Philosophy 102
Practical Logic

Fall 2017, Westminster College
Prof. Bryan Rennie

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Required Reading:

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Schedule:
Class will meet from 12:50 to 1:50 in PH 208.
You are responsible for having read the assignments before class on the day they are listed, and for being prepared for discussion.

**Monday, 8/28** Introduction, "[Online Exercises](#)" and the [class webpage](#).
Homework: Read TAR Chapter One - Classification.

**Wednesday 8/30** Classification.
Homework: Read TAR Chapter Two - Definition.

**Friday 9/1** Definition.
Homework: Read TAR Chapter 3.1 - Propositions and Word Meaning.
Do computer exercises from 1.1 to 2.3.

**Monday, 9/4** Propositions and Word Meaning.
Homework: Read TAR Chapter 3.2 - Propositions and Grammar.

**Wednesday, 9/6** Propositions and Grammar.
Homework: Revise TAR Chapters 1-3. Prepare for Quiz #1. (Sample).

**Friday, 9/8** QUIZ #1 (TAR Chapters 1 through 3).
Homework: Read TAR 4.1 - Elements of Reasoning.
More Computer exercises on TAR chapter 3 to chapter 4.1.

**Monday, 9/11** Elements of Reasoning.
Homework: Read TAR 4.2 - Diagramming Arguments.
**Wednesday, 9/13** Diagramming Arguments.  
Homework: Read TAR 4.3 and 4.4 - Evaluating Arguments and Induction and Deduction.

**Friday, 9/15** Evaluating Arguments. Induction and Deduction.  
Homework: Read TAR 4.5 and 4.6 - Implicit Premises and Distilling Arguments.

Computer exercises 4.2 to 4.6.

**Monday, 9/18** Implicit Premises and Distilling Arguments.  
Homework: Read TAR 5.1 and 5.2 - Subjectivist Fallacies and Fallacies Involving Credibility.

**Wednesday, 9/20** Subjectivist Fallacies and Fallacies Involving Credibility.  
Homework: Read TAR 5.3 - Fallacies of Context.

**Friday, 9/22** Fallacies of Context.  
Homework: Read TAR 5.4 - Fallacies of Logical Structure.  
Computer exercises TAR 5.3 and 5.4.

**Monday, 9/25** Fallacies of Logical Structure.  
Revise TAR Chapters 4 and 5. Prepare for Quiz #2 (Sample).

**Wednesday, 9/27** QUIZ #2 (TAR chapters 4 and 5).  
Homework: Read TAR 6.1 - Standard Form Categorical Propositions.

**Friday, 9/29** Standard Form Categorical Propositions.  
Homework: Read TAR 6.2 - The Square of Opposition.  
Computer exercises TAR 6.1 to 6.2.

**Monday, 10/2** The Square of Opposition.  
Homework: Read TAR 6.3 - Existential Import.

**Wednesday, 10/4** Existential Import.  
Homework: Read TAR 6.4 - Venn Diagrams for Propositions.

**Friday, 10/6** Venn Diagrams for Propositions.  
Homework: Read TAR 6.5 - Immediate Inferences.  
Computer exercises TAR 6.3 to 6.5.
Monday, 10/9 Immediate Inferences.
Homework: Read TAR 7.1 and 7.2 - The Structure of a Syllogism and Validity.

Wednesday, 10/11 The Structure of a Syllogism and Validity.
Read TAR 7.3 and 7.4 - Enthymemes and Rules of Validity.

Friday, 10/13 Enthymemes and Rules of Validity.
Read TAR 7.5 - Venn Diagrams for Arguments.
Computer exercises TAR 7.1 to 7.5.

Monday, 10/16 Venn Diagrams for Arguments.
Homework: Revise TAR Chapters 6 and 7 - Categorical Propositions and Syllogisms.

Wednesday, 10/18 Revision of Categorical Propositions and Syllogisms.

Friday, 10/20 QUIZ #3 (TAR chapters 6 and 7).

Mid-term Break: Saturday 10/21 to Tuesday 10/24.
Homework: Read TAR 8.1 and 8.2 - Disjunctive and Hypothetical Syllogisms.
Computer exercises TAR 8.1 to 8.2.

Wednesday 10/25 Disjunctive and Hypothetical Syllogisms.
Homework: Read TAR 8.3 - Distilling Deductive Arguments.

Friday 10/27 Distilling Deductive Arguments.
Homework: Read TAR 8.4 - Extended Arguments.
Computer exercises TAR 8.3 to 8.4.

Monday, 10/30 Extended Arguments.
Homework: Read TAR 9.1 - Connectives.

Wednesday, 11/1 Connectives.
Homework: Read TAR 9.2 - Statement Forms.

Friday, 11/3 Statement Forms.
Homework: Read TAR 9.3 - Computing Truth Values.
Computer exercises TAR 9.1 to 9.3.

Monday, 11/6 Computing Truth Values.
Homework: Read TAR 9.4 - Formal Properties and Relationships.

Aristotle’s logic

1. The heart of Aristotle's logic is the syllogism.
2. An example of a syllogism is:
   “All men are mortal. Socrates is a man.
   Therefore Socrates is mortal.”
   Note that as long as the premises are true, the conclusion must be true.
3. The syllogistic form of logical argumentation dominated logic for more than 2000 years.
**Wednesday, 11/8** Formal Properties and Relationships.
Homework: Revise TAR Chapters 8 and 9, prepare for Quiz #4 (Sample, TAR chapters 8 and 9).
Computer exercises TAR 9.2 to 9.4.

**Friday, 11/10** QUIZ #4 (TAR chapters 8 and 9).
Homework: Read TAR 10.1 - Truth Tables.
Computer exercises TAR 10.1.

**Monday 11/13** Truth Tables.
Homework: Read TAR 10.2 - Test of Validity and Short Form.

**Wednesday 11/15** Test of Validity and Short Form.
Homework: Read TAR 10.3 - Proof.

**Friday 11/17** Proof.
Homework: Read TAR 10.4 - Equivalence.
Computer exercises TAR 10.2 to 10.3.

**Monday, 11/20** Equivalence.
Computer exercises TAR 10.4.

**Thanksgiving Break, Wednesday 11/22 to Sunday 11/26.**
Revise TAR Chapter 10 (10.1-10.4), prepare for Quiz #5 (Sample).

**Monday 11/27** Homework: Preparation for Quiz #5.

**Wednesday, 11/29** QUIZ #5 (TAR ch. 10.1-10.4).

**Friday, 12/1** Revision of Quizzes 1 and 2: TAR chs. 1-5--Language, Reasoning, Classification, Definition, and Fallacies.

**Monday 12/4** Revision of Quizzes 3 and 4: TAR chs. 6-9--Categorical Propositions and Syllogisms.

**Wednesday, 12/6** Revision of Quiz 5: TAR ch. 10--Propositional Logic-Arguments, and Explanation of Final Exam.

**Friday, 12/8** Last Day of classes.
Loose ends: revision of areas of difficulty in preparation for the Final Exam.

The final examination will take place on Tuesday December 12th from 8:00 a.m. to 10:30 a.m. in PH 208.
COURSE OBJECTIVES

- To learn what an argument is. What components does it contain, what assumptions does it make?
- To learn what makes a good argument. Why does a given conclusion follow from certain assumptions?
- To learn what makes a bad argument. Why are certain conclusions not entailed by certain propositions?

This course is an introduction to the basics of logic as an academic discipline. We will consider what logic is. It is the study of the distinction between valid and invalid reasoning. Having established our working attitude to logic we will investigate the basic terms, forms, types, and style of argument and the uses of language in argument. To that end the basic vocabulary of logic and argument must be learned.

Our most extensive analysis will be of deductive logic, that is to say, arguments which produce logically necessary conclusions once their premises are accepted. The standard forms of such arguments will be analyzed, and their accompanying fallacies noted. The symbol systems used to express and analyze these forms will be practiced.

The overall objective of this is two-fold: first, it will inform students of the precise and formal nature of logical proof (and its relative rarity); second, exposure to and practice with arguments and their identification as valid or invalid should greatly sharpen the students' natural skill at validating arguments and constructing their own valid arguments. This last is in many ways the final objective of this course.

COURSE REQUIREMENTS

Attendance

Since discussion is required to ensure that each point is fully understood and absorbed attendance is crucial. Missed classes will be penalized.

Learning good logic skills is like learning both language and manual skill--they require practice, both physical and mental. To that end all students will be required to answer questions, solve problems, and do exercises from the textbook in class. Note that these exercises are not graded. All you need to do is to demonstrate to the instructor and to the class that you have made an effort to complete them. It is your responsibility to raise questions about points which you have not understood. This is your opportunity to seek clarification on difficult passages. You are NOT automatically expected to fully understand everything you read.

IF STUDENTS DO NOT MAKE AN EFFORT TO PERFORM THESE EXERCISES POINTS WILL BE SUBTRACTED FROM THEIR TOTAL.
*Homework*

There will be a certain amount of reading homework after most classes to ensure a constant and ongoing effort to master each section before moving on to the next. This homework will not be handed in and will not be graded as such. It is for your own good rather than for the grading process. However, questions will be asked about the homework at the start of each class, and if it is apparent that you have not done it points will be subtracted. Time will be allowed in class to attempt the exercises but they must be studied beforehand as homework.

**GRADING**

Grading will be done on a points system up to a maximum of 400 total possible points:

Quizzes (5 @ 40 points) These quizzes are the most important element of the course and are meant to ensure steady effort and ongoing understanding. WARNING: Failure to score a passing grade on any quiz will result in the loss of all point for that quiz. 200 points = c. 50%.

Computer exercises. Although these exercises will not be graded for performance 100 points will be given for simply completing them (but by “completing” I do mean making an effort to pass. Failed assignments will not be considered complete). Up to one quarter of your total grade points can be lost by not doing the required exercises. 100 points = 25%

Final examination This will review the whole course so the start is not forgotten at the end. WARNING: Failure to pass the final is failure to pass the course. 100 points = c. 25%