

Logic

Spring 2015. Althouse 207. MWF 9:30 – 10:20

Instructor: Chauncey Maher

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Office Hours: TR 3:30-4:30, or by appointment

Course Description

This is a course in logic, which is the study of proper reasoning. In this course, you will learn *about* proper reasoning—what it is, and what it is not—and you will learn *how* to reason better. You will learn essential concepts and techniques for thinking about reasoning, such as validity, soundness, argument form, refutation by counterexample, and proof by deduction. With these concepts and techniques, among others, you will learn how to identify, construct, reconstruct and evaluate arguments.

Goals

- Improve your ability to reason!
- Learn how to identify, reconstruct and evaluate arguments
- Learn essential concepts and techniques for thinking about arguments

Text

Davis, *An Introduction to Logic*

Evaluation

Exercises: **You must regularly do the exercises in the book.** Otherwise, it is virtually impossible to get a decent grade in this class (e.g., to earn a 75). I will not be grading your work on these exercises. However, because I want to be sure that you understand the material, we will spend time during each meeting doing some exercises. Please take this chance to raise questions about specific exercises.

Mini-tests: There will be **5 mini-tests** (longer than a quiz; shorter than a big test). Each will be worth **20%** of your final grade; that is, your final grade will be an average of your scores on your mini-tests. (This effectively means that 5% on any mini-test is worth 1% of your final grade.)

Grading Scale for Mini-Tests

A	95-100	C	65-69
A–	90-94	C–	60-64
B+	85-89	D+	55-59
B	80-84	D	45-54
B–	75-79	F	0-44
C+	70-74		

Schedule (tentative)

Date	Topic	Reading (for this day in class)
1/19 M	Introduction to the course	
1/21	Arguments and non-arguments	1.1 – 1.2
1/22	Complex arguments	1.3
1/26 M	Complex arguments, continued Soundness, Argument Strength and Modality	1.3 2.1 – 2.2
1/28	Deductive vs. Inductive Soundness and Validity	2.3-2.5
1/30	Deductive vs. Inductive Soundness and Validity	2.3-2.5
2/2 M	Some informal fallacies	2.6
2/4	MINI-TEST #1	MINI-TEST #1
2/6	Arguments from Authority, Arguments from Analogy	3.1 – 3.2
2/9 M	Enumerative Induction, Statistical Syllogism, Fallacy of Exclusion	3.3 – 3.4
2/11	Causal Induction and Elimination	4.1
2/13	Hypothetical Induction	4.2
2/16 M	Evaluating Explanations	4.3 – 4.4
2/18	Definitions	10.4
2/20	MINI-TEST #2	MINI-TEST #2
2/23 M	Categorical Propositions	5.1
2/25	Opposition	5.2
2/27	Conversion, Obversion, Contraposition	5.3
3/2 M	Categorical Syllogisms	5.4
3/4	Refutation by Counterinstance	5.5
3/6	Deductions	5.6
3/9 – 3/13	<i>Spring Break</i>	<i>Spring Break</i>
3/16 M	Deductions	5.6
3/18	Deductions, Singular Categorical Propositions	5.6 – 5.7
3/20	Venn Categoricals, Sets and Diagrams	6.1 – 6.2
3/23 M	Venn Diagram Test	6.3
3/25	Aristotelian Categoricals, Singular Categoricals	6.4 – 6.6
3/27	MINI-TEST #3	MINI-TEST #3
3/30 M	Conjunction, Disjunction, Negation	7.1
4/1	Argument Form	7.2
4/3	Truth Table Test for Validity	7.3
4/6 M	Truth Table Test for Validity	7.3
4/8	Logical Truth, Falsity and Contingency	7.4-7.5
4/10	Refutation by Countercase	7.6
4/13 M	Conditionals	7.7
4/15	MINI-TEST #4	MINI-TEST #4
4/17	One-way Rules	8.1
4/20 M	Replacement Rules	8.2
4/22	Indirect Proof	8.5
4/24	Quantifiers	9.1 – 9.3
4/27 M	Quantification Rules	9.4 – 9.5
4/29	Review of Quantification	9.1-9.5
5/1	MINI-TEST #5	MINI-TEST #5

Academic Honesty

Any case of suspected academic dishonesty must be reported. Note: "To plagiarize is to use without proper citation or acknowledgment the words, ideas, or work of another. Plagiarism is a form of cheating that refers to several types of unacknowledged borrowing." When in doubt, cite it. For more information, please see the handbook on Community Standards here:

<http://www.dickinson.edu/student/files/commstand0809.pdf>

Disabilities

I will make reasonable academic accommodations for students with documented disabilities. If you think you are eligible for such accommodation, please first register with Disability Services in Biddle House, specifically Stephanie Anderberg (717-245-1734; disabilityservices@dickinson.edu). If you are eligible, Marni Jones, Director of Learning Skills and Disability Services, will provide you with a letter attesting to that. Once you have that letter, we can meet to discuss what we need to do. All of that must happen in the first three weeks of the semester.