Symbolic Logic

Philosophy 202

Winter 2017

Meeting Time and Location
MWF 9:20–10:30 a.m.
Old Main 301

Professor: Dr. Brandon Polite
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Office Hours
MWF 10:30–11:30,
& by appointment

Course Description

This course provides a detailed study of the principles of deductive logic with emphasis on the identification of valid and invalid arguments, and the fundamentals of sentential logic and quantification theory.

By the end of the term, you should be able to...

- **Translate** sentences from English into first-order logical notation.
- **Evaluate** arguments for validity, sets of sentences for consistency, and pairs of sentences for logical equivalence.
- **Think** more carefully about the language you use and arguments you make or encounter.

Requirements

Students are required to read assigned material carefully, watch the assigned lectures, do the assigned problems, and attend class and participate regularly.

This is what is known as a "flipped" course. Lectures explaining and demonstrating the concepts and procedures you will be utilizing will not be presented in class; instead, they will be posted as videos on Google Classroom. (Short online quizzes will accompany each lecture.) Class time will be devoted exclusively to going over homework problems (as well as a few philosophical discussions). Homework will not be graded. Instead, you will be responsible for doing the assigned problems prior to our class meetings and for putting your answers on the board when called upon. This will allow us to address and correct any conceptual or technical issues you might be struggling with when doing the problems on your own. Participation will consequently constitute a significant component of your final grade. Your understanding of the material will be tested by means of five quizzes (one for each unit) and a cumulative final exam.

Grades

Attendance and Participation	25%
Short Lecture Quizzes	5%
Quizzes (5 total)	50%
Final Exam	20%

grading scale

A+	100 – 97.7	C+	79.9 – 77.7	F	59 – 0
A	97.6 – 93	C	77.6 – 73.4		
A-	93.3 – 90	C-	73.3 – 70		
B+	89.9 – 87.7	D+	69.9 – 67.7		
B	87.6 – 83.4	D	67.6 – 63.4		
B-	83.3 – 80	D-	63.3 – 60		

course details

Website: Accessible via https://classroom.google.com

Designation: Satisfies the old QL and the new QSR requirement.

Text: There is no required text for this course.

Syllabus

1. Truth-Functional Logic		
1/6	**F**	Watch: Lecture on Symbols and Translation Problems: Translations (Homework 1)
1/9	**M**	Watch: Lecture on Truth Tables Problems: Truth Tables (Homework 2, Parts I and II)
1/11	**W**	Read: Aristotle, *De Interpretatione* 9 Problems: Translations and Truth Tables (Homework 2, Part III)
1/13	**F**	Read: W. V. Quine, "What Price Bivalence?" Watch: Lecture on the Short-Cut Method Problems: Translations and Truth Tables (Homework 2, continued)
1/16	**M**	**Quiz 1**
2. Truth Trees		
1/18	**W**	Watch: Lecture on Truth Trees Problems: Truth Trees (Homework 3, Part I)
1/20	**F**	Problems: Truth Trees (Homework 3, Part II)
1/23	**M**	Problems: Truth Trees (Homework 3, Part III)
1/25	**W**	Problems: Truth Trees (Homework 3, continued)
1/27	**F**	**Quiz 2**
3. Generality		
1/30	**M**	Watch: Lecture on Instantiation Rules for Truth Trees Problems: Truth Trees (Homework 4, Part I)
2/1	**W**	Problems: Truth Trees (Homework 4, Part II)
2/3	**F**	Problems: Truth Trees (Homework 4, continued)
2/6	**M**	Watch: Lecture on Interpretation and Counterexamples Problems: Interpreting Counterexamples (Homework 5)
2/8	**W**	**Reading Day (No Class)**
2/10	**F**	Read: W. V. Quine, "Meaning and Truth" Problems: Interpreting Counterexamples (Homework 5, continued)
2/13	**M**	**Quiz 3**

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Readings

Despite lacking a required text, this course closely tracks the first five chapters of Richard Jeffrey's *Formal Logic: Its Scope and Limits*. If you believe reading this text would be beneficial, the first two chapters are available in-full on Google Books (link). The text will also soon be on reserve in the library.

The few readings that I have assigned you can be accessed by clicking the links embedded in the M's, W's, and F's to the left of each on the syllabus. You can also access them via Google Drive in the shared "Symbolic Logic Readings" folder: https://drive.google.com. I expect you to print out each reading and bring it to class with you.

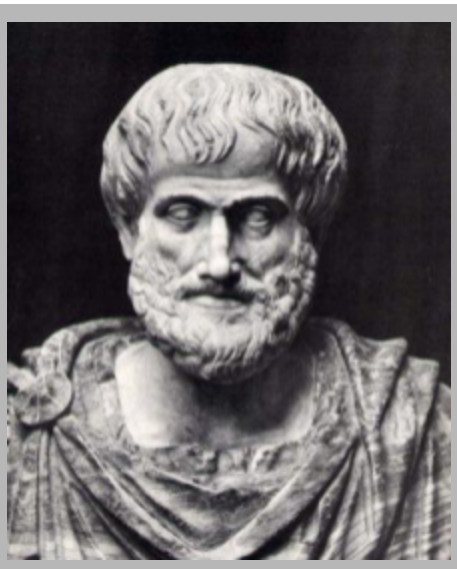
Note. You can only access the readings if you are logged in to your Knox email account, which you can access via https://my.knox.edu.

Lecture Quizzes

You are to complete a short online quiz for each lecture prior to the class meeting for which it has been assigned. Lecture quizzes submitted after class has begun **WILL NOT BE ACCEPTED**. The purpose of these quizzes is to ensure that you have watched the lecture and so that I can discern whether there are any common difficulties with the material that will need to be addressed in class. The quizzes will be available at the same time as the lectures on Google Classroom.

Honor Code

This course, as any other at Knox, operates within the parameters set by the Honor Code. Please note that I encourage you to talk through all course material with one another, including the homework problems, outside of class. Quizzes of both types, however, are not collaborative.



Aristotle (384–322 B.C.E.) is arguably the most influential thinker in the history of the world (source). In addition to being the **Father of Logic**, he made significant and frequently revolutionary contributions to many areas of inquiry, including biology, physics, metaphysics, and moral and political philosophy. He was also a student of Plato's, tutor of Alexander the Great, and founder of the Lyceum in Athens.

4. Multiple Generality			
2/15	**W**	Watch: Problems:	Lecture on Translation Translations (Homework 6)
2/17	**F**	Watch: Problems:	Lecture on Trees and Infinite Counterexamples Truth Trees (Homework 7, Part I)
2/20	**M**	Problems:	Truth Trees (Homework 7, Part II)
2/22	**W**	Problems:	Truth Trees (Homework 7, continued)
2/24	**F**	**Quiz 4**	
5. Identity			
2/27	**M**	Watch: Problems:	Lecture on Identity Truth Trees (Homework 8, Part I)
3/1	**W**	Problems:	Truth Trees (Homework 8, Part II)
3/3	**F**	Read:	Gottlob Frege, "On Sense and Reference"
3/6	**M**	Read:	Bertrand Russell, "On Denoting"
3/8	**W**	**Quiz 5**	
Final Exam			
TBD	**?**	Optional Review Session	
TBD	**?**	**Final Exam**	

late assignments

If you know in advance that you won't be able to take a quiz on the date it will be given, get in touch with me as far in advance as possible to arrange an alternate time to take it.

If you miss a quiz due to a verifiable illness, you can arrange to make it up as soon as you are well enough to do so without penalty.

If you miss a quiz without a valid and verifiable excuse, you will receive a penalty of 10 points per day until you arrange to make it up.

accommodations

If you have a documented disability and you need a reasonable accommodation made for you in this course, such as extended quiz time, please consult with me immediately at the beginning of the term so we can design a solution that will help you be successful in the class. To receive the proper documentation, you should get in touch with Stephanie Grimes (sgrimes@knox.edu) in the CTL as soon as possible .

"Logic is the beginning of wisdom . . . not the end."

—Mr. Spock