

LING 106: Introduction to Formal Linguistics

Syllabus, Fall 2007

Instructor: Lance Nathan

1. COURSE DESCRIPTION

The goal of this course is to define certain formal properties that underlie the architecture of language. To this end, mathematical tools are provided that help us understand and classify the complex structures and rules that constitute language and grammar. These tools include set theory, propositional logic, information theory, formal language theory, automata theory, as well as a brief introduction to the semantics of natural language.

2. READINGS AND TEXTS

Textbook: None. Handouts and, possibly, auxiliary readings to be made available.

3. REQUIREMENTS AND GRADE

Homework assignments (weekly)	60%
Midterm and final exams	30%
Attendance and class participation	10%

<p><i><u>Violations of academic integrity will be taken seriously!</u></i> It is your responsibility to understand the University's policy. See your Class Handbook, the university's website, etc.</p>

4. ORGANIZATION AND OUTLINE OF THE COURSE

Review of Set Theory

I Isolating linguistic units

1. Distributional analysis
2. Application to ciphers; deciphering Linear B

II Syntax (and Phonology): building strings of units

3. Regular languages and finite state automata
4. The Pumping Lemma
5. Context free grammars
6. Pumping lemma in context free grammars
7. Phonology and finite state transducers

III Semantics: interpreting the meaning of strings of units

8. Propositional Logic
9. Brief introduction to compositional semantics