

Instructor: Sharon Mason



Introductory Logic

Fall XXXX

Course Description

Logic is the science of evaluating arguments. This class introduces students to both informal and formal logic. In this class, we will approach good reasoning as a skill that can be improved by study and, crucially, by practice.

We will begin our study with informal logic, starting with how arguments are constructed. We will focus on identifying the various parts of arguments and their logical relations (What is a conclusion? What are premises? What does it mean for one proposition to support another?). Next, we'll spend some time thinking about meaning and definitions (What is a sandwich, anyway? Why all the fuss about definitions?). We will also learn about many common reasoning errors or logical fallacies (anyone ever heard of a slippery slope argument? Or begging the question? It might not be what you think!). In the second part of the course, we will turn our attention to formal logic, beginning with categorical syllogisms and using Venn diagrams to test for validity. We will then proceed to propositional logic, where students will practice translating sentences from ordinary English to logic and will learn to test for validity by using truth tables and by natural deduction. In the final section of the course, we will study two topics in informal logic: analogical and causal reasoning.



"The essence of the independent mind lies not in what it thinks but in how it thinks."

Contact Information:

- Office Hours: M/W 1-3pm, SY009 and by appointment
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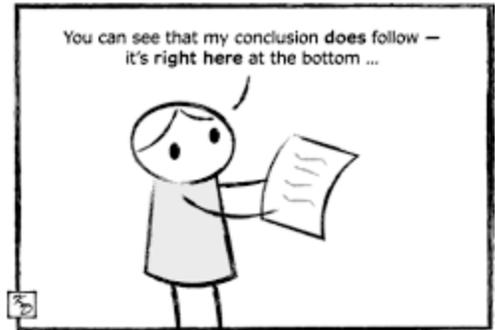
Course Objectives

Upon satisfactory completion of this course, a student should be able to:

- Analyze arguments by using both inductive and deductive tests
- Recognize informal fallacies
- Analyze syllogisms and test for validity using Venn diagrams
- Translate simple sentences into propositional logic
- Test for validity by the truth table method and by natural derivation
- Recognize basic methods of scientific reasoning

Course Texts:

- Hurley, Patrick J. *A Concise Introduction to Logic*. Thompson, Wadsworth. 2008.
- Any additional materials will be handed out in class or made available online through the course website.



**"The beginning of thought is in disagreement-- not only with others but also with ourselves."
— Eric Hoffer —**

Grading Scheme:

Attendance/Participation	10%
Homework Assignments	40%
Exams	50%

Classroom Conduct Statement

This course is designed to encourage you to think deeply and as we go along you will almost certainly encounter viewpoints that challenge your own beliefs. I encourage you to view these challenges as opportunities to learn about perspectives that may differ widely from your own and to practice the skill of interacting respectfully and sympathetically with someone, despite the fact that you may strongly disagree with their point of view. Although debate and critical analysis are encouraged, it should be clear that we will not discriminate against or criticize members of this classroom community based on gender, ethnic origin, sexual orientation, disability, or religion. Everyone is welcome here.

Plagiarism Statement

In the *Code of Student Rights, Responsibilities, and Conduct*, the Indiana University Faculty Council indicates that students may be disciplined for several different kinds of academic misconduct, which include: cheating, fabrication, plagiarism, interference, and violation of course rules. The penalty for cheating or plagiarism in this class is automatic failure of the course. Consider yourself warned. For more information about what plagiarism is and how to avoid it, go to <https://www.indiana.edu/~tedfrick/plagiarism/index2.html>

Attendance/Participation (10%)

Much of what you learn in this course will come from your time in the classroom. Unsurprisingly, students who do not attend class regularly will not benefit from the course as much as those who attend regularly. Attendance and active participation in the class are, therefore, required.

Attendance (5%): Each student may take up to 2 excused absences for any reason. Absences in excess of 2 will result in a deduction of 10% from your attendance/participation grade per absence. In cases of an emergency, sickness, death in the family, or other unforeseen event, I may grant additional excused absences provided that the student notifies me right away and provides appropriate documentation.

Participation (5%): Participation refers to your active involvement in the class through being prepared for class and engaging in classroom discussion. Visits to my office hours will also count toward your participation grade. Distracting behavior (chronic tardiness, surfing the web on a laptop or mobile device, etc.) will result in points off your participation grade.

“I try to encourage people to think for themselves, to question standard assumptions... Don’t take assumptions for granted. Begin by taking a skeptical attitude toward anything that is conventional wisdom. Make it justify itself. It usually can’t. Be willing to ask questions about what is taken for granted. Try to think things through for yourself.”

- Noam Chomsky -

Homework Assignments (40%)

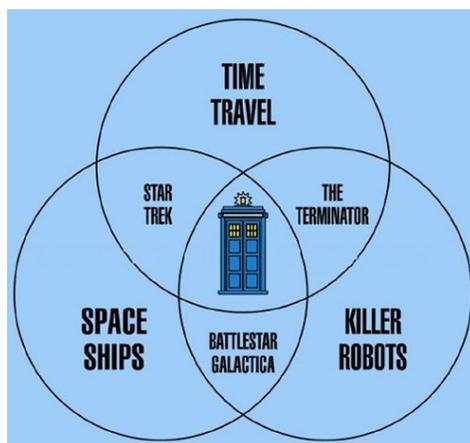
Learning logic requires practice, and homework assignments are essential to providing the practice you need to master this material. Expect to spend several hours a week on the readings and homework assignments. Homework will be collected and graded, and it will be essential to preparing you to do well on the exams.

Homework will either be due online or will be due at the beginning of class, depending on the assignment. No late work will be accepted without arranging an extension with the instructor *in advance* of the class period in which the homework is due.

Exams (50%)

There will be two in-class exams: a midterm (20%), and a final exam (30%). The exams will cover material from both the readings and the class lectures/discussions. The final exam will be cumulative and will be given during the scheduled final exam time.

Sci-Fi
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DIAGRAM:



Course Schedule

	Readings:	Assignments:
Week 1	Introduction & Chapter 1: Basic Concepts	HW
Week 2	Chapter 2: Language: Meaning and Definition Excerpts from Plato's Euthyphro,	HW
Week 3	Chapter 3: Informal Fallacies	HW
Week 4	Chapter 3: Informal Fallacies (continued)	HW
Week 5	In-Depth Argument Analysis Rebecca Goldstein, Plato at the Googleplex" Ch. 1	HW
Week 6	Chapter 4: Categorical Propositions	HW
Week 7	Chapter 5: Categorical Syllogisms	HW
Week 8	Chapter 6: Propositional Logic	Midterm Exam
Week 9	Chapter 6: Propositional Logic (continued)	HW
Week 10	Chapter 7: Natural Deduction in Propositional Logic	HW
Week 11	Chapter 7: Natural Deduction in Propositional Logic (continued)	HW
Week 12	Chapter 7: Natural Deduction in Propositional Logic (continued)	HW
Week 13	Chapter 9: Analogy and Legal and Moral Reasoning	HW
Week 14	Chapter 13: Hypothetical/Scientific Reasoning	HW
Week 15	Chapter 14: Science and Superstition	Final Exam

"Thinking is skilled work. It is not true that we are naturally endowed with the ability to think clearly and logically - without learning how, or without practicing."

— Alfred Mander —