

Introduction to Logic (PHIL 110)
Spring 2008

Wednesdays and Fridays 10:20–11:30
Zinzendorf 103

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& gladly by appointment

Course Description

In this course we will be studying arguments and what it takes for them to be *good* arguments. An *argument* is a series of statements (*premises*) put forward to establish the truth of a particular claim (the *conclusion*). Sometimes the premises of an argument are intended to *entail* or *guarantee* the truth of the conclusion—such an argument is called a *deductive* argument. A *valid* argument is a deductive argument in which the premises really do entail its conclusion (that is, when it's impossible that the premises be true and the conclusion false). An *invalid* argument is one in which the truth of the premises does not guarantee the truth of the conclusion.

We will learn how to test and prove whether deductive arguments are valid or invalid. Sometimes it is obvious whether an argument is valid, but often it is not. The complexities and ambiguities of English (and other languages) can obscure the reasoning behind arguments. We will use logic symbols to represent English arguments and make reasoning behind the argument easier to evaluate.

Course Goals

- Students will strengthen their ability to reason and evaluate arguments.
- Students will learn how to translate between English and the language of logic.
- Students will become experienced at constructing logic proofs.
- Students will practice the types of reasoning tested on graduate school entrance exams, such as the LSAT (for law-school) and GMAT (for business school).

Required Text

Hurley, Patrick J. *A Concise Introduction to Logic*, 10th edition. Thomson-Wadsworth Publishing, 2008.

Assignments

Quizzes, homework, and in-class assignments 25%

Each of the three exams 25%

Grading scale

Assignment and course grades sometimes include an element of qualitative judgment by the instructor.

94↑=A (Excellent)

90=A-

87=B+

84=B (Good)

80=B-

77=C+

74=C (Satisfactory)

70=C-

67=D+

64=D (Poor)

60=D-

Below 60=F

Attendance

If you are absent from class, you are responsible for finding out from classmates what you missed—including notes, announcements, and copies of materials. In-class quizzes and assignments cannot be made up; these grades are a type of participation grade. If you turn in an assignment late because of an absence, the assignment grade will be docked a late penalty. If you have special circumstances for an absence, make arrangements with the professor as soon as possible.

Plagiarism and Collaboration

The standard penalty for plagiarism or other cheating is an F for the assignment or an F for the course. Violations of the Academic Honesty Policy are reported to Moravian's Academic Affairs Office, who may impose other penalties as appropriate to the offense.

Become familiar with the Academic Honesty Policy in the student handbook. If you have questions about the policy or about what counts as cheating and what counts as fair collaboration, please ask so that you are confident about what is and is not permissible.

Students with Disabilities

Reasonable accommodation will be provided on a case-by-case basis to students with documented disabilities. Students who would like accommodations for learning disabilities or ADD/ADHD should meet with Mrs. Laurie Roth in the Office of Learning Services. Students who would like accommodations for other disabilities should meet with Dr. Ronald Kline in the Counseling Center. The student should then speak to the instructor so that appropriate academic accommodations can be made.

Logic, Spring 2008

Course and Assignment Calendar Subject to revision by the instructor

W Jan 16: What is logic? Why study logic? Tips for doing well in a logic class.

F Jan 18: Venn diagrams

Due: Read pages 251, 253–259

Exercise 5.2 (page 261), Part I, starred problems and each problem that immediately follows a starred problem

The book's instructions for your homework ask for a lot of steps. All I want you to do is (1) shorten the problems by substituting capital letters for the key phrases, (2) draw the Venn diagram and (3) write whether the argument is valid or invalid. We are using only what is called the "Boolean standpoint," which is the method we practiced in class and which is explained in your book on pages 251, 253–259.

Note: The starred problems have the answer in the back of the book, so you can check those answers.

W Jan 23: Venn diagrams; quiz

Due: Remaining problems from exercise 5.2, Part I (problems # 3, 6, 9, 12, 15, 18)

F Jan 25: Introduction to propositional logic

Due: Read 6.1

Exercise 6.1, Part I, problems 1-8

W Jan 30: Translations into propositional logic

Due: Exercise 6.1, Part I, starred problems and ones immediately following starred problems from 10-40

F Feb 1: Translations in propositional logic

Due: Exercise 6.1, Part II, starred problems and ones immediately following starred problems

W Feb 6: Computing truth value; in-class work on problems from ex. 6.2, Part III

Due: Read 6.2

Exercise 6.2, Part I, problems 1-10

F Feb 8: Truth tables

Due: Read 6.3 (pp. 313-319)

Exercise 6.3 Part I, starred problems and those immediately following starred ones
Part II, problems 1, 4, 13

W Feb 13: Truth tables to test validity
Due: Read 6.4
Exercise 6.4, Parts I & II, starred problems only

F Feb 15: Common argument forms
Due: Read 6.6
Exercise 6.6, Part I, starred problems and those immediately following starred ones
Part II, starred problems only

W Feb 20: Exam I
Due: Study for exam, which covers soundness and validity, and everything we covered in chapter 6 (note: exam does not cover Venn diagrams).

F Feb 22: Beginning proofs
Due: no homework

W Feb 27: Proofs
Due: Read 7.1
Exercise 7.1, Part I, problems 1–5; Part II, problems 1-5

F Feb 29: Proofs
Due: Exercise 7.1, Part III, 1-25, starred problems and immediately following starred problems & Part IV, 1-2

March 1–March 9: Spring recess

W March 12: Proofs
Due: Read 7.2
Exercise 7.2, Part I, problems 1–8, starred and following,
Part II, problems 1–8, starred and following

F March 14: Proofs
Due: Exercise 7.2, Part III, 1–17, starred problems and following; Part IV, problem 4

W March 19: Proofs
Due: Read 7.3
Exercise 7.3, Part I, problems 1–8, starred and following,
Part II, problems 1–8, starred and following

F March 21: Easter recess

W March 26: Proofs
Due: Exercise 7.3, Part III, 1–17, starred problems and following; Part IV, problems 1, 4

F March 28: Exam 2
Due: Study for exam

W April 2: Proofs

Due: Read 7.4

Exercise 7.4, Part I, problems 1–8, starred and following,
Part II, problems 1–8, starred and following

F April 4: Proofs

Due: Exercise 7.4, Part III, 1–20, starred problems and following

W April 9: Proofs

Due: Exercise 7.4, Part III, 22–32, starred problems and following

F April 11: Proofs

Due: Read 7.5 (you may skip the bio on p. 393)

Exercise 7.5, Part I, problems 1–11, starred and following

W April 16: Proofs

Due: Read 7.6

Exercise 7.6, Part I, problems 1–11, starred and following

F April 18: Reading predicate logic

Due: Exercise 7.6, Part I, problems 13, 14, 16

Read 7.7; Exercise 7.7, problems 1, 2, 7, 8

W April 23: Informal fallacies

Due: Read pp. 118–125, only sections 3 (appeal to the people), 4 (ad hominem), 6
(straw man), 8 (red herring)

Exercise 3.2, problems 2, 5, 6, 13, 16, 19, 22

F April 25: Informal fallacies

Due: Read pp. 134–140, 149–152, 154, only sections 11 (hasty generalization), 12
(false cause), 13 (slippery slope), 15 (begging the question), 17 (false dichotomy)

Exercise 3.3, Part III, 1, 7, 10, 22, 28, 30

Exercise 3.4, Part III, 7, 25, 37, 40, 46

Final Exam: Week of Monday, April 28 – Saturday, May 3; day, time, and room TBA