PHL 110: Introductory Logic

Fall 2018

Instructor:	Alison Peterman	TA:	TBA
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Office Hours:	TBA		Tuesdays 11:30-1:30
	Lattimore 520		Lattimore 534

Class Time and Location: MW 3:25-4:40 pm, Harkness Hall 115
Text: *A Logic Primer* by Paul Teller

Course Description

Logic is the study of entailment, or of what statements follow from what other statements, or of what statements can be validly inferred from other statements. The field of logic is very old, and there have been many different systems intended to help people determine validity. We will be studying two more recently developed such systems, which involve the construction of an artificial language and the development of a proof system that can be used to determine any and all statements that can be derived from a given set of statements in the language. The first is sentential logic (sometimes known as propositional logic), which studies the relationship between the truth values of atomic sentences and more complex sentences built up out of those using connectives. The second is predicate logic, which can be used to analyze statements involving the attribution of properties or relations to individuals, and involves the use of quantifiers.

In this course, you will learn to translate English statements into an artificial language, to construct proofs in this language using a set of derivation rules, and to determine whether or not arguments are valid. Studying logic will help you to clearly formulate and evaluate arguments, which will help you to tackle arguments both inside and outside of the classroom. Logic will also help you to become a clearer writer. And facility with formal languages and derivation systems comes in handy in many academic fields, including philosophy, computer science, mathematics, linguistics, and cognitive science.

Text

The text for the course is *A Modern Formal Logic Primer*, Volumes I and II, by Paul Teller. The book is out of print but it is available online for free at the following website: `http://tellerprimer.ucdavis.edu/`. Please download all the files now in case there is a problem with the server. If you would prefer a hard copy, you can find one used on Amazon.

Policies

Please let me know right away if you need special accommodations because of a documented condition that interferes with your learning.

Please review the class schedule sometime in the next week and let me know if there are any

issues.

My pronouns are she/her/hers. Please email me at the beginning of the course letting me know your preferred gender pronoun: https://www.gsafewi.org/wp-content/uploads/What-the-heck-is-a-PGP1.pdf.

Please turn off your cell phones when you arrive; if you are using it I will ask you to leave, unless you have a real need to do so. No computer funny business. I reserve the right to ban laptops if it becomes a problem (except for students with a documented need for one).

There is no text for this class, but there will be readings posted on Blackboard. When a reading is indicated under a class date, you are expected to have read before class on that day.

Student success at the University of Rochester includes more than just academic performance. Please feel comfortable speaking with me about challenges you are experiencing within and outside of the classroom so that I may submit a CARE report on your behalf. A CARE report is submitted when the level of concern for a student necessitates inclusive, multi-layered support from the campus community. The CARE network administrator shares information only with staff who need to know it in order to help you.

Feel free to write me emails, but please take a moment to write them in polite and thoughtful way. Start with "Dear Alison," or "Dear Professor Peterman," and not "Hi" or "Hey" or no introduction. End with a signoff. I would strongly recommend taking this advice for your other professors, too.

Academic honesty

Students and faculty at the University must agree to adhere to high standards of academic honesty in all of the work that we do. As freshmen, students read and sign an academic honesty policy statement to indicate that they understand the general principles upon which our work is based. The College Board on Academic Honesty website gives further information on our policies and procedures: www.rochester.edu/college/honesty.

Assessment

Lecture attendance and suggested assignments:

Lecture attendance is not required, but it is highly, highly recommended; it will almost certainly hurt your grade if you do not attend. I will have very little inclination to be understanding of poor performance that results from unjustified absences. I will also not collect or grade the suggested assignments but I will operate on the assumption that you have done them by the date on which they are listed. The only way to get good at logic is by doing it, trust me. Also: it's fun!

Workshop attendance (15%):

Peer-led workshop attendance, and completion of workshop assignments, is required. You may miss two without penalty; please save those for times when you need them. If you have EXTENUATING

circumstances that require you to miss more, please let me know. You will be asked to choose your workshops during the first week.

Exams (60%):

There will be two exams, each worth 30%. These will be similar to the problem sets but they will be in-class and you will not be allowed the use of any books, notes or other resources. Each exam will cover the material from that half of the course. There is no cumulative final exam, but the skills required for the second half of the course build on the skills taught in the first half of the course.

Problem Sets (25%):

Four problem sets, graded for both effort and accuracy. You may work together but you must try all of the exercises yourself first so that you get practice. Mere copying is not OK and counts as academic dishonesty.

Course Schedule

Sentence logic

Aug. 29	Introduction	
Sept. 5	Sentences and truth functions	Chapter 1
Sept. 10	Compounds and truth tables	Chapter 1
Sept. 12	Conditionals	Chapter 4-4
Sept. 17	Transcription	Chapter 2
Sept. 19	Logical equivalence	Chapter 3
Sept. 24	Validity **PS 1 due in class**	Chapter 4
Sept. 26	Natural deduction	Chapter 5
Oct. 1	Rules	Chapter 5
Oct. 3	Proofs	Chapter 6
Oct. 8	Derived rules	Chapter 7
Oct. 10	Practice	
Oct. 15	**Fall break - NO CLASS**	
Oct. 17	Practice **PS 2 due in class**	
Oct. 22	Review	
Oct. 24	**Exam 1**	

Predicate logic

Oct. 29	Syntax	Volume 2, Chapter 1
Oct. 31	Semantics	Chapter 2
Nov. 5	Validity	Chapter 2
Nov. 7	Quantifiers	Chapter 3
Nov. 12	Quantifiers	Chapter 3
Nov. 14	Transcription	Chapter 4
Nov. 19	Natural deduction **PS 3 due in class**	Chapter 5
Nov. 26	Proofs	Chapter 6
Nov. 28	Proofs	
Dec. 3	Identity	Chapter 9
Dec. 5	Identity **PS 4 due in class**	
Dec. 17	Review	
Dec. 19	**Exam 2**	