

## Philosophy 100.01: Logic and Critical Analysis Syllabus

PHIL 100, Section 01  
Fall 2018  
MW 8:30am – 10:00am  
Psychology 249

### Instructor Information

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Office Hours: MW 4:30pm – 5:30pm, or by appointment

### Course Description

Philosophy 100 is an introduction to logic. Logic is centrally concerned with *arguments*, good and bad. If an argument is a good one, its conclusion will logically follow from its premises, and we say that the argument is *valid*. It is not always easy to tell whether an argument is valid or not. Thus, we will develop formal techniques that will help us to determine the validity of arguments in a rigorous way. This will require the introduction of special formal languages, and we will learn how to translate between English and these formal languages. We will study two systems of logic: we will begin with *sentential logic*, and then move on to a richer system of logic, *quantificational logic*.

### Honor Code

In this class, the Honor Code is taken very seriously and all infractions will be reported. You may work together on the homework, but you may not *copy* each other's homework. (Copying will not help you prepare for exams.)

### Course Text

The text used for this course is *An Introduction to Symbolic Logic* by Terence Parsons. It is available for free through the software we will be using. The course will cover the first three chapters of the book. Time permitting, the course may also cover topics in Chapters 4 and 5.

### Logic 2010 (Course Software)

Homework assignments are submitted online using UCLA's "Logic 2010" program (<http://logiclx.humnet.ucla.edu/>). So a working computer with access to the internet is a requirement for this course. The program runs on both Windows and Mac. Students need to download, install, and register for this program ASAP. You will need to know your Wash U Student ID number and pick a password when you register with the system. Students who have not registered for the program after the first three days of class will be dropped from the course.

Because I will often work through problems in class using the Logic 2010 program, it is recommended, but not required, that students bring a laptop to class.

### **Course Website**

There are two websites for this course. The most important website for the course is the Logic 2010 student page, which I will call the “Program Site”:  
<https://logiclx.humnet.ucla.edu/Logic/Student/Course>.

Students must register for the Logic 2010 program before they can access the Logic 2010 course website. The Logic 2010 website lists the homework assignments and records student grades for those assignments. It also contains a section (under the “Documents” tab) with many helpful documents explaining how to use the Logic 2010 program. The second course website is the Canvas site for this course. The Canvas site will mainly be used for announcements and for posting documents.

### **Course Requirements**

Homework assignments: 30%  
Midterm 1: 20%  
Midterm 2: 20%  
Final: 25%  
Class attendance/participation: 5%

### **Homework**

Homework will typically be assigned each class period, and will be due ten minutes before the start of the next class. Thus, homework assigned on Monday will be due by Wednesday at 8:20am, and homework assigned on Wednesday will be due by Monday at 8:20am. Late homework assignments receive no credit unless a valid excuse is communicated (if possible) well in advance of the deadline for the assignment.

Homework assignments can be accessed through the Logic 2010 program (by clicking on the “Assignments” button on the Main Menu) or by signing in to the Logic 2010 student page (i.e. the Program Site). Homework assignments must be submitted over the internet to the Logic 2010 database directly from the logic software. Please make sure that your computer is connected to the internet before submitting your assignment. Further instructions for using the program and for submitting homework to the database are available under the “Documents” tab on the Logic 2010 website. (Under the main “Documents” tab, click the “Program Documents” sub-tab, and then open the document titled “Saving, Submitting, and Backing Up.”)

### **Exams**

There will be two midterms and a final. The exams are open-note and open-book. You will NOT be able to use the software to take the exams.

### **Course Schedule**

In the first third of the course (up until the first midterm), we will cover a sentential logic with negation and conditional symbols. The second third of the course (up to the second midterm) will cover an expanded sentential logic with conjunction, disjunction, and biconditional symbols. In the final third of the course, we will study a richer logic with existential and universal quantifiers. Homework assignments will be made available based on how quickly we cover material in class, and will typically be released shortly after class ends on a given day.

The following is a *tentative* schedule. Any changes to this schedule will be announced in class and over email.

**August 27:** Introduction to the course; validity and invalidity  
**August 29:** Logical form; introduction to sentential logic with conditional and negation  
**September 3:** Labor Day (No class)  
**September 5:** Parsing and symbolizing with conditional and negation; truth tables  
**September 10:** Rules of inference for conditional and negation  
**September 12:** Direct derivations  
**September 17:** Conditional derivations; indirect derivations  
**September 19:** Subderivations  
**September 24:** Theorems  
**September 26:** Review for Midterm 1  
**October 1:** **Midterm 1**  
**October 3:** Conjunction, disjunction, biconditional  
**October 8:** Rules of inference for conjunction, disjunction, biconditional  
**October 10:** Derivations  
**October 15:** **Fall Break (No class)**  
**October 17:** Derived rules of inference  
**October 22:** More derived rules of inference  
**October 24:** Truth tables; soundness and completeness  
**October 29:** Introduction to quantificational logic  
**October 31:** Review for Midterm 2  
**November 5:** **Midterm 2**  
**November 7:** Parsing sentences in quantificational logic  
**November 12:** Rules of inference for quantifiers  
**November 14:** Derivations in quantificational logic; Universal derivations  
**November 19:** Quantifier negation rules; invalidity in predicate logic  
**November 21:** **Thanksgiving Break (No class)**  
**November 26:** Many-place predicates  
**November 28:** Interchange of equivalents; biconditional derivations  
**December 3:** Derived rules for quantifiers  
**December 5:** Review (**Last day of class**)  
(Time permitting, we will cover some additional topics, including identity and its associated rules, logical paradoxes, and potential counterexamples to our inference rules)  
**Final Exam:** December 13, 8:00am – 10:00am