PHIL 121: Methods of Reasoning

REVISED VERSION 8/31/09

Fall 2009

Instructor: Dr. Anthony R. Reeves
Email: areeves@binghamton.edu
Office: LT 1204
Phone: (607) 777-5188

Office Hours: Tues. 10:00 AM – Noon; Wed. 1:00 PM – 2:00 PM

I will be in my office and available during office hours, but you can make appointments to see me at other times. My preference is that we make appointments by email, and have substantive discussions face-to-face.

Teaching Assistants: Ann Johnson (ajohnso7@binghamton.edu)
Danesh Singh (dsingh2@binghamton.edu)

Course Description

In this course, we will focus on developing skills related to good thinking and reasoning. Attention will be paid to the analyzing arguments, deductive and inductive reasoning, identifying argumentative fallacies, and employing the elements of formal logic. We will practice these skills in a variety of contexts, including mathematics, science, law, advertising, ethics, religion, and politics. Successful completion of the course should result in an improved ability to articulate what separates good from bad arguments, develop promising lines of reasoning, quickly notice errors in reasoning, identify methods for resolving disagreements, and think critically in general. You might look at this course as an opportunity to master the fundamental standards of reasoning that govern nearly every academic discipline.

Objectives

The student will be able to:

- Recognize the structure and nature of arguments in both everyday and academic discourse
- Identify fallacious reasoning
- Implement strategies for developing successful lines of reasoning
- Understand and employ the basic methods of formal logic, both propositional and predicate
- Employ the standards of inductive inference

Required Text

Introduction to Logic, 13th ed., Copi and Cohen

Requirements

Grade Breakdown:

Exam I	20%
Exam II	20%
Exam III	20%
Exam IV	20%
Quizzes	15%
Participation	5%

Exams: There will be four exams in this course. The first three will be written during regular class meetings. The fourth will be scheduled during the university's Final Exam period. Students will *not* be permitted to use texts or notes during any of the exams. Exams will be cumulative.

Quizzes and Exercises: The assigned reading contains numerous problem sets (titled "Exercises" in the text) designed to encourage mastery of the concepts being presented. Completion of all the exercises contained in the assigned reading is expected, unless otherwise indicated in class. For many students, this will require a substantial amount of time, but the rewards will become obvious when it comes to test-taking. For most students, regular practice is essential to doing well in the course.

Students *will not* be asked to hand in completed problem sets. However, unannounced (i.e. "pop") quizzes will be frequently given in discussion sections. *The quizzes will only ask questions contained in the problem sets in the text.* The quizzes may include questions from the assigned readings in the previous two weeks. Thus, students can prepare for these quizzes by completing the assigned exercises.

Participation: Students will be assessed on their contributions in class, particularly in discussion sections. The grade will be based on the frequency with which the students provide valuable verbal contributions in class. Such contributions include informed participation in classroom discussions, assisting with the solution of problems before the class, and asking relevant and cogent questions.

Extra-Credit: There will be no extra-credit assignments. Assessment will be exclusively based on the criteria listed above.

Course Policies

Attendance: Attendance in class is mandatory. Students should arrive promptly at the beginning of class with the textbook in hand. Students may miss (2) lectures and (1) discussion section

without penalty. Each unexcused absence beyond this will result in the student's *final grade* being reduced by a third of a letter grade. Excuses will be granted only for documented emergencies. Note that arriving late to class or leaving before class has ended will be counted as an absence.

No incompletes or make-up exams will be given in this class unless the student can produce adequate documentation of very exigent circumstances that preclude her/him from meeting the course requirements. Students are required to inform the instructor of any such circumstances at the earliest possible occasion.

Electronic Devices: All electronic devices, including computers and cell phones, are to be turned off before the beginning of class unless special permission has been granted to use a computer. During exams, use of any such devices will be regarded as academic misconduct (i.e. cheating).

Academic Honesty: Acts of academic dishonesty will be dealt with harshly in accordance with Harpur College policies. The **Student Academic Honesty Code** can be found at http://bulletin.binghamton.edu/integrity.htm . Cheating during an exam, including any use of cell phones or other electronic devices, may result in a zero for that exam.

Schedule of Readings

The following plan is subject to revision, I will inform the class of any changes as we go. The reading/problem assignments are listed next to the date they are to be completed.

Date:	Assignment:	Pages:
Aug. 31	Introduction	
Sep. 2	1.1 - 1.6 Basic Logical Concepts	4-36
Sep. 3	Discussion Section	
Sep. 9	3.1 - 3.6 Language Functions and Definitions	71-109
Sep. 11	Discussion Section	
Sep. 14	4.1 – 4.3 Fallacies of Relevance	118-141
Sep. 16	4.4 – 4.5 Fallacies of Defective Induction	141-157
Sep. 18	Discussion Section if before 1:00 PM	
Sep. 21	4.6 Fallacies of Ambiguity	157-175
Sep. 23	**Exam I**	
Sep. 25	Discussion Section	
Sep. 28	**No Class**	
Sep. 30	5.1 - 5.5 Categorical Propositions	180-198
Oct. 2	Discussion Section	
Oct. 5	5.6 - 5.8 Conversion, Obversion, Contraposition	198-223

Oct. 7	6.1 - 6.3 Categorical Syllogisms/Venn Diagram Tests	224-244
Oct. 9	Discussion Section	
Oct. 12	6.4, 7.1 - 7.2 Syllogistic Rules and Fallacies	244-255, 267-272
Oct. 14	7.3 - 7.4, 7.7 Syllogisms in Ordinary Language	272-287, 298-305
Oct. 16	Discussion Section	
Oct. 19	**Exam II**	
Oct. 21	8.1 - 8.2 Truth Tables; Conjunction, Negation, Disjunction	315-331
Oct. 23	Discussion Section	
Oct. 26	8.3 - 8.5 Conditional Statements and Material Implication	331-347
Oct. 28	8.6 - 8.10 Forms, Equivalence, Laws of Thought	347-369
Oct. 30	Discussion Section	
Nov. 2	9.1 - 9.5 Rules of Inference	372-393
Nov. 4	9.6 - 9.7 Rules of Replacement	393-404
Nov. 6	Discussion Section	
Nov. 9	9.8 Constructing Formal Proofs	404-421
Nov. 11	9.9 - 9.12 Proof of Invalidity, Inconsistency	421-435
Nov. 13	Discussion Section	
Nov. 16	**Exam III**	
Nov. 18	10.1 - 10.4 Quantification Theory	437-453
Nov. 20	Discussion Section	
Nov. 23	10.5 Proving Validity	454-463
Nov. 30	10.6 - 10.7 Proving Invalidity; Asyllogistic Inference	463-479
Dec. 2	11.1 - 11.3 Analogical Reasoning	482-503
Dec. 4	Discussion Section	
Dec. 7	12.1 - 12.4 Causal Analysis; Mill's Methods	512-532
Dec. 9	12.4 - 12.5 Mill's Methods of Inductive Inference cont.	532-549
Dec. 11	Discussion Section	
	Exam IV	