PHIL 120: SYMBOLIC LOGIC I
Fall 2019

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Course Description and Course Objectives

In this course, we will learn how to determine whether arguments that can be represented in first-order predicate logic are deductively valid. To this end, we will learn how to symbolize arguments formulated in English by learning how to symbolize the English sentences that constitute the premises and conclusions of these arguments; we will learn the rules of a natural deduction system and learn how to apply those rules to determine the logical status of any argument symbolized in accordance with those rules; and we will also learn semantic methods for determining validity and invalidity. Those who acquire the knowledge and skills taught in this course will be able to distinguish between good and bad reasoning in the most rigorous way possible.

[Prerequisites: Phil 10 or consent of instructor.]

Required Text

Terence Parsons, *An Introduction to Symbolic Logic* (LogicText). The text is free and online.

The text may be accessed through the Logic 2010 computer program (see below).

Course Units and Reading Assignments

Note: This is the *order* in which we will be covering the relevant material. The unit numbers do *not* correspond to the lectures.

Unit 1: Introduction to Deductive Logic
        Reading: LogicText, Chapter 0 (Note: Section 1 of Chapter 0, on Deductive Reasoning, is inaccurate and misleading. You will learn why in the first lecture.)

Unit 2: Parsing in the Language of Chapter 1
　　　Reading: LogicText, Chapter 1, Section 1

Unit 3. Symbolization in the Language of Chapter 1
　　　Reading: LogicText, Chapter 1, Sections 2 and 3

Unit 4. Derivations in the System of Chapter 1
　　　Reading: LogicText, Chapter 1, Sections 4-10 (**Skip the first shortcut in Section 9 – In this course, I do not permit the use of more than one justification per line.**)

Unit 5: Parsing in the Language of Chapter 2
　　　Reading: LogicText, Chapter 2, Section 1

Unit 6. Symbolization in the Language of Chapter 2
　　　Reading: LogicText, Chapter 2, Sections 2 and 3

Unit 7. Derivations in the System of Chapter 2
　　　Reading: LogicText, Chapter 2, Sections 4 and 5 (**Please note that we will __not__ be using abbreviated derivations in this course. We will also avoid the use of Theorems as Rules. We will introduce __only__ one Derived Rule, CDJ, and you will not be permitted to use other Derived Rules. The textbook uses all of these shortcuts for convenience, but you are __not__ permitted to use them.**)

Unit 8. Truth-Value Analysis of Sentences and Arguments
　　　Reading: LogicText, Chapter 2, Sections 10-11

Unit 9. Parsing in the Language of Chapter 3
　　　Reading: LogicText, Chapter 3, Sections 1 and 2

Unit 10. Symbolization in the Language of Chapter 3
　　　Reading: LogicText, Chapter 3, Sections 4 and 5

Unit 11. Bondage and Freedom
　　　Reading: LogicText, Chapter 3, Section 3

Unit 12. Derivations in the System of Chapter 3
　　　Reading: LogicText, Chapter 3, Sections 6-9 (**Please note that we will __not__ be using abbreviated derivations in this course. We will introduce four forms of the Derived Rule QN, but you will not be permitted to use other Derived Rules. The textbook uses them for convenience, but you are __not__ permitted to use them.**)

Unit 13. Invalidity: Counterexamples
　　　Reading: LogicText, Chapter 3, Section 10

Unit 14: <u>Parsing in the Language of Chapter 4</u>
Reading: LogicText, Chapter 4, Section 1

Unit 15. <u>Symbolization in the Language of Chapter 4</u>
Reading: LogicText, Chapter 4, Section 2

Unit 16. <u>Derivations in the System of Chapter 4</u>
Reading: LogicText, Chapter 4, Section 3 (**Please note that we will <u>not</u> be using abbreviated derivations in this course. The textbook uses them for convenience, but you are <u>not</u> permitted to use them.**)

Unit 17. <u>Invalidity: Counterexamples</u>
Reading: LogicText, Chapter 4, Section 9

Course Requirements

* Homework: 20%   [for details, see below]
* Mid-Term: 30%   [in class, open book, October 28]
* Final: 50%   [in class, open book, December 13, 8:00am-11:00am]

<u>Blue Books</u>
You will need to bring blue books to the mid-term and final examinations.

<u>Homework</u>
There will usually be two or three homework assignments per week. There will be no homework assignment due on October 28 (the day of the midterm).

Late assignments will not be accepted unless a valid excuse is communicated to me (if possible) substantially before the assignment is due. [For how to submit homework assignments for credit, see <u>Computer Program: Logic2010</u> below.]

<u>Computer Program: Logic 2010</u>

There is a computer program associated with the course. **You are *not* permitted to download the program on a *public* computer, such as a computer in Geisel Library**. In order to use the program, you need to download, install, and run Logic 2010 on a personal computer, Windows PC or Mac, that has access to the internet. Instructions for downloading, installing, and running Logic 2010 are available at the **LOGIC 2010 PORTAL**:

http://logiclx.humnet.ucla.edu/

(**Make sure you follow ALL the instructions before and during downloading**. **You need to know your UCSD Student ID number and pick a Logic Password in order to register as a user. DO NOT FORGET YOUR LOGIC PASSWORD.**)

Homework assignments are accessible through the program (by clicking on "Assignments" on the Main Menu) or by clicking on *Logic Student Assignments and Scores* on the LOGIC 2010 PORTAL.

[Note that when you authenticate, you will be asked to Select the Course. Please select: **UCSD – Philosophy 120 2019F**.]

[Note also that you must register as a user by downloading the program to your computer before you are able to gain access to the homework assignments.]

Homework assignments MUST be submitted OVER THE INTERNET to the Logic 2010 database directly. So, make sure that your computer is connected to the internet before you submit your homework to the database. Your work will be automatically recorded in the database, which is maintained by programmers at UCLA.

Instructions for using the program and for submitting homework to the database are available once you start running the program. Please read the relevant *Logic 2010 Documents*. To get access to the *LogicText*, go to the Assignment View Student Website (this is the webpage you get by clicking on *Logic Student Assignments and Scores* on the LOGIC 2010 PORTAL), click on *Documents*, and then, on the next webpage, click on *Program Documents*. The *Program Documents* page contains links to all the chapters of the *LogicText*, as well as links to pages that explain how to use the various modules in the computer program.

Further Logic 2010 Program Instructions

Please follow the downloading and registration instructions on the logic syllabus carefully. Also remember that you are registering for the **Fall 2019** version of **Philosophy 120** at **UCSD**, not for any previous version of Philosophy 120 (or different course) at a different institution.

Once you have registered and are able to reach the Main Menu, make sure you are connected to the internet and click on "Assignments". This will take you to the "Authenticate for Logic Software Project" webpage. Choose "UCSD" and enter your UCSD Student ID and Logic password. Then click "Submit". This brings up the "Choose Course" webpage. Choose "UCSD - Philosophy 120 2019F" (the "F" is for "Fall"). This brings up the "Assignment View: Student Website" webpage. If you scroll down the page, you will see the First Assignment (A1) problem set. Jot down the names of the Parsing problems in A1. (The problems may be accessed from the Logic 2010 Main Menu, which includes a Parsing Module.) At the top of the "Assignment View: Student Website" page, you will see a link to "Documents". Before starting and submitting the first assignment, please click on "Documents". Then click on "Program Documents". This brings up a webpage with a number of links. Please read "(08) Using Logic 2010" and "(14) How The Parsing Module Works". The "Using Logic 2010" link takes you to a document that teaches you how to use the program and, importantly, how to Submit your assignment to the UCLA database. (You need to Submit your assignments in order to get credit for your

work.) The "How The Parsing Module Works" teaches you how to use the Parsing Module that appears on the Main Menu. Once you've read these documents, go back to the Main Menu, click on "Parsing", and follow the instructions for completing the assignment and submitting it to the database for credit. (Remember that you must be connected to the internet in order to submit your assignment.)

Please do not forget to SAVE and BACKUP your work before QUITTING the program.

Important Notes

> * The Academic Honor Code must be observed in this course. Anyone caught cheating will receive an automatic **F** in the course, and will be referred to the Academic Integrity Office for the appropriate penalty.

> * **Laptops and other electronic devices may be used in class as a means of accessing the Logic 2010 computer program and as a means of taking notes on the lecture, but may not be used for any other purpose. It is highly recommended that you use paper and pencil to take notes. Research suggests that retention and understanding are facilitated through note-taking by hand, rather than through computer-based note-taking. It is highly recommended that you use paper and pencil (not pen) for your midterms and the final. Please remember to bring blue books to all exams.**

> * If accommodations are needed for a disability, please contact the Office for Students with Disabilities (https://osd.ucsd.edu/contact/index.html), obtain a letter of accommodation, and notify me as soon as possible.

> * If you need psychological assistance at any point during your time at UC San Diego, please contact Counseling and Psychological Services (CAPS): https://wellness.ucsd.edu/CAPS/about/Pages/contact.aspx

> * If any course requirement conflicts with a religious requirement or university-related obligation, please notify me ahead of time as soon as possible.