

CS322

Introduction to Automata Theory, Languages, and Computation

Third Edition

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Addison Wesley

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| Part One: Introduction | 44 p | 1~2 weeks |
| 1. Automata: The Method and the Madness | 18 p | |
| 1.1 Review on Discrete Mathematics | 26 p | |
| Part Two: Regular Languages, Regular Expressions and Finite State Automata | 85 p | 3~4 weeks |
| 2. Finite Automata | 27 p | |
| 2.1 Repeated Composition of Function | 4 p | |
| 2.2 Examples of DFA's | 6 p | |
| 2.3 한글모아쓰기 오토마타 (power point) | 6 p | |
| 2.4 Moore machine and Mealey machine | 2 p | |
| 3. Regular Expressions and Languages | 16 p | |
| 4. Properties of Regular Languages | 24 p | |
| Part Three: Context-Free Languages, Context-Free Grammars and Pushdown Automata | 91 p | 4~5 weeks |
| 5. Context-Free Grammars and Languages | 16 p | |
| 5.1 Examples of CFG's and Definition of Regular Grammar | 15 p | |
| 6. Pushdown Automata | 12 p | |
| 6.1 Rewriting Systems | 13 p | |
| 7. Properties of Context-Free Languages | 24 p | |
| 7.1 Loop Invariance and Terminating Conditions | 7 p | |
| 7.2 CYK, revisited | 4 p | |
| Part Four: Computational Theory | 80 p | 3~4 weeks |
| 8. Introduction to Turing Machines | 14 p | |
| 9. Undecidability | 21 p | |
| 9.1 Computability | 45 p | |
| 9.2 Partial Recursive Functions | (34 p) | |
| Part Five: Complexity Theory | 20 p | 1 week |
| 10. Intractable Problems | 20 p | |
| Total | 337 p | 13 weeks |