PHIL 107: Logic and Reasoning
Syllabus

Fall 2003: MWF 2:40 - 3:55, Dewing Hall 103
Instructor: Dr. Ashley McDowell

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Website: www.kzoo.edu/phil/McDowell/Intro_logic.htm
Office Hours: Mondays and Wednesdays 10:30-12:00, Tuesdays and Thursdays 11:00-12:00 (unless a change is announced)

Textbooks: Patrick J. Hurley, A Concise Introduction to Logic: 8th Edition (designated as "H")
Theodore Schick, Jr., and Lewis Vaughn, How to Think About Weird Things: 3rd Edition (designated as "S&V")

Course Description

This course has two complementary components: an introduction to formal logic, and a study of ways to reason better. These are two ways to approach the subject of thinking well. Formal logic is the art of converting arguments into symbolic notation, in order to determine the strength and soundness of support for conclusions. To learn logic one must learn the symbols, argument constructions, and ways to distinguish good from bad logical form. This involves working through arguments and proofs in a systematic way. To learn to do this, you will be doing a substantial number of homework problems. The text we are using comes with "Logic Coach" software that allows you to work through the problems on your computer, accessing help files and getting feedback as you do so. To learn reasoning and critical thinking, one must learn to pay attention to the structure and strength of reasons for conclusions. We will study "informal fallacies," the pitfalls of poor reasoning. We will study the best ways to construct arguments, as well as to evaluate them. In particular, we will focus on reasoning in science. We will use a text called How to Think About Weird Things, which focuses on the assessment of hypotheses in science, pseudoscience, and the paranormal. Using issues such as "miracle cures," UFO abductions, communication with the dead, parapsychology, and "creation science," we will explore good and bad reasoning and argumentation.

Assignments in this course will almost all be in the form of "objective" homework, quizzes, and tests. It is probably not an understatement to say, however, that those who conscientiously absorb the lessons of this course will forever write better papers, construct better arguments, and, in general, become better thinkers.

Class Format

This class will consist largely of lecture and working through problems. Participation is expected by all members of the class, and you may be called on frequently.
Course Requirements and Grading Scheme

Exams: 20% each
In this course there will be three major exams. The second and third exams will require understanding of all previous material but with questions primarily on the material covered since the previous exam.

Homework: 15%
There will be homework assignments for nearly every class meeting, which will be announced in class and on the website. These will mostly be exercises from your textbooks. I will sometimes have you record an incident in your life requiring the critical thinking skills you are learning; be prepared to share these with the class. Some of your homework assignments will be collected and graded, without warning, and some will be collected in order to record that you did it. We will also be going over the homework in class, so you must bring a paper copy of each homework assignment with you to that day's class.

"SEARCH" Report: 10%
In Week 9, we will be reading Chapter Nine of your S&V text, "Case Studies in the Extraordinary." This chapter gives a method for evaluating extraordinary claims, the SEARCH method. Monday of Week 10 (11/24) is the due date for a 3-4 page typed report using this method, along the model of the examples in that chapter. The report must be on one of the six extraordinary claims presented on pages 294-295 of S&V. It must include some research on each of several hypotheses that might explain the phenomena (you will formulate at least two and no more than three hypotheses to serve as alternatives to the one offered). You may turn this report in at any point from Week Seven on. If you want to be preparing ahead of time for this report, you could start doing research on one of the six topics (I will make information available about good critical research, or you can visit the reference desk at the library or its resources online). To have an edge on the methods of doing this assignment, you might read Chapter 9 of S&V early, and you might read Chapter 7 of S&V ahead of time; we will be covering it in Weeks 9 and 10. You will receive more information on the "SEARCH" report during the quarter.

Quizzes: 15%
There will be a few (4-6) unannounced quizzes.

Attendance and class conduct
Attendance is expected: for each unexcused absence after two, your final grade will be reduced by a full grade. Your conduct in this class does not bear official weight in your grade, but could make a difference in your final grade. Class conduct includes participation, which is expected, as well as improvement and effort. It also includes issues of respectful behavior, such as tardiness, distracting behavior, or disrespectful behavior towards members of the class. We will go over this in class.

Assignment responsibilities
It is your responsibility to retain copies of all assignments you turn in, in a reliable format. Late assignments will be assessed a grade penalty of half a grade for each day late, except in the most extreme extenuating circumstances (for instance, severe illness).

Grading Scheme

Exam 1: 20%
Exam 2: 20%
Exam 3: 20%
Homework: 15%
Report: 10%
Quizzes: 15%
Academic integrity and the Honor System

"It is always important to think of the intellectual world as a community of mutual dependence, mutual helpfulness, mutual protectiveness, and common delight. We take ideas from others and we give them to others. We are indebted to others, and others are indebted to us. In sharing and acknowledging the community, we define ourselves more certainly as individuals. The ability to describe our sources is also an ability to define our own originality and our own selves. All communities depend on generosity, trust, definition, and the proper use of sources is part of the mortar that holds the community of the mind together."
- Richard Marius, Expository Writing Program, Harvard University

In this class, as in all classes at Kalamazoo College, we will be operating under the Honor System. It is important that you familiarize yourself with that system, and so I am attaching a copy of the College's statement of it. You should also familiarize yourself with proper procedures for collaborating, doing research, and citing sources. I expect each of you to visit my webpage and read the essay there called "Plagiarism and How to Avoid It." Should you have any questions about citations, plagiarism, or honor system issues, please visit or contact me.

Any assignment you turn in that I find to violate academic integrity, either through dishonesty, plagiarism, lack of appropriate citations, or unauthorized collaboration, will receive a grade of 0. Any further instance of a violation of academic integrity will be punished by a failing grade in the class as a minimum sanction.

Special needs
If you have any special needs that I can accommodate, please let me know as soon as possible.

Office hours
My office hours are posted above. They will be conducted on a first-come, first-served basis. You should feel absolutely free to come to them and discuss the course, the material, the assignments, or philosophy.
I request that each of you take a few minutes to visit me during my office hours sometime in the first week of classes. It will be an opportunity for us to chat one-on-one for the first time, and to get to know each other a bit more.

Schedule of Readings

This schedule is tentative, and will most likely be changed. Any changes will be announced in class and on the website. The reading assignments listed for each day must be completed before that class.

PART ONE
CRITICAL THINKING: GOOD, BAD, AND UGLY REASONING

WEEK ONE
M 9/22 Introduction

W 9/24 Basic Concepts
Arguments, premises, conclusions
H 1.1, 1.2
S&V Ch. 1

F 9/26 Basic Concepts
Deduction, induction, validity, truth, soundness, strength, cogency
H 1.3, 1.4
S&V pgs. 146-154 ("A Little Logic")
WEEK TWO
M 9/29 Basic Concepts
Argument forms: proving invalidity; extended arguments
H 1.5, 1.6

W 10/1 Application: How to Assess a "Miracle Cure"
S&V Ch. 8

F 10/3 Informal Fallacies
H 2.1 Varieties of Meaning
H 3.1 Fallacies in General
S&V Appendix: introduction, pgs. 298-299

WEEK THREE
M 10/6 Informal Fallacies
H 3.2 Fallacies of Relevance
S&V Appendix, pgs. 301-303: "Appeal to the Person," "Appeal to Fear"

W 10/8 Informal Fallacies
H 3.3 Fallacies of Weak Induction
S&V Appendix, pgs. 301-304: "Genetic Fallacy," "Appeal to Authority," "Appeal to the Masses,"
"Appeal to Tradition," "Appeal to Ignorance," "Hasty Generalization," "Faulty Analogy," "False
Cause"

F 10/10 Informal Fallacies
H 3.4 Fallacies of Presumption, Ambiguity, and Grammatical Analogy
S&V Appendix, pgs. 299-301: "Begging the Question," "False Dilemma," "Equivocation,"
"Composition," "Division"

WEEK FOUR
M 10/13 Informal Fallacies
H 3.5 Fallacies in Ordinary Language

W 10/15 Review

F 10/17 EXAM

PART TWO
PROPOSITIONAL LOGIC: SEEING PAST WORDS TO LOGICAL CONSISTENCY

WEEK FIVE
M 10/20 Propositional Logic
H 6.1 Symbols and Translation

W 10/22 Propositional Logic
H 6.2 Truth Functions

F 10/24 Propositional Logic
H 6.3 Truth Tables for Propositions

WEEK SIX
M 10/27 Propositional Logic
H 6.4 and 6.5 Truth Tables for Arguments, Indirect Truth Tables
W 10/29 Propositional Logic
H 6.6 Argument Forms and Fallacies

F 10/31 Natural Deduction in Propositional Logic
H 7.1 Rules of Implication I

WEEK SEVEN
M 11/3 Natural Deduction in Propositional Logic
H 7.2 Rules of Implication II

W 11/5 Propositional Logic
H 7.3 Rules of Replacement I

F 11/7 Propositional Logic
H 7.4 Rules of Replacement II
(NOTE: You may turn in your "SEARCH" report anytime from this week until 11/24)

WEEK EIGHT
M 11/10 Review

W 11/12 EXAM

PART THREE
A TASTE OF PREDICATE LOGIC
and
REASONING IN SCIENCE

F 11/14 Predicate Logic
H 8.1, Symbols and Translation

WEEK NINE
M 11/17 Predicate Logic
H 8.2, Using the Rules of Inference

W 11/19 Application: Case Studies in the Extraordinary
S&V Ch. 9 (especially pgs. 250-257)

F 11/21 Application: Science and Its Pretenders
S&V ½ of Ch 7: pgs. 159-182
H 9.5
(Optional: S&V Ch.3)

WEEK TEN
M 11/24 Application: Science and Its Pretenders
S&V ½ of Ch. 7: pgs. 182-205
H 9.6
"SEARCH" REPORT DUE

W 11/26 CLASS CANCELLED

Final exam: Wednesday 12/3, 1:00 - 4:00
September 18, 2003