Syllabus
(as of August 27, 2013)

Class:	Monday/Wednesday 1-2pm	DRLB A-5
Recitations:	REC 201:Friday 1-2pm	Williams Hall 215
	REC 202: Friday 2-3pm	Williams Hall 216

Instructor:	Florian Schwarz	TA:	Anton Ingason
Office:	613 Williams Hall	Email:	ingason@ling.upenn.edu
Email:	florians@ling.upenn.edu	Office hours:	See Canvas Calendar
Office hours:	See Canvas Calendar	Location:	402 Williams Hall
	(or by appointment)		

Course site on Canvas: https://upenn.instructure.com/

1 Course Description

In this course, we study formal mathematical tools for the analysis of language that help us understand and classify the complex structures and rules that constitute language and grammar. These tools include set theory, formal language and automata theory, and propositional and predicate logic, and will be applied to the syntax and semantics of natural language. In addition to learning something about formal tools for analyzing language, this will also enhance your general skills in analytical reasoning.

2 Logistics & Requirements

There is no textbook. Notes (and some readings) will be made available throughout the course.

You have to purchase or lend a response clicker from Turning Technologies. Please try to have this by Wednesday, 9/12!   **(ResponseCard RF LCD (RFC-03-BX))**

$\rightarrow$ Available at Amazon and at Bookstore.

To do well in this class, it is crucial that you attend classes and recitations and do the work on time throughout the semester. The homework assignments are designed to make sure that you stay on top of the materials. As much of what comes later builds on earlier parts of the course, it is difficult to catch up once you fall behind. Therefore, the **homework assignments** make up a large part of your grade (**60%**). Part of the homework assignments will be completed online through Canvas. You can roughly count on an assignment every week, with some exceptions. There will be a **mid-term** and a **final** (**15% each**). In addition, there will be **1-question quizzes** right at the beginning of almost every class, which will make up the remaining **10%** of your class grade (this will be one of the uses of the Response Clickers). You will get partial credit for participating in these quizzes, and full credit if you got the answer right.

There is quite a lot of work throughout the semester. The upside of that is that if you're on top of the homework and the daily quizzes, the mid-term and the final should be relatively straightforward.

2.1 Homeworks, and how to do well on them

Homework has to be turned in by the beginning of class on the day it is due. You need to hand it in to Anton in class, or put a paper copy in Anton's mailbox in the Linguistics office BEFORE CLASS if you have to miss class for an excusable reason (619 Williams Hall). For online assignments, submission will be closed by the corresponding deadline.

Getting the answers right is not everything - what's important is that we can see that you thought the problems through and are able to identify the steps of your reasoning. Be explicit about these steps, so that even if the end-result is wrong, we can see what you did and where you went wrong. Also, if you feel like your answer is going wrong at some point or you can't figure something out, try to describe what you're having trouble with.

2.2 Late Work

Late work will not be accepted (barring truly exceptional circumstances which you generally need to tell us about before the due date).

2.3 Academic Honesty

If you find it helpful to collaborate on homework assignments, you are encouraged to do so by talking to other students about the problems. However, you have to write up and hand in your answers individually. Otherwise, neither you nor I can reliably gauge your understanding of the material. If you do work with other students, please indicate at the top of your assignment who you worked with. DO NOT simply copy each others work - if we suspect that this is happening, we will first talk to you and, if necessary, inform the Office of Student Conduct.

On the exams, you should work independently in accordance with Penn's Code of Academic Integrity. If I have reason to believe that your behavior is violating this code, I will contact the Office of Student Conduct to initiate an investigation. See the following links for further information:

- University's Code of Academic Integrity: http://www.vpul.upenn.edu/osl/acadint.html

- The Office of Student Conduct's Frequently Asked Questions page:
  http://www.upenn.edu/osc/faq.html

3 Tentative Schedule

Check Canvas Calendar for an up-to-date schedule. Homework due dates will also be posted there as we go along.

Class #	Date	Topic
1	8/28	Course Logistics; Introduction
2	9/4	Introduction / Set Theory
3	9/9	Set Theory (Reading: Partee, ter Meulen and Wall, Chap. 1)
4 & 5	9/11 & 16	Relations and Functions (Reading: PtMW, Chap. 2)
6	9/18	Properties of Relations (Reading: PtMW, Chap. 3)
7	9/23	Lexical Analysis
8	9/25	Lexical Analysis cont'd
9	9/30	Syntax & Finite State Automata
10	10/2	Finite State Automata & Regular Languages
11	10/7	Finite State Automata & Regular Languages II
12	10/9	Finite State Automata & Regular Languages III
13	10/14	Finite State Automata & Regular Languages IV; Review
14	10/16	Mid Term
15	10/21	More on Regular Languages
16	10/23	The Pumping Lemma
17	10/28	Right-Linear Grammars
18	10/30	Context Free Grammars
19	11/4	English as a CFG
20	11/6	CFG's & the Chomsky Hierarchy
21	11/11	Statement Logic
22	11/13	Statement Logic cont'd
23	11/18	Deduction
24	11/20	Predicate Logic
25	11/25	Natural Language Quantifiers
26	12/2	Natural Language Quantifiers
27	12/4	Formal Semantics for Natural Language
28	12/9	Formal Semantics for Natural Language