

Phil. 110: Intro. to Logic and Critical Thinking Fall 08

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Office Hours: MWF: 10 am. to 11 am, 1 pm to 2 pm, and by appointment

**Required Text:** *First Logic*, by John Humphrey

**Scope and Purpose of Course:** The course is an introduction to the ancient art and science of logic. But what is logic? Most importantly, logic comprises the methods and principles used in distinguishing correct reasoning from incorrect reasoning. In this sense it is a normative discipline. Logic is also an activity, one that includes the activity of criticizing reasoning. The aim of this course is to allow you to improve your skills in this activity. This is not to say that the line between correct and incorrect reasoning is a hard and fast one, nor that there is universal agreement in all cases as to where the line between the two gets drawn. However we will attempt to make this distinction clear in particular cases as well as provide justification for our lines of demarcation. It should be stressed that logic is an ancient subject and there is much in it that is stable and secure. We will for the most part concentrate on the stable and secure areas.

By the end of the course you will be able to distinguish deductive from inductive arguments (relatedly, synthetic/contingent statements from analytic/necessary statements). You will be capable of analyzing propositions and arguments and be able to test the latter for validity. You will be exposed to Aristotle's logic of the syllogism and be able to translate ordinary English sentences into categorical form and test arguments containing such forms for validity via various formal techniques, including Venn's diagrams, rules for the syllogism and Ladd's antilogism test. Also, course members will be exposed to the rudiments of modern formal logic, viz. the propositional calculus, including truth tables, and possibly monadic quantification. We will also study the standard forms of fallacious reasoning and be able to distinguish begging the question, non sequitur, and various forms of fallacies of irrelevance. If time permits, we will acquaint ourselves with the rudiments of scientific method, including inductive generalizations and Mill's methods for determining cause and effect relations. Also, the first part of the course will be given over to learning about CONCEPTS and rules for their use. This part of the course can be regarded as an informal account of modern set theory, which is the fundamental theory of modern mathematics. We will also investigate the art of definition in some detail. In both cases, genus/species considerations will be central.

**Exams, Homework, and Grades:** There will be at least three exams but perhaps four. Roughly speaking, all the exams, except the final, will be given equal weight and will together comprise 50% of your test grade. The final will be cumulative and will constitute the other 50% of your test grade. Your test grades will constitute anywhere from 85% to 100% of your final grade. The more regular your attendance

and the better your in-class efforts, the less the tests scores need determine your final grade. All of the exams will be open-note and we will have a review session or a pre-test before each exam. The material for the exams will be drawn from the exercises and problems from the text and those that we go over in class.

I regard homework as a teaching aid rather than a part of the criteria for grading. This means that when I assign homework, more often than not I will not collect it but we will go over exercises, together, in class. Occasionally I will collect it as a way of helping me get a feel for how well things are being understood. However, I will not "grade" it in any strict sense. One more word on tests and grades: Scoring 90 or above on each test is a surefire way to an A; 80 to 89 will get you no worse than a B; 70 to 79 no worse than a C, and 60 to 69 will get you at least a D.

**Attendance:**

1. Absences from 15-20% will result in a final course grade lowered by one letter.
2. Absences higher than 20% will result in a final course grade of F regardless of earned grade in the course.
3. Absences due to documented family or medical emergencies may be excused by the instructor, if appropriate notification is provided by Student Affairs. It is the student's responsibility to contact Student Affairs in such cases. Absences for university-sponsored activities (e.g., athletics, forensics, etc.) must be provided in advance to the instructor. The instructor may request that all work be completed prior to the absence.

**Tentative course schedule**

- Week 1: General intro, basic notions, and logic puzzles just for fun;
- Week 2: Singular terms and Concepts; abstract/concrete
- Week 3: Concepts: genus/species
- Week 4: Definitions, propositions, contradictories and contraries
- Week 5: Propositions, arguments, logical strength
- Week 6: Pre-test, review and first exam;
- Week 7: Fallacies
- Week 8: Basic symbolic logic (tentative)
- Week 9: Pre-test, review and second exam
- Week 10: Categorical logic, AEIO statements
- Week 11 and 12: Operations on sentences, make that move
- Week 13: Categorical syllogisms, forms and validity
- Week 14: Pre-test, review and 3rd exam;
- Week 15: Review, pre-test for final.