The goal of this course is to develop students' ability to identify and analyze arguments, both their own and those of others. Widely understood, logic is the evaluative study of argumentative reasoning. An argument is understood to be a complex claim that one set of statements, called "premises," provide reason for believing another, called the "conclusion." As critical endeavors, both formal and informal logic analyze the relationship between premises and conclusion. Informal logic is the critical analysis of arguments as these are articulated in natural languages. Formal logic, in contrast, analyzes the forms of arguments by developing specialized languages in which the basic structural relation between premises and conclusion is precisely symbolized and evaluated. Propositional logic studies the use of various connectives and operators — such as "and," "or," "if . . . then," & "It's not the case that . . ." — in arguments constructed from simple statements. Predicate logic, in contrast, studies the use of various so-called "quantifiers" --such as "some," "none," and "all" — in arguments that pick out things and what can be said about them. By providing resources for evaluating arguments, logic promises to be a tool for exposing views that can not be held "for good reasons." If students make the effort to examine their views by articulating their reasons for holding them, then logic may well enhance their critical reasoning abilities. Logic is not, then, an empirical study of how we do think but, instead, a normative study of how we should reason.
**EVALUATION:**

Students will be evaluated on the basis of midterm examinations and a comprehensive examination weighted in the following fashion.

<table>
<thead>
<tr>
<th>TYPE OF EVALUATION</th>
<th>FREQUENCY</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm Examinations</td>
<td>5 @ 15%</td>
<td>75%</td>
</tr>
<tr>
<td>Comprehensive Examination</td>
<td>1 @ 25%</td>
<td>25%</td>
</tr>
</tbody>
</table>

**POLICIES:**

Attendance is required, along with a willingness to participate in classroom problem solving. Students are to have both read the text and completed the associated assignments before class. Students having difficulty are strongly encouraged to attend office hours and review sessions. Although homework assignments are not graded, they will be periodically collected for instructor's assessment. The five midterm examinations test student mastery of specific areas of formal and informal logical analysis. The comprehensive examination is administered at the scheduled time of finals week. 3 unexcused absences will result in a full grade reduction.

**TEXTS:**


**READING SCHEDULE**

**INTRODUCTION: BASIC CONCEPTS.**

**TUES:**

Hour 1: Arguments, Premises, and Conclusion.
Hour 2: Recognizing Arguments.

THUR:

Hour 1:

A. Deduction and Induction.
B. Validity, Truth, Soundness, Strength, Cogency.

Hour 2:

A. Argument Forms: Proving Invalidity.
B. Extended Arguments.

LANGUAGE, MEANING AND DEFINITION:

TUES: WEEK TWO

Hour 1:

A. Varieties of Meaning.
B. The Intension and Extension of Terms.

Hour 2:

A. Definitions and Their Purposes.
B. Definitional Techniques.
C. Criteria for Lexical Definitions.

THUR:

Hour 1: TEST #1

INFORMAL FALLACIES:

Hour 2:

A. Fallacies in General.
B. Fallacies of Relevance.

TUES: WEEK THREE

Hour 1:

A. Fallacies of Weak Induction.
B. Fallacies of Presumption, Ambiguity, and Grammatical Analogy.
Hour 2: Fallacies in Ordinary Language.

**CATEGORICAL PROPOSITIONS:**

**THUR:**

Hour 1:

A. The Components of Categorical Propositions.
B. Quality, Quantity, and Distribution.

Hour 2:

A. Venn Diagrams and the Modern Square of Opposition.
B. Translating Ordinary Language Statements into Categorical Form.

**THURSDAY INTERNET EXAMINATION: TEST #2.**

**PROPOSITIONAL LOGIC:**

**TUES:**

Hour 1: Symbols and Translation.

Hour 2:

A. Truth Functions.
B. Truth Tables for Propositions.

**THUR:**

Hour 1:

A. Truth Tables for Arguments.
B. Indirect Truth Tables.

Hour 2: Argument Forms and Fallacies.

**TUES:**

Hour 1: Review:

Hour 2: Review.

**TUESDAY INTERNET EXAMINATION: TEST #3.**
NATURAL DEDUCTION IN PROPOSITIONAL LOGIC:

THUR:

Hour 1: Rules of Implication 1.

Hour 2: Rules of Implication 1.

TUES: WEEK SIX

Hour 1: Rules of Replacement 1.

Hour 2: Rules of Replacement 2.

THUR:

Hour 1:

A. Conditional Proofs.
B. Indirect Proofs.

Hour 2: Proving Logical Truths.

TUES: WEEK SEVEN

Hour 1: Review.

Hour 2: Review

TUESDAY INTERNET EXAMINATION: TEST # 4.

PREDICATE LOGIC:

THUR:

Hour 1: Symbols and Translation.

Hour 2: Using Rules of Inference.

TUES: WEEK EIGHT

Hour 1: Change of Quantifier Rule.

Hour 2: Conditional and Indirect Proof.

THUR: REVIEW:

TUES: WEEK NINE
Hour 1: Proving Invalidity.

Hour 2: Relational Predicates and Overlapping Quantifiers.

THUR: Thanksgiving Holiday

TUES:  WEEK TEN

Hour 1: Identity.

Hour 2: Review.

INTERNET EXAMINATION # 5

THUR:

Hour 1: Review

Hour 2: Student Evaluations.

FINAL EXAMINATION: