Syllabus for CS 622
Formal Languages
Fall 2002
Prof. Dan Simovici
Office Tel.: 287-6472, Home Tel: 731-3297 (between 9:00 a.m and 9:00 p.m)
Office hours: Tuesday and Thursday, 7:00-8:00

The theory of formal languages is a fundamental theoretical discipline in Computer Science. Its applications are mainly in the area of compiler design and programming languages but many other areas (operating systems, computer networks, etc.) also benefit from its results.

The main reference for this course is Theory of Formal Languages with Applications by Dan Simovici and Richard Tenney, published by World Scientific in 1999.

In general, every two lecture meetings will be followed by a seminar dedicated to solving problems and helping you with the problems from the homework.

We shall cover the following topics:

- Words, languages and free monoids.
- Finite state automata and regular languages.
- Rewriting Systems: semi-Thue systems, grammars, the Chomsky hierarchy.
- Context-Free Languages.
- Pushdown automata.
- Applications to coding theory.

Grading will be based on homeworks and two in-class tests (with open books).

No late homeworks will be accepted. Your homework must be entirely yours.

Presentation of homeworks and examinations is very important. What you know well you express well. You should write in a neat and legible way.