

FUNDAMENTALS OF LOGIC

Philosophy 95

Spring 2012



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Office Hours:
T, Th 8:45 - 10:15 a.m.
or by appointment

Course Description

This course serves as an introduction to formal logic. Formal logic aims to represent certain aspects of human reasoning in a formal (symbolic) language. The use of a formal language brings to the surface the logical connections between different claims and thereby enables us to use mechanical techniques for evaluating arguments. There will be four different components to our study: (1) learning a formal language for sentential (propositional) and predicate logic; (2) learning how to “translate” English sentences into sentences in the formal language, and vice versa; (3) learning how to construct proofs of validity for arguments in the formal language; and (4) learning the *semantics* (or *model theory*) for the formal language.

For most of you, mastery of the formal system is not an end in itself but rather serves as a means to help you to become better at reasoning. The skills you acquire in studying logic – such as figuring out how to reach a desired goal from a given set of resources, developing the habit of paying close attention to what a statement says (and what it doesn’t say!), and learning what makes an argument a good argument – can prove invaluable as you make your way in the world, no matter what course of study, or what career, you choose. Of course, if you go on to study more philosophy, your study of logic will have additional benefits, since many contemporary philosophers use logical notation in their writing. Finally, to mention one very practical consideration: Studying logic helps you to be more analytical. This is useful preparation for standardized tests such as the LSAT and the GRE.

Please note that this course does not satisfy the CMC GE requirement in philosophy.

Course Text

The text for this course is *Logic Primer* (2nd edition), by Colin Allen and Michael Hand. Copies are available in Huntley Bookstore. I strongly recommend that you purchase this textbook as soon as possible; having your own copy will be imperative for your success in this class. The authors of this text have also put together a useful website: <http://logic.tamu.edu>. I suggest you bookmark it.

Sakai

Supplementary course notes, homework assignments, and sample homework solutions will be posted regularly on our class site on Sakai. Also available on Sakai are links to several important resources from the Logic Primer website: the *Quizmaster*, a program which generates mini-quizzes on the course material; the *Logic Daemon*, a proof-checker designed for use with our textbook; and an equivalency checker that will come in very handy when doing homework.

Course Requirements

Unlike other philosophy courses, there is virtually no reading required for this class. In its place, there is required homework—you cannot learn logic without working through problems on your own. I will be assigning you homework problems in almost every class, due the following class. The homework will be fairly light for the first few classes, but it will then get considerably heavier.

I do not intend to collect/grade the homework, but I reserve the right to alter this policy if I find that people are neglecting the homework. If you miss class, you should check Sakai (or with a classmate or with me) to get the homework assignments. We will go over some of the homework in class; for the other problems, answers will usually be available either in the back of the work or on Sakai.

Tests

There will be three in-class tests, each worth 20% of your course grade. All tests are open book and open notes/handouts – although no computers are allowed. Before each test, I will make available copies of the equivalent test and sample answers from a previous year. The expected test schedule is as follows:

Test #1	Tuesday, Feb. 14
Test #2	Thursday, March 8
Test #3	Thursday, April 12

Test dates will be confirmed in class at least one week prior to the dates listed above. Barring extraordinary circumstances, no make-up tests will be administered unless prior arrangements have been made with me.

Final Exam

The final exam, worth 40% of your course grade, will be held on **Tuesday, May 8** from 2 p.m. to 5 p.m. The final will be cumulative, though it will emphasize the material covered after the third in-class test. Like the in-class tests, the final is open book and open notes but no computers. You should also note that you cannot pass the course without taking all three tests and the final. *Note:* Graduating seniors will take the final exam on **Thursday, May 3** from 1 p.m. to 4 p.m. No one other than graduating seniors may take the exam at this time.

Extra Credit

I am always looking for fun and interesting examples of logical arguments, fallacies, etc. in everyday life – in print (text or cartoons), on tv, online, etc. Keep your eye out for them. I will give you 1 test point for each example of logic in action that you provide me throughout the semester, up to a total of 6 points. (Tests are 100 points.) I will also accept original jokes. In general, I will accept only new and interesting examples – not things that can be found by a Google search for “Logic jokes.” Please send me any submissions by email, and make sure you briefly explain their relevance. *Any extra credit must be submitted before the last class meeting.*

Cell phones/Laptop policy

Please silence your cell phone during class and keep it stored away. If you are texting during class, I will ask you to leave the room. You are permitted to use your laptops in class *for note-taking purposes*. If I find that students are using laptops for other purposes, I reserve the right to alter my policy of allowing them in class.

Accommodations for Disability

Should you need special accommodations due to disability for anything relating to our class, please see CMC’s policy at <http://www.cmc.edu/dos/DSS/disabilitysupport.php>, and also feel free to come talk to me. In particular, if you have appropriate documentation indicating that you are entitled to extra time on tests, please come talk to me about your situation at least one week prior to Test #1 (scheduled for February 14).

Credit/No Credit Option

I strongly recommend that anyone interested in taking the class Credit/No Credit come talk to me before electing this option. Because of the cumulative nature of logic, and because the material gets more difficult as the course progresses, taking the class for C/NC can be a dangerous path – if you treat the class casually with the attitude of “aiming for a C,” you will likely be in serious trouble in the second half of the semester.

Three Keys to Mastering Logic

◆ *Come to class.*

As you will quickly notice, *Logic Primer* is not designed for self-study; it is a very sparse text. It is extremely difficult (I would even go so far as to say that it is impossible) to learn the material without coming to class.

◆ *Practice, practice, and more practice!*

Learning logic is a lot like learning a foreign language. It is also a lot like learning math. Courses in logic, like courses in foreign languages and mathematics, require that you learn certain skills – and in order to learn any skill, you have to practice. It is not enough merely to come to class and read the book – you have to put in time working on your

own. Towards this end, I will be assigning lots of practice problems as homework. You should work hard on the practice problems, attempting them when they are distributed (and, importantly, before I distribute solutions). It is one thing to be able to look at a solution and to understand why it is right. It is quite another thing to be able to arrive at that solution yourself. Make sure that you really allow yourself to wrestle with the problems before you peek at the answers or look for help from me or a classmate.

◆ ***Don't get behind.***

Another respect in which logic courses are like courses in mathematics or courses in foreign languages is that the material is cumulative. It is very important to keep up. Do the homework diligently so that you'll know when you don't understand something, and if you do find yourself having trouble with any of the material, please come see me as soon as possible. I will be happy to work with you in office hours. Don't wait until a couple of days before a test to come ask for help.