I. Course Code: PHILO 1023
II. Course Title: LOGIC
III. Course Description: This is a nine-hour per week course which studies the various forms of reasoning—the deductive and the inductive. The subject also includes the study of fallacies as well as the essentials of symbolic logic.

IV. Course Objectives:
   A. Cognitive Aims
      1. To understand the basic principles and rules governing inferential thinking.
      2. To make logical divisions and precise definition of terms.
      3. To construct and evaluate valid arguments and to accurately refute fallacies.

   B. Value Aims
      1. To instill upon the students the value of critical thinking in their formation of honest and integral intellect, manifested in sound and rational judgment.
      2. To enable the students to think critically, detect fallacies as well as recognize and construct valid arguments.

V. Course Outline:

<table>
<thead>
<tr>
<th>Section</th>
<th>Subsections</th>
<th>Week 1</th>
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<tbody>
<tr>
<td>I.</td>
<td>Understanding Logic and Language: Reasoning</td>
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<tr>
<td>A.</td>
<td>Defining Logical Concepts</td>
<td>WS: April 17 &amp; 20</td>
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<tr>
<td>B.</td>
<td>Arguments: Analysis and Evaluation</td>
<td>TF: April 19 &amp; 23</td>
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<tr>
<td>II.</td>
<td>Informal Logic</td>
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<tr>
<td>A.</td>
<td>Language and its Application</td>
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<tr>
<td>B.</td>
<td>Definition</td>
<td></td>
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<tr>
<td>C.</td>
<td>Notions and Beliefs: Fallacies</td>
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<td>III.</td>
<td>Deduction: Classical Logic</td>
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<tr>
<td>A.</td>
<td>Categorical Propositions</td>
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<tr>
<td>B.</td>
<td>Syllogisms in Ordinary Language</td>
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<tr>
<td>II.</td>
<td>Informal Logic</td>
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<td>A.</td>
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<tr>
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<th>Week 3</th>
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<td>III.</td>
<td>Deduction: Classical Logic</td>
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<tr>
<td>A.</td>
<td>Categorical Propositions</td>
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<tr>
<td>B.</td>
<td>Syllogisms in Ordinary Language</td>
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### IV. Modern Logic

**A. Symbolic Logic**
- Symbols for Conjunction, Negation, and Disjunction
- Conditional Statements and Material Implication
- Argument Forms and Refutation by Logical Analogy
- Precise Meaning of “Valid” and “Invalid”
- Testing Argument Validity on Truth Tables
- Some Common Argument Forms
- Statement Forms and Material Equivalence
- Three Laws of Thought

**B. Methods of Deduction**
- Formal Proof of Validity
- Rule of Replacement
- Proof of Invalidity
- Inconsistency
- Indirect Proof of Validity
- Shorter Truth-Table Technique

**C. Quantification Theory**
- Need for Quantification
- Singular Propositions
- Universal and Existential Quantifiers
- Traditional subject-Predicate Propositions
- Proving Validity
- Proving Invalidity
- Assylogistic Inference

### V. Induction: Analogy and Causation

**A. Analogical Reasoning**
- Induction and Deduction Revisited
- Argument and Analogy
- Appraising Analogical Arguments
- Refutation by Logical Analogy

**B. Causal Reasoning**
- Cause and Effect
- Causal Laws and the Uniformity of Nature
- Induction by Simple Enumeration
- Methods of Causal Analysis
- Limitations of Inductive Techniques

### VI. Science and Probability

**A. Science and Hypothesis**
- Scientific and Unscientific Explanations
- Evaluating Scientific Explanations
- Seven Stages of Scientific Investigations
- Classification of Hypotheses

**B. Probability**
- Alternative Conceptions of Probability
VI. **Methodology:** To achieve the objectives of this course, the following teaching-learning methodologies shall be used:

1. Mediated Lecture-Discussion
2. Research and Presentations
3. Free and Graded Recitations
4. Quizzes and Exercises
5. Examinations

VII. **Grading System:**

<table>
<thead>
<tr>
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<th>Midterm:</th>
<th>Semi-Final:</th>
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<tbody>
<tr>
<td>Attendance:</td>
<td>20%</td>
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<tr>
<td>Recitation:</td>
<td>15%</td>
<td>Recitation:</td>
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<tr>
<td>Attitude:</td>
<td>10%</td>
<td>Attitude:</td>
</tr>
<tr>
<td>Quizzes:</td>
<td>15%</td>
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<tr>
<td>Research Output:</td>
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<td>Research Output:</td>
</tr>
<tr>
<td>Midterm Exam:</td>
<td>25%</td>
<td>Final Exam:</td>
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</tbody>
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Final Grade: Midterm Grade + Semi-Final Grade ÷ 2 = GPA

Only an absence of nine (9) cumulative hours or two (2) contact sessions is allowed for each student. Each absence shall translate to a corresponding 1.0 deduction from attendance points, to wit:

- 1 absence = 2.0
- 2 absences = 3.0
- 3 or more absences = 5.0

Tardiness of two hundred (200) minutes in a 270-minute contact session shall mean one (1) absence, unless prior consent from the professor has been sought by the student.

VIII. **References:**


*Supplementary materials, assignments, students’ outputs and grades may be posted in the blog, [http://epbrabante.wordpress.com](http://epbrabante.wordpress.com)

**Timetable may be adjusted as the circumstances require it.**

Prepared by:
ELMER P. BRABANTE, LLB
April 2013