Anoka-Ramsey Community College

PHIL 1105: Introduction to Logic and Critical Reasoning

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: *.*

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: Goal 02 - Critical Thinking, Goal 04 - Mathematical/Logical Reasoning

(MnTC Goals 2 and 4)

This course is an introduction to a central part of Philosophy: the philosophical study of reasoning. Studies include the function and uses of language, the distinction between deductive and inductive arguments, methods for symbolizing and evaluating the validity of deductive arguments, and the detection of informal fallacies. Students will gain practical skills used in the evaluation of inductive and deductive arguments, which are applicable at all levels of reasoning.

B. COURSE EFFECTIVE DATES: 06/01/1998 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Nature of philosophy and the central role of logic
2. Distinction between arguments and non-arguments
3. Distinction between inductive and deductive arguments
4. Appropriate terms for analysis of arguments (Inductive: strength and cogency; Deductive: validity and soundness)
5. Informal fallacies
6. At least 3/4 of the course will be spent on the following:
   Categorical Logic (including translation, Square of Opposition, and Venn Diagrams)
7. Symbolic translation of statements (and deductive arguments), for use in truth-functional logic
8. Truth-Tables (or Truth-Trees) used to check the validity of deductive arguments
9. Proofs of validity/invalidity using Natural Deduction (rules of inference and rules of replacement)

D. LEARNING OUTCOMES (General)

1. Understanding of the difference between arguments and non-arguments
2. Identification of the difference between inductive and deductive arguments
3. Identification of the difference between flawed/successful inferences and the truth-value of premises
4. Written identification and explanation of specific fallacies that demonstrate flawed inferences
5. Correct translation of ordinary sentences into appropriate symbolic representation which are suitable for formal tests of validity
6. Application of formal proofs for deductive arguments, demonstrating validity and invalidity

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

Goal 02 - Critical Thinking

1. Imagine and seek out a variety of possible goals, assumptions, interpretations, or perspectives which can give alternative meanings or solutions to given situations or problems.
2. Analyze the logical connections among the facts, goals, and implicit assumptions relevant to a problem or claim; generate and evaluate implications that follow from them.
3. Recognize and articulate the value assumptions which underlie and affect decisions, interpretations, analyses, and evaluations made by ourselves and others.

Goal 04 - Mathematical/Logical Reasoning

1. Clearly express mathematical/logical ideas in writing.
2. Explain what constitutes a valid mathematical/logical argument(proof).
3. Apply higher-order problem-solving and/or modeling strategies.

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted