

TEXT BOOK:

"Introduction to Languages and the Theory of Computation,"
by John C. Martin.

We will cover Chapter 1-11 of this book. The table of contents of these chapter constitutes a detailed syllabus for our class. The followup class CIS 132 (not offered this year) will cover Chapters 9-14. Chapter 1 and 2 are a summary of fundamentals and I encourage everybody to review this part asap. The TA will cover some of this material in section. We will go over the most important material in class.

EASIER BOOKS:

"Formal Languages, Automata, and Complexity" - Glenn Brookshear
"Introduction of the Theory of Computation" - Michael Sipser

MORE EXTENSIVE BOOK THAN OURS:

"The Language of Machines" - Robert W. Floyd and Richard Biegel
"Introduction to Automata Theory, Languages and Computation"
- Hopcroft, Motwani, and Ullman

We will introduce three machine models for generating Formal Languages:

- Finite State Machines
- Push-down Automata
- Turing Machines

We will study the classes of languages generated by these models and for each of the three cases give grammar families that generate the same classes of languages.

The main portion of the class will be spent on Finite State Machines and Push-down Automata and on determining the class of languages they generate.

The next class (Cmps 132) will focus on the most powerful machine model which are Turing machines with unbounded memory.

Turing's Thesis:"

"The computational power of Turing Machines is as great as the power of any possible computational device."