

# **CS322**

## ***Introduction to Automata Theory, Languages, and Computation***

***Third Edition***

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***Addison Wesley***

<b>Part One: Introduction</b>	<b>27 p</b>	<b>45 p</b>	<b>1~2 weeks</b>
1. Automata: The Method and the Madness .....		18 p	
1.A Review on Discrete Mathematics .....		27 p	
<b>Part Two: Regular Languages, Regular Expressions and Finite State Automata</b>	<b>18 p</b>	<b>138 p</b>	<b>4~5 weeks</b>
2. Finite Automata .....		34 p	
2.A Repeated Composition of Function .....		4 p	
2.B Examples of DFA's .....		6 p	
2.C Moore machine and Mealey machine .....		2 p	
2.D 한글모아쓰기 오토마타 (power point) .....		6 p	
3. Regular Expressions and Languages .....		16 p	
4. Properties of Regular Languages .....		27 p	
<b>Part Three: Context-Free Grammars, Pushdown Automata, and Context-Free Languages</b>	<b>48 p</b>	<b>53 p</b>	<b>4~5 weeks</b>
5. Context-Free Grammars and Languages .....		16 p	
5.A Examples of CFG's .....		10 p	
5.B Rewriting Systems, Regular Grammar, and Finite Automata .....		11 p	
5.C Leftmost and Rightmost Derivations .....		3 p	
6. Pushdown Automata .....		13 p	
6.A Left and Right Parsers .....		13 p	
7. Properties of Context-Free Languages .....		24 p	
7.A Loop Invariance and Terminating Conditions .....		7 p	
7.B CYK, revisited .....		4 p	
<b>Part Four: Computational Theory</b>	<b>45 p</b>	<b>55 p</b>	<b>3~4 weeks</b>
8. Introduction to Turing Machines .....		14 p	
9. Undecidability .....		21 p	
9.A Computability .....		45 p	
9.B Partial Recursive Functions .....		(34 p)	
10. Intractable Problem .....		20 p	
<b>Total</b>	<b>138 p</b>	<b>264 p</b>	<b>12~16 weeks</b>
		<b>402 p</b>	