

PHIL150.03: Introduction to Logic

TR 3:05-4:20PM

West Duke 202

Instructor: Whitney Kane

Office hours by appointment

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Course Description

The task of logic is to distinguish good reasoning from bad reasoning. When people present arguments, they often think that their premises adequately support their conclusion—that the support provided is enough to suggest that their conclusion is true. However, they are not always correct. In this class, we will be learning how to recognize different kinds of arguments and assess whether or not, or to what extent, conclusions are really supported by premises. After we learn how to distinguish good reasoning from bad, we will use these skills to evaluate arguments in real world contexts. We will study the basics of deductive logic, including translations into symbolic notation, truth tables, and proofs. We will also discuss inductive logic and logical fallacies.

By the end of the course, you will:

- Understand the difference between an argument and an explanation, the difference between deduction and induction, the difference between a valid argument and a sound argument, and the difference between a strong argument and a weak argument.
- Be able to recognize and assess the quality of different types of arguments—to identify the relationships between different ideas, recognize faulty reasoning, and fairly weigh evidence.
- Have practiced extracting arguments from ordinary language texts.
- Have strengthened your ability to recognize and identify logical fallacies.
- Have improved your ability to construct precise and persuasive arguments and to communicate your ideas clearly and effectively.

Course Policies

Course Materials

The required textbook for the course is listed below. Please obtain a copy as soon as possible—it is available online, but is not yet in Duke's bookstore. Please be sure that you get the *fifth* edition, as the previous versions are importantly different.

Howard-Snyder, Frances, Daniel Howard-Snyder, and Ryan Wasserman. *The Power of Logic*. Fifth ed: McGraw-Hill, 2012.

All other course materials will be available on the course page on Sakai (<https://sakai.duke.edu>).

Laptops & Cell Phones

Please refrain from using your cell phones in class. If there is an emergency and you need to use your phone, please step outside of the classroom to do it. Laptops are also not permitted in class.

E-mail

I am most easily reached by e-mail and will always respond within 24 hours.

Plagiarism

Plagiarism is representing another's work as one's own. Outside works must be cited or placed in quotations. Any cheating will be handled according to the university's policy on academic dishonesty. Please see the Duke University Undergraduate Honor Code for more information.

Disabilities

Students with disabilities who believe that they may need accommodations in the class are encouraged to contact the Office of Services for Students with Disabilities at 684-5917 or disabilities@as.duke.edu as soon as possible to better ensure that such accommodations are implemented in a timely fashion.

Evaluation

Exams, 50%

There will be two in-class exams, and I will provide a study guide for each. The tests will be a combination of true/false, short answer, and problem-solving questions, and they will be based on the lecture, reading, and homework assignments.

I am perfectly willing to provide extensions for exams, and you do not need to explain your reason for requesting the extension. However, you must ask for the extension at least 24 hours in advance and let me know when you are available to make it up.

Homework Exercises / Practice Problems, 15%

Learning logic is like learning math in that practice really helps. My experience is that, while a few students can succeed in the class without doing much homework, most need to practice regularly. So I will consistently assign practice problems that will help you master the material.

Some of these exercises will merely be graded complete/incomplete, but I will also grade some of them for accuracy. This is intended to help you—I want to incentivize you to work hard on the homework, as doing so will help you to do well on the exams.

Homework will be due at the beginning of class. If you are not able to attend class for some reason, you can have a classmate submit it for you, scan and submit it to the Dropbox on Sakai by the start of class, or put it in my mailbox in the philosophy department (located on the second floor of the West Duke building on East Campus) before class.

Short Assignments, 15%

I will assign a few (2-4) projects—mostly toward the end of the semester, after the two exams. These will be short and highly focused assignments.

Sample assignment: I will provide you with a list of readings. In each of these readings, an author articulates an argument for some claim. I will ask you to write a 1-2 page paper in which you present, explain, and evaluate the main argument in the reading of your choice.

Sample assignment: We will discuss a number of logical fallacies—common errors in reasoning. I will ask you to find an example of a logical fallacy in a movie clip, advertisement, etc. and share it in class.

Attendance & Participation, 20%

Class presence and participation points are given to encourage your active participation, which is necessary in order for you to obtain a solid understanding of the ideas that we will be discussing in this course. You will be given four points each time that you are an active participant in class (listening, taking notes, asking and answering questions, putting effort into in-class group work, etc.). Points may be deducted if you are rude, disruptive, or inattentive.

I will drop everyone's two lowest class participation grades at the end of the semester, so you are permitted to miss two classes, for any reason, without it affecting your participation grade. You do not need to explain to me why you are absent.

Content Structure

PART I

What is logic? What is the difference between deductive and inductive logic?

What is an argument? What makes an argument a good one?

Key concepts: validity, strength, soundness, cogency

PART II

How to evaluate deductive arguments in statement logic & predicate logic

We will learn about the following methods for assessing/demonstrating validity: famous forms method, counterexample method, Venn diagram method, truth table method, & natural deduction

PART III

How to reconstruct ordinary language arguments to make their important logical features explicit

How to spot informal logical fallacies

How to evaluate inductive arguments