Date: 2/9/17

ROSE STATE COLLEGE

Division Course Syllabus

<table>
<thead>
<tr>
<th>Division</th>
<th>Humanities</th>
<th>Course Prefix and Number</th>
<th>PHIL 2113</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Title</td>
<td>Introduction to Logic &amp; Critical Reasoning</td>
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<td></td>
</tr>
<tr>
<td>Semester and Year Submitted</td>
<td>Spring 2017</td>
<td>Credit Hours</td>
<td>3</td>
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<tr>
<td>Prepared by</td>
<td>Guy Crain</td>
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<tr>
<td>Hours Per Week:</td>
<td>Class 3</td>
<td>Lab 0</td>
<td></td>
</tr>
</tbody>
</table>

Course Description (as it appears in Catalog)

This is a training course in critical reasoning skills and formal logic. The first half of the course is devoted to a general introduction to critical reasoning, obstacles to critical reasoning studied by cognitive psychologists, and inductive argumentation, especially determining probabilities. The second half of the course is devoted to the use of formal logic in the evaluation of statements and arguments. All topics in the course are geared especially toward the practical applicability of critical reasoning skills. Prerequisite: ENGL 1113 or concurrent enrollment.

Prerequisites

| ENGL 1113 or concurrent enrollment |

Text(s):

| Title | All Required Reading Materials Provided Electronically |

Author

Publisher

Copyright Date

ISBN #

Reading Level

Supplemental Materials: (Other books, audio visual aids, etc.)
Outline for Remainder of Syllabus:

Rationale:

Critical reasoning, analytic flexibility, conceptual discernment, and problem-solving are paramount to any valuable skill-set whether practical or vocational. Inculcation of such skills is invaluable to any student who wishes to be competitive in any job market, let alone other areas of life. While students can acquire these skills from many courses in an indirect fashion, Logic & Critical Reasoning is a course designed to focus directly and exclusively on acquiring these skills.

Expected Outcomes:

Upon successful completion of this course, students will be able to:

1. Recognize examples of fallacies commonly present in probabilistic reasoning.
2. Recognize examples of commonly used informal fallacies in ordinary language.
3. Explain obstacles to critical reasoning studied in cognitive psychology.
4. Distinguish appropriate methods for determining probabilities of events or of the truth/falsity of claims.
5. Distinguish matters of truth value from matters of inferential support.
6. Apply probability rules to cases from everyday life.
7. Evaluate inferences and arguments in ordinary language using the methods of formal logic.

Methods of Instruction:

Formal Lecture
Lecture and Discussion
Internet or Computer-based Instruction

Assessment (Including Critical Thinking measurements):

Students will be required to demonstrate their proficiency of course content by way of homework assignments, examinations, group projects, presentations, or applications projects. Grades will be assigned based on a pre-determined scale.

Suggested:

50%  Homework assignments consisting of objective questions
40%  Application projects consisting of a mixture of written assignments and calculation problems
10%  Final Examination

Learning Objectives:

Suggested Units:
UNIT 1: Introduction & Informal Fallacies (Outcomes 2 & 5)

By the end of this unit, students will be expected to:

1. Distinguish text/speech that contains an argument from text/speech that does not contain arguments.
2. Recognize premise indicators and conclusion indicators in common speech.
3. Differentiate logical terms that apply to support from logical terms that apply to truth value.
4. Differentiate between inductive and deductive forms of support.
5. Define and distinguish common informal fallacies.
6. Recognize examples of informal fallacies in media, advertising, and common speech.
7. Construct original deductive and inductive arguments with various possible combinations of support and truth value relationships.

UNIT 2: Cognitive Psychology (Outcome 3)

By the end of this unit, students will be expected to:

1. Define and distinguish various heuristics, effects, and biases that affect human reasoning and judgment.
2. Recognize examples of various heuristics, effects, and biases in media, advertising, and common speech.
4. Analyze and assess personal and professional manifestations of a chosen heuristic and implicit bias self-assessment results.

UNIT 3: Probability Theory (Outcomes 1, 4, & 6)

By the end of this unit, students will be expected to:

1. Distinguish between three different interpretations of probability.
2. Employ probability theory notation accurately.
3. Calculate probabilities for cases involving games of chance.
4. Define and distinguish between positive and negative correlations.
5. Identify the correct probability rule needed to calculate a variety of given problems.
6. Calculate complex probabilities involving cases of law and medicine.
7. Interpret and explain probability data accurately.

UNIT 4: Categorical Logic (Outcomes 5 & 7)

By the end of this unit, students will be expected to:

1. Identify and distinguish the four forms of propositions in Categorical Logic.
2. Diagram and interpret 2- and 3-circle Venn Diagrams accurately.
3. Assess immediate inferences by employing the Square of Opposition.
4. Assess the validity of arguments by employing Venn Diagrams.
5. Recognize and differentiate fallacies present in some categorical syllogisms.
6. Translate ordinary language arguments into categorical syllogisms.
7. Create and interpret 4-circle Venn Diagrams that accurately reflect data supplied in ordinary language.

UNIT 5: Sentential Logic (Outcome 3, 5, & 7)

By the end of this unit, students will be expected to:

1. Employ Sentential Logic notation accurately.
2. Translate ordinary language into Sentential Logic.
3. Construct and interpret truth tables accurately.
5. Recognize common valid and invalid argument forms.
6. Identify and distinguish sentence properties by employing truth tables.
7. Assess the validity of arguments by employing truth tables.
9. Test hypotheses using skill sets acquired from both Sentential Logic and Cognitive Psychology.
10. Apply the methodologies of Sentential Logic to issues in ethics and decision-making.