

Week		Content	Reading	HW Assigned	PA Assigned
week 1	Tuesday, September 2, 2025	Course policies, introduction to Th. Of Comp. <i>First look at Finite State Automata (FSA)</i>	Chapter 0		
	Thursday, September 4, 2025	Terminology and formal definition of FSAs state diagrams, regular languages (RL) <i>operations on RLs</i>	Chapter 1.1	PS1 Out Due Thu, 09/18, 11:59pm	
week 2	Tuesday, September 9, 2025	Closure of RLs under operations of union and intersection, the product machine	Chapter 1.1		PA1 Out Wed, 10/08, 11:59pm
	Thursday, September 11, 2025	Non-deterministic Finite Automata, closure under concatenation & Kleene star	Chapter 1.2		
week 3	Tuesday, September 16, 2025	Other regular operations Equivalence of NFAs and DFAs, Subset Construction	Chapter 1.2		
	Thursday, September 18, 2025	NFAs whose DFAs have exponential size, Regular Expressions	Hopcroft, et al. 2.3.6 Chapter 1.3	PS2 Out Due Thu, 10/02, 11:59pm	
week 4	Tuesday, September 23, 2025	Conversion from REs to NFAs/DFAs GNFAs	Chapter 1.3		
	Thursday, September 25, 2025	Conversion from DFAs $\Rightarrow$ REs The State Elimination Algorithm for GNFAs	Chapter 1.3		
week 5	Tuesday, September 30, 2025	Distinguishable & equivalent states in a DFA, Distinguishability Lemma, the Quotient automaton	Hopcroft, et al. 4.4		
	Thursday, October 2, 2025	State minimization algorithm for DFAs, the Pumping Lemma for regular languages	Hopcroft, et al. 4.4.3 Sipser 1.4	PS3 Out Due Thu, 10/16, 11:59pm	
week 6	Tuesday, October 7, 2025	Examples of non-regular languages, using the the Pumping Lemma to prove non-regularity	Chapter 1.4		PA2 Out Due Thu, 11/06, 11:59pm
	Thursday, October 9, 2025	Context Free Grammars, Leftmost Derivations Parse Trees	Chapter 2.1		
week 7	Tuesday, October 14, 2025	Monday Schedule/No class			
	Thursday, October 16, 2025	Review		PS4 Out Due Thu, 10/30, 11:59pm	
week 8	Tuesday, October 21, 2025	MIDTERM EXAM			
	Thursday, October 23, 2025	CFG Ambiguity, CFL Closure Properties, Chomsky's normal form,	Chapter 2.1		
week 9	Tuesday, October 28, 2025	Nondeterministic Pushdown Automata & CFLs	Chapter 2.2		
	Thursday, October 30, 2025	Equivalence of NPDAs and CFGs	Chapter 2.2	PS5 Out Due Thu, 11/13, 11:59pm	
week 10	Tuesday, November 4, 2025	The Pumping Lemma for CFLs Examples of non-CFL languages	Chapter 2.3		PA3 Out Due Fri, 12/05, 11:59pm
	Thursday, November 6, 2025	Turing Machines	Chapter 3.1		
week 11	Tuesday, November 11, 2025	Multi-tape Machines & Their 1-Tape Simulators	Chapter 3.2		
	Thursday, November 13, 2025	Nondeterministic Turing Machines and Their Deterministic Simulators	Chapter 3.2	PS6 Out Due Thu, 11/27, 11:59pm	
week 12	Tuesday, November 18, 2025	The Universal Machine, Decidable Languages	Chapter 4.1		
	Thursday, November 20, 2025	Undecidable & Unrecognizable Languages	Chapter 4.2		
week 13	Tuesday, November 25, 2025	Additional Undecidable Problems Complexity of Turing Machines	Chapter 4.2, 7.1	PS7 Out Due Thu, 12/11, 11:59pm	
	Thursday, November 27, 2025	Thanksgiving!			
week 14	Tuesday, December 2, 2025	Classes P and NP	Chapter 7.2, 7.3		PA3 Due Due Fri, 12/05, 11:59pm
	Thursday, December 4, 2025	Polynomial Verifiers, Polynomial Reductions	Chapter 7.3, 7.4		
week 15	Tuesday, December 9, 2025	Cook's Theorem, NP-Completeness	Chapter 7.4		
	Thursday, December 11, 2025	Examples of NP-complete Problems	Chapter 7.4, 7.5	PS7 Due Due Thu, 12/11, 11:59pm	
	Saturday, December 13, 2025	FINAL EXAM	10:00	Burchard 111	

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