C problem is in P, then P=NP	
					provably intractable classes	x
					NP-Hard problems	
1	2	3	4	5	**PROOF TECHNIQUES**	
					Why is proving important?	x
					Job selection problem	x
					solutions to JS problem	x
					why is proving so important?	x
					CALCULUS	
					propositional logic rules	PreReq
					predicate logic rules	PreReq
					form of deduction proofs	PreReq
					DIFFERENT TECHNIQUES	
					contradiction (and correct form)	PreReq
					induction (form)	PreReq
					direct proof (see form of deduction proofs)	PreReq
					trivial/vacuous	PreReq
					contrapositive	PreReq
					EXAMPLES IN CLASS	
					contradiction (and correct form)	PreReq
					induction (form)	PreReq
					direct proof (see form of deduction proofs)	PreReq
					trivial/vacuous	PreReq
					contrapositive	PreReq
1	2	3	4	5	**ALGORITHMIC TECHNIQUES**	
					BRUTE FORCE TECHNIQUES	
					search space for different problems	x
					recursion tree for brute force approach	x
					back track algo from text book	x
					iterative way to generate all subsets	
					recursive way to generate all subsets	x
					recursive way to generate all perms	x
					recursive way to gen size k subsets	x