Philosophy 112 — Syllabus — Philosophy 112

David Sanson

My office is Stevenson 341. My email is desanso@ilstu.edu. My office hours for this term are M 11-12:00 and W 3:15-4:15, or by appointment.

The Philosophy Department employs logic tutors, who are available by appointment.

Course Description

Logic is the study of correct and incorrect reasoning. Logicians want to understand what makes good reasoning good and bad reasoning bad. This helps us avoid making mistakes in our own reasoning, and it allows us to evaluate the reasoning of others. But the importance of logic goes beyond this. Logic lies at the foundations of mathematics, linguistics, cognitive science, computer science, and philosophy.

This course provides an introduction to the basic concepts and methods used by logicians. Our focus will be on *formal* logic. We will explore the logic of 'not', 'if', 'and', 'or', and 'if and only if', 'every', and 'some'. You will learn how to symbolize arguments in a way that makes their logical form perspicuous, and you will learn techniques for determining whether or not symbolized arguments are good or bad.

Course Objectives

This course is both a GenEd course in the category of Quantitative Reasoning, and a course required for the philosophy major. Here is how the University describes the GE category:

> "In Quantitative Reasoning courses, students examine the principles, practices, instruments, and systems of mathematics and logic used to measure, quantify, analyze, and represent social, scientific, technological, and other phenomena as a basis for decision-making."

Whatever your major, this course will make you a better reasoner. You will learn how to formally represent a given line of reasoning, and how to evaluate whether it is good or bad. You will get better at seeing how different pieces of information can "fit together" to entail new information. Although this course has no writing component, many of you will find that it improves your analytic writing skills, as you get a better sense of how to marshal your evidence in support of a conclusion.

Again, no matter your major, this course will give you exposure to and appreciation of the methods of formal logic. Though much of our time will be spent learning *how to do* logic, we will occasionally step back and reflect on the relevance of logic to broader questions about the nature of language, the role of reason in mathematics, the nature of truth, and the nature of rationality.

The course will also enable you to read and understand the symbolic formulas of modern formal logic—a skill somewhat akin to the ability to read and understand algebraic formulas. This is valuable in its own right, as it gives you a powerful tool for thinking about the form your reasoning takes, just as algebra gives you a powerful tool for thinking about numerical relationships, and geometry gives you a powerful tool for thinking about spatial relationships. This is skill is especially essential for philosophy majors, as contemporary work in philosophy assumes a basic literacy in symbolic logic.

For the philosophy major, this course can either be seen as a useful supplement to other philosophy courses, or as the gateway to some of the more "technical" fields in contemporary philosophy, such as Philosophy of Language, Philosophy of Math, and Philosophical Logic, and the more "technical" parts of contemporary Philosophy of Mind, Epistemology (the Theory of Knowledge), and Metaphysics (the Theory of Being).

Course Requirements

Software and Text

You do not need to purchase a text for this course. You do need to download a free software program:

- Logic 2010: A Workbook: `http://logiclx.humnet.ucla.edu`

The software runs on Windows, Mac, and Linux operating systems (if you need help getting it set up on Linux, ask), but it will not run on iOS, Android, or Chrome OS. The software requires Java. Before installing, be sure to read the instructions on the download page for your operating system, and be sure to read the document, Installing, Starting, Registering, and Backing Up in Logic 2010., which is linked to at the top of the download page.

The software is installed on the public computers on floors 2, 4, 5, and 6 of Milner Library and the computer in the Philosophy Department student lounge, Stevenson 412A. It should be possible for you to install it on other public computers for your own use, but that may require a special trick.

The software comes with a free online textbook, *An Exposition of Symbolic Logic*, by Terry Parsons. I will refer to this book as "The Logic Text". The documentation that comes with the software sometimes refers to it as the Logic Text and sometimes as the "Terry Text". Once you have installed the software, you can access the Logic Text by clicking on the "Logic Text" button. I strongly encourage you to **print the text** for your own personal use. You can also find links to each chapter of the text on the schedule page.

I have also created an online supplement to the Logic Text.

The software and the Logic Text are both based off of a classic logic textbook,

- Donald Kalish, Richard Montague, and Gary Mar (1980). *Logic: Techniques of Formal Reasoning*, 2nd edition. Harcourt: Fort Worth.

Advanced students may wish to look to that textbook for additional insight and exercises.

Graded Assignments

Your grade will be based on homework and exams, broken down as follows:

Homework	25%
First Midterm	25%
Second Midterm	25%
Final	25%

Dates for exams can be found in the schedule.

Homework

Logic is a skill, and it takes practice to get good at it. Homework will give you that practice.

Homework will be due twice a week. Most homework will be completed and submitted using the Logic 2010 software, and will be due by midnight the day before each class meeting. You will only get credit for problems

that are completed correctly.

Late homework submissions will receive 3/4 credit. This means that you have very good reason to complete your homework on time, but you also have very good reason, should you fail to complete your homework on time, to complete it late.

Exams

Exams will be closed-notes and closed-book and in class, completed without the aid of software. You will need to supply your own bluebook for the exam. There will be an opportunity to correct your midterm exams in order to improve your score.

Falling Behind

This is one of those courses where you cannot afford to fall behind. The homework is designed both to give you practice and as a check on your progress: if you cannot complete most of the homework problems most of the time, then you are falling behind.

If you are falling behind, talk to me NOW, not LATER.

I try to keep the course moving at an appropriate rate: I want *most* of you to feel constantly challenged, but not overwhelmed. **For some of you, this rate will be too fast, and you will be overwhelmed**. If this happens to you, please **come get help**. Come to my office hours, make appointments with me and with the tutors: we are friendly and we are here to help! Experience shows that struggling students who make use of our help do much better than those who do not.

Working Ahead

Some of you may find our rate of progress too slow, and begin to get bored. Again, come talk to me: we can only cover so much in class, but logic has a lot to offer.

Course Websites

There are two websites associated with this course:

> `http://www.davidsanson.com/logic` Here you will find this syllabus and the supplement to the textbook.
> `http://logiclx.humnet.ucla.edu` This is where you go to download the Logic 2010 software. It is also where you go to find homework assignments and check your scores on homework assignments and exams.

Getting in Touch

Email is the best way to reach me when I am not in my office. I am not always online and I cannot always respond immediately. If I have not responded in 24 hours please email me again, letting me know it is your second email (I won't take this as harassment). Include "112" in the subject line of your email and your full name somewhere in the body of your email, so I know who you are(!), and that the email is related to this class.

There is also a "Feedback" button within the Logic 2010 software, which allows you to send an email both to me and to the authors of the software program. This is a good way to report software bugs or suggested improvements to the software.

Disabilities

Any student needing to arrange a reasonable accommodation for a documented disability should contact Disability Concerns at 350 Fell Hall, 309-438-5853, http://www.disabilityconcerns.ilstu.edu.

Other Sources of Support

Life at college can get very complicated. Students sometimes feel overwhelmed, lost, experience anxiety or depression, struggle with relationship difficulties or diminished self-esteem. Many of these issues can be effectively addressed with a little help. Student Counseling Services (SCS) helps students cope with difficult emotions and life stressors. Student Counseling Services is staffed by experienced, professional psychologists and counselors, who are attuned to the needs of college students. The services are free and completely confidential. Find out more at http://counseling.illinoisstate.edu or by calling 309-438-3655.

Academic Misconduct

Academic integrity is expected and required. Students are expected to be honest in all academic work. A student's placement of his or her name on any academic exercise shall be regarded as assurance that the work is the result of the student's own thought, effort, and study.

If you have questions, refer to the Code of Student Conduct, B1 (Academic Integrity), which outlines unacceptable behaviors in academic matters, or talk to me. In certain circumstances (such as cheating or plagiarism) I may be required to refer a student to Community Rights & Responsibilities for a violation of Illinois State University's Code of Student Conduct.

General Education Objectives

Courses in the Quantitative Reasoning category of General Education address the following program objectives:

I. knowledge of diverse human cultures and the physical and natural world, allowing students to
   a. use theories and principal concepts, both contemporary and enduring, to understand technologies, diverse cultures, and the physical and natural world
   b. *explain how the combination of the humanities, fine arts, natural and social sciences, and technology contribute to the quality of life for individuals and communities*

II. intellectual and practical skills, allowing students to
   a. make informed judgments
   b. analyze data to examine research questions and test hypotheses
   c. *report information effectively and responsibly*

III. personal and social responsibility, allowing students to
   c. demonstrate ethical decision making
   d. demonstrate the ability to think reflectively

IV. integrative and applied learning, allowing students to
   a. identify and solve problems
   b. transfer learning to novel situations
   c. *work effectively in teams*

Primary outcomes are indicated in plain text and secondary outcomes are indicated in italics.