

Week		Content	Reading	HW Assigned	PA Assigned
week1	Tuesday, September 5, 2023	Course policies, introduction to Th. Of Comp. <i>First look at Finite State Automata (FSA)</i>	Chapter 0		
	Thursday, September 7, 2023	Terminology and formal definition of FSAs state diagrams, regular languages (RL) <i>operations on RLs</i>	Chapter 1.1	PS1 Out Due Fri, 09/22, 11:59pm	
week 2	Tuesday, September 12, 2023	Closure of RLs under operations of union and intersection, the product machine	Chapter 1.1		
	Thursday, September 14, 2023	Non-deterministic Finite Automata, closure under concatenation & Kleene star	Chapter 1.2		PA1 Out Thu, 10/12, 11:59pm
week 3	Tuesday, September 19, 2023	Other regular operations Equivalence of NFAs and DFAs, Subset Construction	Chapter 1.2		
	Thursday, September 21, 2023	NFAs whose DFAs have exponential size, Regular Expressions, Conversion from REs to NFAs/DFAs	Chapter 1.3	PS2 Out Due Fri, 10/06, 11:59pm	
week 4	Tuesday, September 26, 2023	RE to DFA conversion Example GNFAs and conversion from DFAs $\square$ REs	Chapter 1.3		
	Thursday, September 28, 2023	Distinguishable & equivalent states in a DFA, Distinguishability Lemma, the Quotient automaton	Hopcroft, et al. 4.4		
week 5	Tuesday, October 3, 2023	State minimization algorithm for DFAs, the Pumping Lemma for regular languages	Hopcroft, et al. 4.4.3 Sipser 1.4		
	Thursday, October 5, 2023	Examples of non-regular languages, using the the Pumping Lemma to prove non-regularity	Chapter 1.4	PS3 Out Due Thu, 10/19, 11:59pm	
week 6	Tuesday, October 10, 2023	Context Free Grammars, parse trees	Chapter 2.1		
	Thursday, October 12, 2023	CFG ambiguity, converting DFAs to CFGs, Chomsky normal form	Chapter 2.1		PA2 Out Due Tue, 11/14, 11:59pm
week 7	Tuesday, October 17, 2023	CFL Closure Properties Pushdown Automata	Chapter 2.2		
	Thursday, October 19, 2023	Review		PS4 Out Due Thu, 11/02, 11:59pm	
week 8	Tuesday, October 24, 2023	<b>MIDTERM EXAM</b>			
	Thursday, October 26, 2023	Pushdown Automata & CFL The Pumping Lemma for CFLs	Chapter 2.2, 2.3		
week 9	Tuesday, October 31, 2023	Examples of non-CFL languages	Chapter 2.3		
	Thursday, November 2, 2023	Turing Machines	Chapter 3.1	PS5 Out Due Thu, 11/16, 11:59pm	
week 10	Tuesday, November 7, 2023	Equivalence of Multi-tape, Nondeterministic and Single-Tape Machines	Chapter 3.2		
	Thursday, November 9, 2023	Decidable Languages, Enumerators	Chapter 4.1		
week 11	Tuesday, November 14, 2023	Undecidable & Unrecognizable Languages	Chapter 4.2		PA3 Out Due Thu, 12/16, 11:59pm
	Thursday, November 16, 2023	Reductions	Chapter 5.1, 5.3	PS6 Out Due Thu, 11/30, 11:59pm	
week 12	Tuesday, November 21, 2023	The Recursion Theorem	Chapter 6.1		
	Thursday, November 23, 2023	Thanksgiving!			
week 13	Tuesday, November 28, 2023	Polynomial Complexity/class P	Chapter 7.1, 7.2		
	Thursday, November 30, 2023	Class NP	Chapter 7.3	PS7 Out Due Thu, 12/14, 11:59pm	
week 14	Tuesday, December 5, 2023	Examples of NP Problems Polynomial Reductions	Chapter 7.3, 7.4		
	Thursday, December 7, 2023	Cook's Theorem NP-Completeness	Chapter 7.4, 7.5		
week 15	Tuesday, December 12, 2023	Polynomial Verifiers Examples of NP-complete Problems	Chapter 7.5		
	Thursday, December 14, 2023	Review			
	<b>TBA</b>	<b>FINAL EXAM</b>			