PHIL 20100/91 HIPS 20700/91
Elementary Logic

Summer 2018

Rosenwald 302
MWF 1:30-3:30

Instructor: Joshua Mendelsohn
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Office Hours: MWF 3:30-4:30 in our classroom.

An introduction to the techniques of modern symbolic logic. The focus will be on the syntax and semantics of classical sentential and first-order quantificational logic. We will discuss how statements and arguments of ordinary discourse can be represented within these formal languages, and develop methods for determining whether a given argument is valid or invalid. Students will learn to construct proofs and represent reasoning in sentential and first-order quantificational logic using natural deduction systems.

Books

The book for the course is Paul Teller's A Modern Formal Logic Primer, which is freely available online: http://tellerprimer.ucdavis.edu/.

The book is also available on the Canvas site of this course.

Attendance

Success in this class will require constant work and attendance throughout the summer session. In an intensive course like this there is very little time to catch up if you fall behind, and students who miss multiple sessions (or who take a vacation from the homework exercises) frequently never manage to catch up. Attendance is expected, but you are allowed three unexcused absences for the course. Further absences without proof of a legitimate reason (such as a family or medical emergency) will cause the student to fail the course.

Course requirements

There will be four homework assignments and an in-class final exam.

Assignments will be due on Mondays of weeks 2-5 at the beginning of class. They will be graded. Your lowest assignment grade will be disregarded. The other three assignments are each worth

thirteen and a third percent of your final grade. Collectively, the three assignments are worth 40% of the final grade.

The final exam will take place in class on Friday, June 20th. It is worth 60% of the final grade.

Homework assignments will be uploaded to the Canvas site in advance of the due dates. Late assignments will be docked 10% per day unless you have received approval ahead of time. Homework must be submitted in class. Scans and emails will not be accepted without prior permission.

Course schedule

The following schedule provides an overview of the topics that we will address during this quarter as well as the assigned readings. This may be revised as the quarter goes on. All readings are from Teller's A Modern Formal Logic Primer.

1	**Basic concepts I**	
	– Arguments and consistency	Vol. 1, ch. 1.
	– Validity and soundness	
2	**Basic concepts II**	
	– Transcription	Vol. 1, chs. 1-2.
	– The syntax and semantics of SL	
3	**Basic concepts III**	
	– Equivalence and entailment	Vol. 1, chs. 3-4.
	– Conditionals	
4	**Natural deduction for SL I**	
	– Proofs and their types	Vol. 1, ch. 5.
	– Primitive rules for SL	
5	**Natural deduction for SL II**	
	– Derived rules for SL	Vol. 1, chs. 6-7.
	– Proof strategies for SL	
6	**NO CLASS**	

7	**Predicate logic I**	
	– Sub-sentential structure	Vol 2, ch. 1.
	– PL lexicon and syntax	
8	**Predicate logic II**	
	– Semantics for PL	Vol. 2, ch. 2.
	– Validity other key notions	
9	**Predicate logic III**	
	– Nested quantifiers	Vol. 2, chs. 3-4.
	– Transcription into PL	
10	**Natural deduction for PL I**	
	– Primitive rules for PL	Vol. 2, ch. 5.
11	**Natural deduction for PL II**	
	– Derived rules for PL	Vol. 2, ch. 6.
12	**Natural deduction for PL III**	
	– Proof strategies for PL	
13	**Revision I**	
14	**Revision II**	
15	**FINAL EXAM**	