Date prepared: 11/16/17

Syllabus
The University of New Orleans
Dept. of History and Philosophy

PHIL 1101: Introduction to Logic (3 credits)

SECTION 001: LA 236, T/TH, 09:30 AM – 10:45 AM

Contact Information

Instructor: Dr. Robert Stufflebeam
Office: UNO: LA 385
Office Hours: M-T-W-Th, 11:00 AM – 1:00 PM (and by appointment)
Office Phone: (504) 280-7473
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Course Webpage: Moodle login page

Required Text

[**1**] Stufflebeam, R. (forthcoming). **Introduction to logic**. [Available on Moodle.]

Course Description

CATALOG DESCRIPTION: An introduction to informal logic, classical logic, and sentential logic.

COURSE OVERVIEW: Logic is the study of the principles and methods used to distinguish "good" reasoning from "bad" reasoning. As it is through good reasoning that we plan, explain, persuade, convince, solve, and prove things successfully through language, good reasoning matters. So too do arguments, for they are the main medium through which we reason. Through the study of informal logic, not only will you learn that a good argument is cogent and a bad argument is fallacious, you will learn how to tell whether any argument is cogent or fallacious. But just as English is not always the best language through which to do mathematics, English is not always the best language though which to do logic. For this reason, in addition to informal (nonsymbolic) logic, you will learn both classical symbolic logic and modern sentential symbolic logic. When our attention turns to classical logic, our focus will be on evaluating syllogisms composed of general statements. When our attention shifts to sentential logic, the emphasis will be on deducing claims from their evidence via natural deduction (proofs). The central question in this course is *"Does this (a claim) follow from that (its evidence)?"* By the end of this course, you will have learned a host of formal methods for settling that question and others that bear upon the construction and evaluation of arguments.

Student Learning Outcomes

Upon successfully completing this course, students will be able to do the following:

- to understand the nature of logic and formal systems
- to understand and to apply the principles of "good" deductive reasoning (both in English and symbolically)
- to understand the following distinctions:
    - object language vs. metalanguage
    - informal logic vs. formal logic
    - deductive logic vs. inductive logic
    - sentences vs. statements
    - statements vs. statement forms
    - arguments vs. argument forms
    - cogency vs. validity
    - assumptions vs. presumptions
    - implying vs. inferring
    - mediate inference vs. immediate inference
- to know the different types of statements (atomic and compound), their anatomy, and the conditions according to which any given statement is true or false
- to recognize arguments expressed in prose and to reconstruct them in standard form
- to understand the RIFUT Rule and all of the fallacies associated with violating it
- to evaluate the cogency of an argument fully
- to determine whether a claim follows from its evidence (i.e., whether an argument is valid) using truth-tables and proofs
- to translate statements from English into the formal languages of **C-logic** and/or **S-logic** (and vice versa)
- to demonstrate whether a statement is logically true, logically false, or contingent
- to know the logical relations among statements (e.g., validity, invalidity, consistency, etc.)
- to know the rules of natural deduction and to be able to use them both symbolically and in English
- to read, to understand, and to construct formal proofs
- to prove that a statement (or statement form) is a theorem
- to construct cogent arguments and proofs in English

Course Requirements

Grades will be based on a cumulative 100 point scale distributed as follows:

Requirement		Final grade	
Acknowledgement statement	(1%) 1 point	**A**	100 – 89.5 points
Quizzes	(39%) 39 points	**B**	89.4 – 79.5 points
Exam 1	(15%) 15 points	**C**	79.4 – 69.5 points
Exam 2	(15%) 15 points	**D**	69.4 – 59.5 points
Exam 3	(30%) 30 points	**F**	59.4 — 0 points

ACKNOWLEDGEMENT STATEMENT: Each student must acknowledge knowing that each exam must be submitted by 11:55 p.m. CT on the days identified on the Game Plan. Each student must also acknowledge having read UNO's Academic Dishonesty Policy and pledge to abide by it in this course. You must complete the acknowledgment statement for the quizzes to become available to you. Completing the acknowledgment statement on Moodle is worth **1%** of your final grade.

QUIZZES: There are a series of quizzes on Moodle for each exam. Most quizzes may be completed multiple times and your highest score will be recorded. You must receive a grade on each of the quizzes before an exam will become available to you. The quizzes are worth **39%** of your final grade.

EXAMS: There will be **3** exams. *You **MAY** use your text and notes, but you may NOT use any other resources*. **Exam 1** covers **informal logic**, **Exam 2** covers **classical logic**, **Exam 3** covers **sentential logic**. The exams are not weighted evenly. Each exam (like each quiz) is composed of conceptual questions as well as those that correspond to the exercises for that portion of the course. Everything you will see on the exams (and quizzes) corresponds to what you will see in the exercises. The exams are worth **60%** of your final grade.

EXTRA CREDIT: **10** points extra credit is available by completing a fallacy recognition / evaluation assignment. Each submission is worth **1** percentage point. Extra credit must be completed and submitted in accordance with the guidelines that are on Moodle.

Course Policies

What follows are my class policies. If for any reason you are unable to abide by these policies, you should withdraw from my course.

ACADEMIC DISHONESTY: Academic honesty is fundamental to the process of learning and to evaluating academic performance. Academic dishonesty will not be tolerated. Academic dishonesty includes, but is not limited to, the following: cheating, plagiarism, tampering with academic records and examinations, disseminating any part of an exam, falsifying identity, and being an accessory to acts of academic dishonesty. Refer to the Student Code of Conduct for further information. The Code is available on Moodle and online at http://www.studentaffairs.uno.edu. Each student is required to pledge that all completed work will be submitting according to the principles of academic integrity as defined in the statement on Academic Dishonesty in the UNO Student Code of Conduct

AUDITS: Whether an audit is successful will depend only on your class participation performance.

DISABILITIES: It is University policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have disabilities that may affect their ability to participate in course activities or to meet course requirements. Students with disabilities should contact the Office of Disability Services as well as their instructors to discuss their individual needs for accommodations. For more information, please go to http://www.ods.uno.edu.

INCOMPLETES: Incompletes are STRONGLY discouraged. Should you need to take an incomplete, arrangements must be made with me well before the last class meeting.

LANGUAGE: Feel free to say anything to me or to your peers, but tailor your remarks so as not to be uncivil, abusive, or inappropriate. I will not tolerate ANY abusive behavior, so do not engage in any personal attacks or name calling. (See my 'warning' below.)

LATE WORK: The quizzes covering an exam will become unavailable at the same time an exam must be submitted. No late quizzes will be given. Exams must be submitted by **11:55 p.m. CST** on the day of the exam (see Game Plan), otherwise it will be impossible to submit an exam for grading. Late exams will not be accepted.

PROCTORING: To ensure academic integrity, all students enrolled in distance learning courses at the University of New Orleans may be required to participate in additional student identification procedures. At the discretion of the faculty member teaching the course, these measures may include on-campus proctored examinations, off-site or online proctored examinations, or other reasonable measures to ensure student identity. Authentication measures for this course may include Proctor U and any fees associated are the responsibility of the student. University of New Orleans partners with Proctor U, a live, online proctoring service that allows students to complete exams from any location using a computer, webcam, and reliable internet connection.

WITHDRAWALS: You may withdraw from this course for any reason. Withdrawal is strictly up to you and none of my business. Look in the last page for the last day to withdraw without a penalty — a 'W' appearing on your transcript.

WARNING! *Doing logic requires a willingness to think critically. Critical thinking does not consist in merely making claims. Rather, it requires offering reasons/evidence in support of your claims. It also requires your willingness to entertain criticism from others who do not share your assumptions. You will be required to do logic in this class. Doing logic can be hazardous to your cherished beliefs. Consequently, if you are unwilling to subject your views to critical analysis, to explore arguments in defense of positions you do no hold, or to use computers, then my course is not for you.*

PHIL 1101 Game Plan

(subject to revision)

WEEK	TOPIC	READ	iTunes U LECTURE	QUIZ
(1) Th Aug. 17	**Welcome**		**01**	
(2) T Aug. 22	**Introduction to logic** • good reasoning matters • the nature of logic and types of logic • the nature of arguments • deductive arguments vs. inductive arguments • the problem of induction	**Ch. 1**	**02**	**Q1**
(3) Th Aug. 24	**INFORMAL LOGIC** **What is a statement?** • functions of language • sentences vs. statements • types of statements and their truth-conditions	**Ch. 2**	**03**	**Q2**
(4) T Aug. 29	• truth-functional compound statements • 3 types of conditions • conceptual analysis		**04**	
(5) Th Aug. 31	**Recognizing arguments** • premise = assumption = evidence • conclusion = inference = deduction = claim • evidence + claim = argument • indicators • useful generalizations • writing arguments in standard form	**Ch. 3**	**05**	**Q3**
(6) T Sep. 05	**Evaluating arguments informally** • What does it mean for a claim to follow from its evidence? • deduction vs. induction, valid vs. strong, invalid vs. weak • the principles of good reasoning	**Ch. 4**	**06**	
(7) Th Sep. 07	• **The RIFUT Rule**: the evidence must be **R**elevant to the claim logically, **I**ndependent of the claim, **F**ree of dubious assumptions, **U**nambiguous, and **T**rue		**07**	**Q4**
(8) T Sep. 12	• fallacies of relevance, independence, presumption, and ambiguity		**08**	**Q5**
(9) Th Sep. 14	**Review: Exam 1 due -- 11:55 p.m. CT on Friday, 09/15**			
(10) T Sep. 19	**CLASSICAL LOGIC (C-logic)** **Statements** • **A**, **E**, **I**, and **O** standard general statement forms • translation • Venn diagrams	**Ch. 5**	**09**	**Q6**
(11) Th Sep. 21	• the logical relations between standard general statements captured in the traditional square of opposition • immediate inferences • obversion, conversion, and contraposition • complements		**10**	

(12) T Sep. 26	**Evaluating standard form categorical syllogisms (SFCS's)** • syllogisms, categorical syllogisms, SFCS's • construct counterexample method	**Ch. 6**	**11**	**Q7**
(13) Th Sep. 28	• rule method • distribution		**12**	
(14) T Oct. 03	• Venn diagram method • match syntax method		**13**	
(15) Th Oct. 05	**Review: Exam 2 due -- 11:55 p.m. CT on Friday, 10/06**			
(16) T Oct. 10	**SENTENTIAL LOGIC (S-logic)** **Statements and statement forms** • **S-logic** alphabet and translation • statement forms and substitution instance	**Ch. 7**	**14**	**Q8** **Q9**
(17) T Oct. 17	• negations, conjunctions, disjunctions, conditionals, and biconditionals • logical equivalence • logical properties of statements		**15**	
(18) Th Oct. 19	**Truth-table methods** • anatomy of truth-tables • Is this statement logically true, logically, false or contingent?	**Ch. 8**	**16**	**Q10** **Q11**
(19) T Oct. 24	• Are these two statements logically equivalent? • Is this set of statements consistent? • Is this argument valid?		**17**	
(20) Th Oct. 26	○ construct counter-example method ○ "long" seek counter-example method ○ "short" seek counter-example method		**18**	
(21) T Oct. 31	**Proof method** • What is required to prove something? • natural deduction • rules of inference	**Ch. 9**	**19**	
(22) Th Nov. 02	• formal proofs		**20**	
(23) T Nov. 07	• rules of replacement		**21**	**Q12**
(24) Th Nov. 09	• strategy hints		**22**	**Q13**
(25) T Nov. 14	• practice proofs			
(26) Th Nov. 16	• conditional proof rule	**Ch. 10**	**23**	
(27) T Nov. 21	• **S-logic** is complete • indirect proof rule		**24**	
(28) T Nov. 28	• practice proofs using **CP** & **IP**			**Q14** **Q15**
(29) Th Nov. 30	• proving theorems		**25**	
Th Dec. 07	**Exam 3 & EC due 11:55 p.m. CT**			