LOGIC AND PHILOSOPHY

PHIL 220, SPRING 2019

Dr. Devin Sanchez Curry dcurry@wooster.edu

Class sessions: Scovel 105, M/W/F 9–9:50 Office hours: Scovel 002, M–Th 10–10:50, T/Th 4–5

This course is an introduction to symbolic logic: the science of correct reasoning. We will spend the first half of the course with our noses to the grindstone, studying sentential logic and becoming proficient at constructing truth tables and proofs. Our hard work will be rewarded with a refined capacity to recognize and diagnose good and bad arguments. The second half of the course will introduce monadic predicate logic, and also provide opportunities to apply our newfound proficiency with symbol systems to venerable philosophical debates concerning truth, the existence of God, free will, and the nature of logic itself.

Required book

Virginia Klenk, *Understanding Symbolic Logic* 5th Edition (Pearson Prentice Hall 2008)

Brief grading breakdown

Eight beginning of week quizzes: 10% (due most Monday mornings)
Eleven end of week quizzes: 20% (due most Friday nights)
Two short essays: 20% (due 2/4 and 4/1)
Midterm exam: 20% (3/8)
Final exam: 30% (5/7, 9am)

Brief schedule

Week 1: Reasoning correctly
Sentential logic
Week 2: Sentences
Week 3: Truth tables I: Symbolizing true and false sentences
Week 4: Truth tables II: Reading philosophy and testing validity
Week 5: Truth tables III: Logical properties
Week 6: Proofs I: Inference rules
Week 7: Proofs II: Replacement rules
Week 8: Proofs III: Conditionals and reductios
Philosophical interlude
Week 9: Truth, God, and freedom
Predicate logic
Week 10: Singular sentences and quantifiers
Week 11: Symbolizing categorical sentences
Week 12: Quantifier form
Week 13: Predicate proofs
Philosophy of logic
Week 14: Logic and psychologic

Course Learning Goals

This course is designed to help you work towards mastering the following skills.

Interpretation and Analysis

Students should be able to analyze, interpret, and understand philosophical texts and discourse. Success in achieving this objective will be measured by a student's ability to:

- Identify and describe the aim(s), strategy, assumption(s), and argument of a text.
- Recognize what is "at stake", and separate understanding and evaluating a text.

Argumentation

Students should be able to effectively identify, evaluate, and formulate arguments. Success in achieving this objective will be measured by a student's ability to:

- Identify, extract, and summarize arguments from a text.
- Employ formal logic to evaluate and formulate arguments.
- Formulate strong objections to a given argument.
- Formulate well-reasoned arguments for and against a position.

Philosophical Knowledge and Methodology

Students should be able to demonstrate a high degree of fluency with the major traditions, figures, concepts, and methods of philosophy. Success in achieving this objective will be measured by a student's ability to:

- Explain and use the fundamental concepts of logic.

Philosophical Independence

Students should aim for independence in their thinking in order to be able to form their own philosophical views using the skills mentioned above. Success in achieving this objective will be measured by a student's ability to:

- Support an original philosophical position with well-reasoned argumentation.

Policies

Extensions

If you need an extension of the deadline for a short essay, please ask in writing in advance of the deadline (a brief email is fine); I will grant a 48-hour grace period, without penalty, no questions asked. If you need more than two extra days, you must meet with me during office hours.

Plagiarism

Exercise academic integrity, as defined in *The Scot's Key*. Plagiarism will result in an automatic zero on the plagiarized assignment, as well as an official report. If you have questions about what constitutes plagiarism, please consult *The Scot's Key* and/or ask me.

Accommodations

If you have good reason to be exempt from (or subject to a modified version of) any policy on this syllabus, please let me know. We'll work something out. Students with diagnosed disabilities should contact Kaylynne Mahone, Assistant Director of the Learning Center (ext. 2595; kmahone@wooster.edu), to secure accommodations.

Detailed grading breakdown

Beginning of week quizzes (10%)

Online quizzes will be due by the beginning of class on 1/28, 2/11, 2/18, 2/25, 3/4, 4/8, 4/15, and 4/22. These beginning of week quizzes will test both your comprehension of that day's assigned textbook reading and your cumulative understanding of symbolic logic. Your lowest three beginning of week quiz grades will be dropped. The remaining five quizzes will each be worth 2% of your total grade.

End of week quizzes (20%)

Additional online quizzes will be due by 11:59 pm on 1/18, 1/25, 2/1, 2/8, 2/15, 2/22, 3/1, 4/5, 4/12, 4/19, and 4/26. These end of week quizzes will test you on the material covered during the week. Your single lowest end of week quiz grade will be dropped. The remaining ten quizzes will each be worth 2% of your total grade.

First short essay (10%)

A 250–500 word essay will be due on 2/4. Reconstruct a valid argument (distributed by me) in logical form. Then explain whether you think the argument is sound, and why.

Midterm exam (20%)

The midterm exam on 3/8 will test your ability to construct proofs in sentential logic.

Second short essay (10%)

A 250–500 word essay will be due on 4/1. Essay prompts (concerning arguments for and against the existence of God and the freedom of the will) will be distributed on 3/25.

Final exam (30%)

The final exam on 5/7 will have two parts. Part I (worth 20% of your total grade) will test your ability to construct proofs in monadic predicate logic. Part II (10%) will prompt you to write a 250–500 word essay on the relationship between logic and thought.

Extra credit

You will earn ¼ point of extra credit—up to a maximum of 5 points—each time you alert me to an outright error in a quiz or the Klenk textbook.

Participation

Participation will be the decisive factor if you end up straddling two grades (e.g. B+/A-).

Some tips

Practice, practice, practice. Participate in class. Before taking beginning of week quizzes, read—and, if necessary for comprehension, reread—the relevant unit in the Klenk textbook. Before taking end of week quizzes, complete the exercises at the end of the relevant unit(s). Come to office hours for help if anything is tripping you up.

Detailed schedule (subject to change)

(BQ) = Beginning of week quiz (due by 9am on Monday)
(**EQ)** = End of week quiz (due by 11:59pm on Friday)

1/14: Fallacies, formal and informal
1/16: Reasoning and symbol systems
Reading: Klenk, Unit 1
1/18: *No class.* **(EQ)**

Sentential logic

1/23: Sentences
Reading: Klenk, Unit 2
1/25: Sentential logic **(EQ)**

1/28: Truth values **(BQ)**
Reading: Klenk, Unit 3
1/30: Symbolizing sentences
Reading: Klenk, Unit 4
2/1: Symbolizing complex sentences **(EQ)**

2/4: Reading philosophy through a logical lens **(Essay 1 due)**
2/6: Truth tables
Reading: Klenk, Unit 5
2/8: Testing validity **(EQ)**

2/11: Tautologies, contradictions, and contingencies **(BQ)**
Reading: Klenk, Unit 6
2/13: Implication, equivalence, and consistency
2/15: Using truth tables to do philosophy **(EQ)**

2/18: Simple proofs **(BQ)**
Reading: Klenk, Unit 7
2/20: Inference rules
2/22: Complex proofs **(EQ)**

2/25: Replacement rules **(BQ)**
Reading: Klenk, Unit 8
2/27: Simple proofs with replacement
3/1: Complex proofs with replacement **(EQ)**

3/4: Conditional proofs and reductios **(BQ)**
Reading: Klenk, Unit 9
3/6: Truth and proof **3/8: Sentential exam**

Philosophical interlude

3/25: Truth
Reading: Leibniz, "The Nature of Truth"
3/27: God
Reading: Herrick, "Does God Exist?"
3/29: Freedom
Reading: Herrick, "Do We Have Free Will?"

Predicate logic

4/1: Sets **(Essay 2 due)**
4/3: Symbolizing singular sentences
Reading: Klenk, Unit 10
4/5: Quantifiers **(EQ)**
Reading: Klenk, Unit 11

4/8: Venn diagrams **(BQ)**
Reading: Klenk, Unit 12
4/10: Symbolizing categorical sentences
4/12: Venn diagram proofs **(EQ)**
Reading: Klenk, Unit 23

4/15: Complex subjects and predicates **(BQ)**
Reading: Klenk, Unit 13
4/17: Quantifier form
Reading: Klenk, Unit 14
4/19: Quantifier rules **(EQ)**

4/22: Proofs for pure quantifier arguments **(BQ)**
Reading: Klenk, Unit 15
4/24: Proofs for arguments containing truth-functional compounds
4/26: Proofs for quantifier theorems **(EQ)**

Philosophy of logic

4/29: Logic as the science of thinking
Reading: Kant, "Logic"
5/1: Anti-psychologism
Reading: Frege, "Thought"
5/3: Logic and psychologic
Reading: Haack, "Logic and Thought" **5/7: Final exam**