PHIL 2310 (Honors)　　　　LOGIC　　　　SPRING 2015

INSTRUCTOR	OFFICE	E-MAIL	OFFICE HOURS
Joel Velasco	Eng/Phil 265G	joel.velasco@ttu.edu	M,W 2:00-3:00

Class meets at 10:00 MWF in Eng/Phil 151

MAIN COURSE OBJECTIVES
1. To help you focus on *arguments* rather than *conclusions*, on reasons rather than opinions.
2. To teach you standards for *evaluating* arguments, for finding out whether they are good or bad.
3. To help you apply the standards to the evaluation of real-life arguments proposed by others.
4. To help you apply the standards to the construction of your own real-life arguments.
5. To fight superficiality by emphasizing quality rather than quantity.
6. To help you develop valuable skills by emphasizing rigorous thinking, clarity, and precision.

Texts:
1) *The Universal Computer: The Road from Leibniz to Turing* by Martin Davis
NOTE: This exact same book was reprinted with the title *Engines of Logic: Mathematicians and the Origin of the Computer.* Either version is acceptable. There is also a version released in 2012 – the 'Turing Centenary Edition' which I believe is slightly updated, but it makes no difference whether you have this version or not.
2) *Language, Proof and Logic* (2nd edition), text and software package; by Jon Barwise and John Etchemendy. It is slightly cheaper to purchase just a pdf of the textbook along with the software package (http://press.uchicago.edu/ucp/books/book/distributed/L/bo12734345.html)

WARNING: With respect to LPL, you cannot simply use the book or a pdf of a friend or even your own used copy of the textbook. You must have a new, unique CD package. In order to complete your homework, you will need to register with The Grade Grinder, using the Registration ID# that comes with the software CD in the book-package. So a used copy of the book-package will not do if the previous owner has already registered: different people need to use different registration numbers.

GRADING
- There will be (roughly) 8 homework assignments throughout the course. Sometimes they will be written assignments to be turned into class, sometimes problems to be completed and turned in online to the grade grinder, and often both. The sum of all of the homeworks is worth 20% of your final grade (120 points).
- There will be two exams, each worth 25% of your grade. Each exam will have an in-class and a take-home component (150 points each).
- There will be a final exam worth 30% of your grade (180 points).
- Final grades will follow a standard distribution so that 89% is a B+, 90% an A-, and 93% an A for example. However, there may be a curve in the sense that getting 85% will guarantee you AT LEAST a B, however, it may a B+ or even higher depending on the final distribution. However, there will be no curve *downward*. So if the lowest grade in the class 93, then everyone will earn an A.
- There is a blackboard site for the course so that you will be able to keep track of your grade up to any given point.

> *Attendance at lectures is mandatory (though not graded). Your likelihood of failing the class increases substantially with every lecture you miss. If you think you will miss more than three lectures this semester, this is probably not the class for you.*

Other Matters:

   Academic Integrity: Cheating and plagiarism are, of course, prohibited in this class just as they are in all university classes. They will be taken particularly seriously in this class, and any cases that may arise will be treated in a manner consistent with University policy. These two violations of academic integrity are each defined in the section of the Texas Tech online official publications titled "Academic Integrity." Plagiarism is there described as follows:
   "'Plagiarism' includes, but is not limited to, the appropriation of, buying, receiving as a gift, or obtaining by any means material that is attributable in whole or in part to another source, including words, ideas, illustrations, structure, computer code, other expression and media, and presenting that material as one's own academic work being offered for credit." http://www.depts.ttu.edu/studentconduct/academicinteg.php
   You can find excellent explanations of what specifically constitutes plagiarism as opposed to proper citation, and also tutorials on how to avoid plagiarism at the following websites: http://www.dartmouth.edu/~writing/sources/
   http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml

   Note: If, at any time, you are at all unclear about what counts as plagiarism, or about boundaries such as between working together in a group on homework (encouraged) and copying work from another person (prohibited), please just come by and ask me about it. You do not want to be confused or careless about this serious matter.

   Classroom Civility: It should go without saying that disruptive behavior is not considered acceptable in the classroom. In addition, the study of philosophy, like any other substantial subject, requires a certain level of concentration. And everyone's attention and concentration is facilitated by an absence of unnecessary distractions within classroom. In concrete terms, this means you should turn off phone ringers before class starts; keep them in your bag or pocket. We also have the special problem in our class that since much of our classwork must be done on a computer, some of you may want to have and use your laptops in class. This is allowed if your computer is used only for class purposes. I do not encourage this as it is far too easy to get distracted. If I find that you are using a computer (or phone or any other device) during class for non-class purposes I will immediately ask you to stop. Despite what you might think, repeated empirical studies validate the apparently non-obvious truth that people are bad at multi-tasking and trying to do multiple things at once (like read an email while paying attention to lecture) just doesn't work very well.

Students with Disabilities: Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification from Student Disability Services during the instructor's office hours. Please note instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, you may contact the Student Disability Services office in 335 West Hall or 806-742-2405.

How this class differs from a generic 2310:

In one sense, the content of the course will not differ much. In particular, the weekly homework, tests, and final exam material would be roughly the same. Thus it will not be 'harder' in that sense. However, I plan on spending less time in class rehearsing practice problems and instead, as we go along, I will go deeper into the material into more philosophically interesting aspects of logic. We will use a popular science book *Engines of Logic: Mathematicians and the Origins of the Computer* as our launching off point for many of these discussions. The book contains a number of chapters with historical vignettes introducing particularly important concepts and stages in the history of computer. One way to think about logic is that it is a quest to understand what can be formalized (and automated) and what can't be. We can start with Leibniz's dream (and the dream of many others) to have a universal language for science and mathematics and a universal method of resolving all questions. Throughout the course we learn more and more powerful techniques for formalizing and understanding more and more arguments, but by the end of the course we can actually understand things about the limits of such methods and the limits of computation in general. Formally proving such things rigorously requires advanced knowledge beyond the class. But I will not test you on this material, rather, just introduce it in an informal (yet precise and correct) way as an introduction to this fascinating subject. It naturally comes up in the background and is mentioned in passing throughout the LPL textbook that we are using. Typically, I simply ignore this. This semester I plan to not ignore it (and add even more such comments).

This plan should be much more interesting for you than the typical logic class, but it does require that you have the discipline and motivation to read this material on your own when it is not required for homework or exams and also that you have the skills to do the regular class work on your own time without discussion sections (which is when many students do their work in the large lecture classes). Thus I think it is perfect for an honors course.