Introduction to Mathematical Logic
PHIL 155
M/Tu/W/Th/F 11:30 - 1:00pm
Caldwell 103

Instructor
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Office Hours: After class every day until 1:30pm. There will be additional office hours a couple days before the exams and by appointment.

Course Description
In this course we will learn how to determine whether or not an argument it is deductively valid. To this end, we will learn how to symbolize arguments formulated in English and the rules of a logical system, which will allow you to show the validity of arguments by constructing derivations. We will also learn some methods for showing that an argument is invalid.

Course Text
Our text is "An Introduction to Symbolic Logic" by Terence Parsons. It is available online for free. I strongly recommend that you download the Introduction and Chapters 1-3 as soon as possible.

Course Websites
There are two main websites for the course. The first is the Logic 2010 student page, found at https://logiclx.humnet.ucla.edu/Logic/Student/Course, where you will find the homework assignments. The other website is the UNC Sakai site for this course. The Sakai site will be used mainly for announcements, sending mass email, and occasionally for posting files.

To get access to the textbook, along with many other helpful documents, go to the Logic 2010 student page. Click on the "Documents" tab, and then on the "Program Documents" tab a bit further down. We will be covering Chapters 1-3 (and the introduction) in this class.

Course Requirements
- Homework: 20% of final grade.
- Exam 1: 20% of final grade.
- Exam 2: 20% of final grade.
- Final Exam: 40% of final grade.

Homework
There will typically be a homework assignment every other night, due ten minutes before lecture. Late assignments will not be accepted unless a valid excuse is communicated to me (if possible) substantially before the assignment is due.

Homework assignments are accessible 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. Homework assignments must be submitted over the Internet to the Logic 2010 database directly from the logic software. (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. Further instructions for using the program and for submitting homework to the database are available once you start running the program.

Software
There is a computer program associated with the course: Logic 2010. It is available for download at https://logiclx.humnet.ucla.edu/Logic/Download. Make sure you follow all the instructions! You will need to know your UNC Student ID number and pick a logic password when you register with the system. In order to access the homework assignments, you must first register as a user of Logic 2010 by running the program and signing in.

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

Computers in Class
Laptops are encouraged for this class! It will be very helpful to be able to work through the problems we do in class in Logic 2010 so that you become familiar with the software.

Schedule
This is the order in which we will be covering the relevant material; the unit numbers do not correspond to the lectures. All chapter and section references are to the Parsons textbook.

Chapter I
1. *Logic as a Formal Language*; Reading: Introduction.
2. *Symbolizations*; Reading: Chapter 1, Sections 1-3.
3. *Derivations;* Reading: Chapter 1, Sections 4-10.

Chapter II
4. *Symbolizations*; Reading: Chapter 2, Sections 1-3.
5. *Derivations;* Reading: Chapter 2, Sections 2-5 and 8 & 9.
6. *Truth-Value Analysis of Sentences and Arguments;* Reading: Chapter 2, Sections 10 & 11.

Chapter III
7. *Symbolizations;* Reading: Chapter 3, Sections 1 & 2 and 4 & 5.
8. *Bondage and Freedom;* Reading: Chapter 3, Section 3.
9. *Derivations;* Reading: Chapter 3, Sections 6-9.
10. *Invalidity: Counterexamples*; Reading: Chapter 3, Section 10.