**Las Positas College**
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**Course Outline for PHIL 8**

**LOGIC AND ARGUMENTATION**

**Effective: Fall 2017**

I. CATALOG DESCRIPTION:
PHIL 8 — LOGIC AND ARGUMENTATION — 4.00 units

Logic and Argumentation. This course is designed to develop effective reasoning skills. Valid reasoning through formal deductive logic is emphasized, but the course also covers meaning in language, fallacies, and inductive reasoning methods in philosophy, literature and the sciences. This course differs from Philosophy 6 (Introduction to Logic) in that it has a prerequisite of English 1A and involves the application of logical technique to a major research paper.

4.00 Units Lecture

**Prerequisite**
ENG 1A - Critical Reading and Composition

**Grading Methods:**
Letter Grade

**Discipline:**

| | MIN |
|---|---|
| **Lecture Hours:** | 72.00 |
| **Total Hours:** | 72.00 |

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1

III. PREREQUISITE AND/OR ADVISORY SKILLS:

**Before entering the course a student should be able to:**

A. ENG1A

IV. MEASURABLE OBJECTIVES:

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

A. identify, summarize, and diagram arguments given in diverse natural language texts.
B. identify, critique and avoid both formal and informal fallacies in argumentation;
C. symbolize ordinary language arguments using the operators and constants of sentential logic;
D. check for the validity of arguments using truth tables and formal rules in a system of natural deduction;
E. comprehend, utilize and apply the distinction between syntax, symantics, and conceptual content in language and arguments;
F. explain, evaluate, and apply the most basic elements of induction, confirmation, probability theory, and scientific methodology;
G. evaluate ones own system of beliefs, assumptions, inferences and justifications using the methods of critical reasoning.
H. construct arguments in essay format that employ the methods of critical reasoning listed above, while avoiding the the pitfalls of common fallacies.
I. apply the various methods of critical reasoning discussed above to works of philosophy, literature, the social sciences, and other persuasive media;
J. compose extended argumentative essays utilizing effective logical tools and sound essay structure.

V. CONTENT:
A. Formal symbolization in sentential logic
    1. Meaning, syntax and conceptual content in ordinary language
    2. Formal conversion of ordinary language using constants and operators
B. Formal proof methodologies
    1. truth tables and Ven diagrams
    2. Basic rules of natural deduction
    3. proof strategies in natural deduction
    4. formal fallacies
C. Inductive strategies
    1. confirmation theory
    2. probability
    3. experimental design
    4. scientific methodologies
D. Informal argumentation strategies
    1. the application of formal logical rules to natural language arguments
    2. constructing clear, rational and effective arguments in natural language

3. evaluating arguments in philosophy and literature
4. applying logic within diverse cultures and traditions
5. methods of ethical argumentation
6. avoiding informal fallacies
7. evaluating our own biases, beliefs, assumptions, and justifications.

E. Developing extended argumentative essays
1. Essay struture
2. Paragraph structure
3. Research methodologies
4. Compositional strategies
5. APA essay format
6. Peer review and self review
7. Effective oral presentation of arguments
8. Completing writing assignments totaling 6,000 words

## VI. METHODS OF INSTRUCTION:

A. **Written exercises and case studies** - Writing assignments totaling 6,000 words, including an extended research paper
B. **Critique** - Peer and instructor review of written work
C. Problem sets done in groups and as homework
D. **Observation and Demonstration** -
E. **Research** - methodologies demonstrated for students
F. **Discussion** -
G. **Student Presentations** -
H. Multi-media presentations & analysis
I. Course text readings
J. **Lecture** -

## VII. TYPICAL ASSIGNMENTS:

A. Problem sets
1. Example: Formalize the following arguments using the operators and constants of sentential logic and prove their validity or invalidity using the system of natural deduction

B. Extended argumentative essay
1. Extended argumentative essay: Your essay should begin with a clear thesis statement and opening paragraph. Analysis should involve a literature review of research relative to your thesis statement. Arguments found within the literature review must be compared, contrasted and evaluated using the tools of logic learned throughout this course. Independent arguments must be generated in response to the arguments analyzed. You must defend your thesis statement against the strongest counter arguments. The essay must follow APA format in structure and will be a minimum of 3,500 words.

C. Homework
1. Evaluate an article in popular media reporting on a scientific discovery. Analyze the use of scientific reasoning, probabaility, experimental design, and/or induction presented in the article.

D. Class presentations
1. As a group, develop a sound argument on a controversial claim approved by the instructor. Use at least 3 sources, and the methods of reasoning and argument development covered in class. Present the argument to the class in a 15 minute presentation, and hand out an outline of each group members argument to each member of our class. Please allow 10 minutes at the end of your presentation to respond to challenges made to your argumentative methodology by your fellow students.

E. Reading
1. Read chapter 1 in our logic textbook and be prepared to discuss the difference between syntax, semantics, and conceptual content.

## VIII. EVALUATION:

A. **Methods**

1. Exams/Tests
2. Quizzes
3. Research Projects
4. Papers
5. Oral Presentation
6. Projects
7. Group Projects
8. Class Participation
9. Class Work
10. Home Work

B. **Frequency**

1. At least one midterm and a final exam
2. Quizzes given as appropriate in the course
3. At least 1 oral project, group project, or student project will be assigned
4. Evaluatiion will involve some combination of class participation, class work, and/or homework as determined by the instructor.
5. At least 2 shorter essays, and one extended research paper. Total written work word minimum is 6,000.

## IX. TYPICAL TEXTS:


1. Baronett, Stan. *Logic: Concise Edition*. 3rd ed., Oxford Universit Press, 2015.
2. Herrick, P. *Introduction to Logic.*, Oxford University Press, 2012.
3. Hurley, Patrick. *A Concise Introduction to Logic.* 12th edition ed., Wadsworth/Thompson, 2014.
4. American Psychological Association. *The Publication Manual of the American Psychological Association.* 6th ed., American Psychological Association, 2009.
5. Q, Troyka, and Gordon R. *The Simon and Schuster Handbook for Authors.* 10th ed., Simon and Schuster, 2012.


## X. OTHER MATERIALS REQUIRED OF STUDENTS:

A. None