COURSE TITLE & NUMBER: Logic: PHIL 1250
CREDITS: 3 (Lecture 3/Lab)
PREREQUISITES: MATH 0971: Beginning Algebra or MATH 0983: Intermediate Algebra or equivalent

CATALOG DESCRIPTION:
Introductory logic introduces fundamentals of informal, traditional, symbolic, and inductive logic. The course requires the student to explore the different types of logic and apply those skills to critical thinking and problem solving. The student examines the uses of language in argumentation, the importance of definition, the place of fallacy in arguments, as well as the foundations of deductive logic, traditional or Aristotelian logic, symbolic or modern logic, and inductive logic. The course provides the student with the fundamentals of analytic reasoning providing the foundation for further logical study. MNTC Goal Area(s): (04) Math/Logical Reasoning.

OUTLINE OF MAJOR CONTENT AREAS:
1. Language in argument
   A. Structure of logical argument
   B. Basic terms of logical form
   C. Truth and validity
   D. Deduction and induction
   E. Functions of language
   F. Emotional and neutral language
   G. Fallacies
   H. Definition
2. Deduction
   A. Propositions
   B. Categorical syllogisms
   C. Arguments in ordinary language
   D. Disjunctive and hypothetical syllogisms
   E. Symbolic logic
      i. Special symbols
      ii. Statement forms
      iii. Tautologies, contradictions, and contingencies
      iv. Laws of thought
   F. Proofs of validity
   G. Quantification theory
3. Induction
A. Arguments by analogy
B. Mill's methods of induction
C. Science, hypothesis, and induction
D. Probability
E. Induction and the law

COURSE GOALS/OBJECTIVES/OUTCOMES:
1. Students will list all terms in a logical argument.
2. Students will apply the rules of the syllogism to determine validity of arguments.
3. Students will distinguish deductive from inductive argument.
4. Students will identify a minimum of six logical fallacies.
5. Students will translate ordinary language into categorical propositions.
6. Students will prove the validity of categorical syllogisms.
7. Students will prove the validity of disjunctive and hypothetical syllogisms.
8. Students will translate ordinary language into symbolic form.
9. Students will apply the concept of analogy to inductive thinking.
10. Students will demonstrate knowledge of probability theory.

MNTC GOALS AND COMPETENCIES MET:
Math/Logical Reasoning

HCC COMPETENCIES MET:
Working productively and cooperatively
Communicating clearly and effectively
Thinking creatively and critically

STUDENT CONTRIBUTIONS:
The students attend class regularly, participate in class discussions, perform daily board work, complete daily assignments, and complete required testing. Two hours of preparation outside of class is required for each hour spent in class.

METHODS FOR EVALUATING STUDENT LEARNING:
Student assessment shall take place using instruments selected/developed by the course instructor.

Curriculum Committee Approval Date: December 3, 2018

AASC APPROVAL DATE: December 19, 2018
REVIEW DATE: December 2023