Linguistics 106: Introduction to Formal Linguistics
Spring 2000
Wednesdays, 5:30–8:10pm; Room 320, Williams Hall

Instructor: Alexis Dimitriadis
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Office Hours: By appointment
Email is the preferred (and most reliable) way to reach me.

Prerequisites: This class has no prerequisites. No prior knowledge of linguistics is expected.
Fulfills General Requirement IV: Formal Reasoning and Analysis.

Content: This course will introduce you to the abstract structures and processes that underlie the structure of language. Although no prior background in linguistics is needed, this course is not a general introduction to Linguistics.
In order to understand our subject matter, we will develop some facility with simple, but rigorous, mathematical reasoning. (Some mathematical background would be helpful, but no particular math knowledge will be assumed).
Class attendance and participation are very important.

Readings: Course readings (all required) will be distributed in class as photocopied course packs. (You will have to pay for them). If you prefer, you may buy one or both of the books from which the readings are drawn:
The Language Instinct, by Steven Pinker.
Readings from Sipser will be presented in class before you are required to read them. To get the most out of them they should be skimmed before class, then read carefully after being presented in class.

Grading: Homework assignments: 20%
Midterm Exam: 35%
Final Exam: 45%

Approximate Schedule (will definitely change!!)

Jan 19 Administrative matters. What is language? What is linguistics?
Jan 26 Introduction to the formal study of language. Set Theory I.
Reading: Pinker, chapter 2. (To be read before class); Partee, ch. 1.
Homework 1 assigned.
Feb 2  Set theory and mathematical preliminaries II.
     Reading: Sipser, chapter 0.
     **Homework 1 due**, homework 2 assigned.

Feb 9  How language works. Finite State Automata I.
     Reading: Pinker, ch. 4, to p. 103 only (read before class); Sipser, ch. 1.1.
     **Homework 2 due**, homework 3 assigned.

Feb 16 Finite State Automata II.
      Reading: Sipser, chapter 1.1 (continued).
     **Homework 3 due**, homework 4 assigned.

Feb 23 Nondeterministic automata.
     Reading: Sipser, chapter 1.2.
     **Homework 4 due**, homework 5 assigned.

March 1 The regular operations.
      Reading: Sipser, chapter 1.2 (continued).
     **Homework 5 due**, homework 6 assigned (due on the 22nd of March).

March 8 **MIDTERM EXAM**

March 15 (Spring Break: No Class)

March 22 Regular expressions. Equivalence with regular grammars.
      Reading: Sipser, chapter 1.3.
     **Homework 6 due**, homework 7 assigned.

March 29 Non-regular languages: The pumping lemma.
      Reading: Sipser, chapter 1.4.
     **Homework 7 due**, homework 8 assigned.

April 5  Pumping lemma II.
      Reading: Sipser, chapter 1.4 (continued).
     **Homework 8 due**, homework 9 assigned.

April 12 Context-free languages.
      Reading: Sipser, chapter 2.1.
     **Homework 9 due**, homework 10 assigned.

April 19 X-bar syntax
      Reading: Pinker, chapter 4. (To be read before class).
     **Homework 10 due.**

April 26 X-bar syntax II.
      Reading: Pinker, chapter 4 (continued).

May 3  OPTIONAL REVIEW SESSION (READING WEEK).

May 10 **FINAL EXAM**