

# PHIL 0500: Introductory Logic

**Lectures:** Mondays & Wednesdays, 1-2pm—232 CL

**Lecturer:** Joshua Eisenthal

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**TAs:** William Conner

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Recitations: Thursdays, 9am—339 CL; 10am—339 CL; 11am—249 CL

Office hours: Thursdays, 2-3pm & Fridays, 2-3pm—1009D CL

Laura Davis

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Recitations: Mondays, 9am—135 CL; 10am—149 CL; 11am—3121C PH

Office hours: Tuesdays, 9-10am & Wednesdays, 9-10am—1009H CL

## COURSE DESCRIPTION

Logic is known as “the science of reasoning”, especially deductive reasoning. This means that the most fundamental notion in this course is the notion of a *valid argument*, an argument in which the conclusion is implied by the premises. Deductive reasoning depends on the structure of an argument rather than its content. Hence logic begins with an analysis of language designed to reveal the structure of ordinary sentences, then develops the mathematical tools needed to study the structure of arguments.

The course divides into three units. The first two units concern aspects of logical structure which depend on English expressions like “and,” “not,” “either... or,” and “if... then”. These expressions are used to combine individual statements into compound statements. The final unit builds on this by studying aspects of logical structure which depend on words like “every,” “each,” “all,” “some,” and “none”—words essential for the expression of generality. By learning to express ordinary reasoning in a symbolic language, you will learn how to *prove* the validity of an argument. You will also learn how to show that an argument is *not* valid, even if it might appear otherwise.

Although logical words like “and,” “not,” or “every” may not seem as exciting as key words in other disciplines like “virus,” “sex,” or “justice,” these humble logical words occur in discourse on *every subject matter whatsoever*. In studying logic we are studying the process of reasoning itself; reasoning that underlies all other areas of study.

## COURSE REQUIREMENTS AND GRADING

There will be required **weekly homework assignments**, all of which will be completed online. Cumulatively, these will be worth 25% of your final grade. **The homework for each week will always be due by 2pm on Tuesday of the following week; please note that no late submissions will be accepted.**

There will also be **two in-class midterms**, each of which will be worth 20% of your final grade, and at the end of the course there will be a **final exam** worth 25% of your final grade. The final 10% of your grade will be for attendance and participation. In summary:

Homeworks:	25%
Midterm 1:	20%
Midterm 2:	20%
Final Exam:	25%
Participation:	10%

There will be three “**bonus**” homework assignments during the semester. If you score higher on a bonus than on one of the other homework assignments, then the score for that bonus will replace that lower score. Alternatively, you can use the bonus homework assignments for your “Participation” grade. In that case, however, you cannot use the bonuses to replace any of your other homework assignments. **If you would like to use this option, \*you must discuss it with me\***. If you simply fail to show up to recitations, then you will get zero for your participation grade.

The final grading scale used will be the standard scale, A: >92%, A-: 92-90%, B+: 89-87%, B: 86-83%, B-: 82-80%, C+: 79-77%, C: 76-73%, C-: 72-70%, D+: 69-67%, D: 66-63%, D-: 62-60%, F: <60%.

## LOGIC 2010

Throughout this course, we will be using software developed at UCLA by Professor David Kaplan, “Logic 2010”. You will be required to download the software and register using your PeopleSoft number (there will be a special workshop if you need help doing this). You can download Logic 2010 here:

<https://logickx.humnet.ucla.edu/Logic/Download>

Detailed instructions for registering, accessing resources (including the course textbook), and completing assignments will be provided in class.

## TEXTS

REQUIRED — “An Exposition of Modern Logic”, Terence Parsons  
 [N.B. this text is provided for free with the Logic 2010 software]

## SCHEDULE

Monday lecture	Wednesday lecture	Unit
Jan 7th	Jan 9th	<b>Chapter 0:</b> Fundamental concepts of deductive logic.
Jan 14th	Jan 16th	
—Jan 21st: no lecture—	Jan 23rd	<b>Chapter 1:</b> Negation and the Material Conditional.
Jan 28th	Jan 30th	
Feb 4th	Feb 6th	
Feb 11th	Feb 13th	
Feb 18th <b>*MIDTERM 1*</b>	Feb 20th	<b>Chapter 2:</b> Conjunction, Disjunction and the Biconditional.
Feb 25th	Feb 27th	
March 4th	March 6th	
March 10th-17th : Spring break		
March 18th	March 20th	
March 25th <b>*MIDTERM 2*</b>	March 27th	<b>Chapter 3:</b> Introducing monadic predicate logic.
April 1st	April 3rd	
April 8th	April 10th	
April 15th	April 17th	
<b>*FINAL EXAM*</b> — April 22nd, 4pm - 5.50pm		

## QUANTITATIVE REASONING

This course fulfills the Dietrich School of Arts and Sciences Quantitative Reasoning General Education Requirement (GER) as described for the GERs starting Fall 2018 (term 2191). That GER reads as follows:

Quantitative and Formal Reasoning: All students are required to take and pass with a grade of C- or better at least one course in university-level mathematics (other than trigonometry) for which algebra is a prerequisite, or an approved course in statistics or mathematical or formal logic.

## MASTERING LOGIC

In learning logic you are learning to master a new set of skills. It is helpful to bear in mind how you might master a *physical* skill. Take yoga as an example. In both logic and yoga, reading a textbook or watching a tutorial video can be very helpful. More importantly, being guided by someone with knowledge and experience can be *extremely* helpful. But at the end of the day, you cannot learn either logic or yoga by doing this; **you need to *practice for yourself*.**

This course is designed around the idea of structuring your own practice. In lectures, I will give you the necessary scaffolding and motivation; in recitations, you will learn the techniques and strategies that you can apply in your own work; in office hours, you can come to talk through any difficulties that you might encounter along the way. All the rest, however, is up to you.

## OFFICE HOURS AND EMAIL

Office hours can be used to talk over assignments, reading, or class performance, or for more freewheeling discussion about the material in the course. Email should be used for short factual or logistical questions. Email may also be used to ask philosophical questions, but in general a proper discussion will require face time during office hours. **Please allow at least 24 hours for me to reply before sending a follow-up email.**

## FOOD AND DRINK

Any drinks other than water must be in containers with lids, and except on very special occasions food is not generally permitted during lectures or recitations. So please arrive well fed and dispose of any food or put it in your bag or stomach beforehand.

## LAPTOPS AND PHONES

To ensure a productive environment for everyone, please silence your phones and do not use them during recitation. There may be certain times where you are invited to bring your laptop to lecture or recitation. **At all other times, please refrain from using your laptop.** There is now substantial [evidence](#) showing that laptops have a detrimental impact on your grades, and even on the grades of people sitting near you.

## ACADEMIC INTEGRITY POLICY

Cheating/plagiarism will not be tolerated. Students suspected of violating the University of Pittsburgh Policy on Academic Integrity, noted below, will be required to participate in the outlined procedural process as initiated by the instructor. A minimum sanction of a zero score for the quiz, exam or paper will be imposed. (For the full Academic Integrity policy, go to [www.provost.pitt.edu/info/ai1.html](http://www.provost.pitt.edu/info/ai1.html).)

## DISABILITY RESOURCE SERVICES

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Office of Disability Resources and Services, 140 William Pitt Union, 412-648-7890, as early as possible in the term. Disability Resources and Services will verify your disability and determine reasonable accommodations for this course.

## E-MAIL COMMUNICATION POLICY

Each student is issued a University e-mail address (username@pitt.edu) upon admittance. This e-mail address may be used by the University for official communication with students. Students are expected to read e-mail sent to this account on a regular basis. Failure to read and react to University communications in a timely manner does not absolve the student from knowing and complying with the content of the communications. The University provides an e-mail forwarding service that allows students to read their e-mail via other service providers (e.g., Hotmail, AOL, Yahoo). Students that choose to forward their e-mail from their pitt.edu address to another address do so at their own risk. If e-mail is lost as a result of forwarding, it does not absolve the student from responding to official communications sent to their University e-mail address. To forward e-mail sent to your University account, go to <http://accounts.pitt.edu>, log into your account, click on **Edit Forwarding Addresses**, and follow the instructions on the page. Be sure to log out of your account when you have finished. (For the full E-mail Communication Policy, go to [www.bc.pitt.edu/policies/policy/09/09-10-01.html](http://www.bc.pitt.edu/policies/policy/09/09-10-01.html).)