



PHIL 6 - Introduction to Logic and Critical Thinking

Catalog Description

Transfer Status: CSU/UC

Unit(s): 3.00

Lecture: 51.00 Contact hours/102.00 Out of class hours/153.00 Total hours/3.00 Unit(s)

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Course Description: A study of traditional logic with both deductive and inductive reasoning, including syllogisms, natural deduction, and fallacies. Practical application of basic skills in orderly and accurate reasoning and communication. (C-ID PHIL 110).

Objectives

Upon successful completion of this course, the student should be able to:

1. Evaluate, analyze and criticize arguments.
2. Organize beliefs and ideas in an orderly manner.
3. Distinguish and evaluate deductive and inductive arguments.
4. Identify and label various informal fallacies.

Course Content

Topic Titles / Suggested Time Topic	
	<u>Lecture</u>
<u>Topics</u>	<u>Lec Hrs</u>
Introduction	8.00
a. General nature of arguments	
b. Arguments vs. expositions	
c. Truth of premises vs. validity of inference	
d. Logical necessity vs. empirical necessity	
e. Deduction vs. induction	
Informal Fallacies	10.00
a. fallacies of irrelevance: Appeal to force, ad hominem, argument from ignorance, appeal to pity, appeal to public opinion, appeal to authority, complex question, etc.	
b. Fallacies of ambiguity: Equivocation, composition, division, etc.	
Categorical Propositions and Square of Opposition	6.00
a. A, E, I, O propositions	
b. Square of opposition	
Categorical Syllogisms	12.00
a. Standard form and order	
b. Immediate inferences	
c. Logical analogies as means of proving invalidity	
d. Venn diagrams	
e. Rules of inference	
Propositional logic	9.00
a. Logical Connectives	
b. Symbolizing sentences	
c. Truth tables	
d. Natural deduction proof method	
Induction	6.00
a. Analogical arguments	
b. Inductive generalizations	
c. Causal connections and Mill's Methods	
Total Hours: 51.00	

Methods of Instruction

- A. Discussion
- B. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
- C. Lecture
- D. Multimedia Presentations

E. Reading Assignments

Methods of Evaluation

- A. Exams/Tests
- B. Quizzes
- C. Portfolios
- D. Papers
- E. Class participation
- F. Mid-term and final examinations
- G. Students will write at least 1,500 words. This requirement will be met either by essay examinations, take-home tests, short papers, or book reports. (Note: all written work will be evaluated on both its form and content.)

Examples of Assignments

Reading Assignments

1. Read the chapter in Copi/Cohen “Basic Logical Concepts”: Be prepared to discuss and/or write a short essay explaining the logical distinction between Valid and True.
2. Read the Chapter in Copi/Cohen “Science and Hypotheses”: Be prepared to discuss and/or write a short essay explaining why many historians and philosophers of science argue that there are no “crucial experiments.”

Writing Assignments

1. Go to a newspaper or internet site. Find an argument (NOT merely a report on a controversial issue). Then in a short 500-word essay analyze it for any of the informal fallacies presented in the course. Be sure to explain (not merely name) the fallacies.
2. In a 750-word essay, construct an argument for or against a position on some controversial topic. Be sure not to commit any of the informal fallacies we discussed in class.

Out-of-Class Assignments

1. Write out and evaluate an argument presented on an opinion program on television or streaming service.
2. Ask an artificial intelligence chatbot to provide an example of a valid deductive argument, and then evaluate the answer.

Recommended Materials of Instruction

Hurley, P. J. (2024). A Concise Introduction to Logic. *Cengage*, 14th. 9780357798683.

Copi, I. & Cohen, C. (2019). Introduction to Logic. *Routledge*, 15th. 9781138500860.

Howard-Snyder, F., Howard-Snyder, D., & Wasserman, R. (2019). The Power of Logic. *McGraw-Hill*, 6th. 9781259848070.

Other Learning Materials

OER: Fundamental Methods of Logic (<https://www.oercommons.org/courses/fundamental-methods-of-logic>)

Minimum Qualifications

Philosophy (Masters Required)

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