

## Course Proposal for Revised General Education Course: Philosophy 1900G

### 1. Catalogue Description

- a. 1000-level
- b. Logical and Critical Reasoning
- c. 3-0-3
- d. F, S,
- e. Logic
- f. A study of the structure and evaluation of arguments, focusing upon: analysis and informal evaluations of everyday arguments; problem-solving strategies; formal tests of validity; conversational contexts of argumentation, and the interaction of contextual principles with principles of validity.
- g. No Prerequisites.
- h. The course is writing active.

### 2. Student Learning Objectives.

Students will learn:

- \* to analyze the structure of arguments (and their constituent sentences)
- \* to evaluate the support evidence provides for claims
- \* to develop and understand Boolean algebra and to use it in order to represent the formal structure of English language sentences and arguments
- \* to understand the extra-logical conversational principles of natural language and how these interact with logical factors in natural language argumentation.

### 3. Course Outline.

This course is divided into 15 units, to be distributed evenly during a 15-week/50-minute course (45 classes) or a 15-week/75-minute course (30 classes)

Week 1: Identifying arguments and non-arguments; identifying parts of arguments (analysis of argument structure); chains of arguments.

Week 2: Factors in argument evaluation: truth and validity; validity and invalidating situations; informal test of validity.

Week 3: Validity of chains of arguments; fallacies of validity.

Week 4: Logical form and validity; subject matter, conditionals, and negations; Boolean algebra as a "language of pure form"; syntactic rules for the formal language; translation from English to formalism.

Week 5: Formal semantics for the formal language; Bivalence; semantic rules; truth tables; tautology and contradiction.

Weeks 6-7: Truth tables as a formal test of validity.

Weeks 7-8: Truth trees as a revision of truth tables; truth trees and validity; (Midterm).

Week 9: More Boolean algebra: conjunctions, disjunctions, and biconditionals; translation from English to formalism; formal semantics for the extended formal language.

Week 10: Extended truth tables as a test of validity.

Week 12: Truth trees as a revision of truth tables; truth trees and validity.

Week 13: Introduction to Pragmatics: use vs. meaning; Conversational Background; basic presuppositions; presupposition inheritance.

Week 14: Presuppositions of questions and commands; further pragmatic factors in "Why?" and "How?" questions; pragmatic fallacies.

Week 15: Direct vs. indirect, literal vs. non-literal communication; Grice's Conversational Maxims; formal logic reconsidered.

(Final)

#### 4. Evaluation of Student Learning.

a. Student performance will be evaluated by regular homework problems, quizzes, and midterm and final exams. Through individual problems on English language passages, students will learn identify arguments and analyze their structure, as well as using informal tests to evaluate their evidential support. Grading will be based on six quizzes (6 points each), six collected homeworks (2 points each), a midterm exam (36 points), and a final exam (36 points).

b. The course is writing active, as students develop their own arguments and analyze others' English arguments in terms of grammatical and logical structure, evidential support, and communicative principles of ordinary language.

#### 5. Rationale.

a. The course will be placed in the Humanities and Fine Arts segment of the general education program, as it deals with formal principles of inference and elementary Boolean algebraic structures.

b. The course has no prerequisites and presupposes no prior knowledge (other than knowledge of English and elementary rational intuitions). It is therefore listed as a

1000-level course.

c. The formal material in the course may overlap with some content in Abstract Algebra; but that course deals, at a more advanced level, with much extra material, and does not make a detailed study of the application of formalism to natural language argumentation.

d. The course is required of Philosophy majors and minors.

6. Implementation.

a. The course will initially be assigned to Prof. Brian Beakley

b. The text for the course is *Logic: Techniques of Formal Reasoning*, 2nd edition, Kalish, Montague, and Mar (Harcourt, Brace, Jovanovich, 1980).

c. No additional costs to students.

d. The course will first be offered in Fall 2000.

7. A community college course may be judged equivalent to this course.

8. Date approved by the department: 3/27/00

9. Date approved by CAHCC: 4-5-00

10. Date approved by CAA:

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