FALL 2001: **COT 5420: Theory of Computation I**

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Course Homepage: `http://www.cs.fiu.edu/˜giri/teach/5420/5420f00.html`
Evaluation: Written homeworks, Exams, Class participation, Semester Project
Previous knowledge expected: From Sipser: Chapter 0

Syllabus

- Regular Languages and Finite Automata
- Regular Expressions and Non-deterministic Automata
- Pumping Lemma and Properties of Regular Languages
- Context-Free Languages and Grammars
- Push-down Automata
- Pumping Lemma for CFLs and Properties of CFLs
- Turing Machines and Variants
- Church-Turing Thesis
- Decidability and Undecidability
- Halting Problem
- Reducibility
- Complexity Hierarchy and Intractability
- Parallel Models of Computation
- Sampling of Advanced Topics

Text and References

Text: *Introduction to the Theory of Computation*, by M. Sipser [ISBN 0-534-94728-X]

Reference: *Introduction to Automata Theory, Languages, and Computation*, by Hopcroft, Motwani, and Ullman [ISBN 0-201-44124-1]

Reference: *Elements of the Theory of Computation*, by Lewis and Papadimitriou (Second Edition) [ISBN 0-13-262478-8]