Philosophy 106 Introduction to Symbolic Logic 3 unit; 3 hours lecture Recommended Preparation: English 1A with a minimum grade of C Degree applicable Transfer CSU and UC

This course focuses on the representation of arguments for formal analysis, and the skills and techniques needed to do so effectively. The focus will be on the basic elements of classical and propositional logic with a brief introduction to predicate logic.

Course Objectives:

- 1. Differentiate between deductive and inductive arguments.
- 2. Examine forms of categorical statements and analyze them by means of the squares of opposition and operations.
- 3. Determine the validity of categorical syllogisms, employing Venn diagrams and/or syllogistic rules.
- 4. Translate English sentences into sentential logical form, using truth functional operators.
- 5. Construct truth tables both full, and indirect to test statements and arguments in sentential logic.
- 6. Construct formal proofs of validity using established truth functional principles and rules.
- 7. Transform sentential formulas into predicate logic formulas.
- 8. Complete enthymeme and sorites in a form that would allow formal evaluation of such arguments.
- 9. Differentiate between truth, validity and argument soundness through both definition and analysis of presented arguments.
- 10. Identify premises and conclusions of a variety of deductive argument forms, and restate these arguments in standard form.
- 11. Identify a variety of fundamental deductive argument patterns.

Student Learning Outcomes (SLO):

- Logical Structure of Arguments
 Students will recognize the logical structures of arguments, and be able to put arguments into forms
 suitable for symbolization and subsequent assessment.
- Logical Strength of Arguments
 Students will be able to explain the difference between truth and the logical strength of argument forms, and demonstrate this knowledge through the assessment of formal and/or popular examples of reasoning processes.
- 3. <u>Testing Symbolized Arguments</u> Students will be able to test symbolized arguments for validity by using standard methods for propositional, categorical, and/or predicate logic evaluations.

ADA Statement:

El Camino College is committed to providing educational accommodations for students with disabilities upon the timely request by the student to the instructor. A student with a disability, who would like to request an academic accommodation, is responsible for identifying herself/himself to the instructor and to the Special Resource Center. To make arrangements for academic accommodations, contact the Special Resource Center.

Student Code of Conduct

Student Rights and Grievances Procedure 5530

https://www.elcamino.edu/administration/board/boarddocs/AP%205530%20STUDENT%20%20RIGHTS%20AND%20GRIEVANCES.pd <u>f</u>