

Department of Linguistics
Spring 2013 [1131]

LINGUISTICS 820-4
Formal Linguistics

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COURSE DESCRIPTION:

This course will introduce you to the analysis of the abstract structures of natural language using rigorous formal techniques and mathematical reasoning. In particular, the course will cover basic techniques in mathematical linguistics and the precise properties of grammatical description in linguistics by studying grammar formalisms, formal languages and automata theory. To develop competence in mathematical reasoning, we will first start with a brief introduction to the basic concepts of set theory, relations, functions, and propositional logic. We will then go on to cover topics such as formal language and automata theory, and the generative capacity of different types of grammar formalisms -- finite-state grammars, context-free grammars, context-sensitive grammars, and mildly context-sensitive grammar formalisms such as Tree Adjoining Grammars.

Required Readings: Reading materials will be drawn from:

- Sipser, Michael. 2013. Introduction to the Theory of Computation. Third edition. Course Technology.
- Barbara H. Partee, Alice ter Meulen, and Robert E. Wall. 1993. Mathematical Methods in Linguistics. Kluwer Academic.

These books will be on reserve at the library. Additional reading materials may be distributed in class or made available on the course webpage.

COURSE GRADING:

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| • Assignments | 15% |
| • Class presentations | 20% |
| • In-class exam 1 | 20% |
| • In-class exam 2 | 20% |
| • Term paper | 25% |

Students should familiarize themselves with the Department's **Standards on Class Management and Student Responsibilities** at <http://www.sfu.ca/linguistics/undergraduate/standards.html>.

Please note that a grade of "FD" may be assigned as a penalty for academic dishonesty.

All student requests for accommodations for their religious practices must be made in writing by the end of the first week of classes or no later than one week after a student adds a course.

Students requiring accommodations as a result of a disability, must contact the