Philosophy 210

SYMBOLIC LOGIC

Spring 2017

Meeting:	T R 2:00-3:15, MM109
Instructor:	Azenet López
Email:	all56@miami.edu
Office Hours:	Ashe 731 (email me for appointment).

Textbook:

Understanding Symbolic Logic, Fifth Edition, Virginia Klenk, Pearson, 2008.

Course Overview:

This class is intended to familiarize you with the formal rules of deductive reasoning. We will cover two basic logical systems: classic sentential/propositional logic (weeks 1-8) and predicate logic (weeks 9-14). For each of these systems, we will learn four aspects:

(1) Syntax: the language of the system

(2) Application to natural languages: how to translate English sentences into sentences of the language

(3) Semantics: the truth conditions of sentences in the language

(4) Proof methods: how to show the validity (or invalidity) of an argument form

Learning Objectives:

By the end of this course you'll have attained the following general objective:

- You will be better at deductive reasoning!

This breaks down into the following particular objectives:

- You will be able to identify deductive arguments and their structure
- You will be able to identify valid and sound deductive arguments
- You will be able to analyze the formal structure of sentences in natural languages and translate them into symbolic language
- You will be able to test the validity and invalidity of arguments in two different ways:
  - by means of truth tables
  - by means of formal proofs

Two Warnings:

- Don't miss classes! Every new topic builds on the previous topics, so if you miss a few classes, it is very easy to get lost.
- Practice makes perfect! The problems in every week assignment are intended to give me a sense of how you are doing with the course materials. However, THESE FEW PROBLEMS ARE BY NO MEANS ENOUGH TO GUARANTEE THAT YOU WILL MASTER EACH TOPIC. I strongly recommend you to go over more problems from each set of exercises on your own. Also, I encourage you come to my office hours to get help at any point.

Course Requirements and Grading:

Your final grade will be determined as follows:

50%……14 weekly problem sets

40%…… 4 monthly quizzes (10% each)

10%……Attendance and participation

Grading Scale:

The usual grading scale will apply (0-59% F, 60-62% D-, 63-66% D, 67-69% D+, 70-72% C-, 73-76% C, 77-79% C+, 80-82% B-, 83-86% B, 87-89% B+, 90-92% A-, 93-96% A, 97-100% A+).

About weekly assignments:

Assignments should be submitted **every Tuesday in class** (except for the final one; see below).
You will get the credit only by submitting your complete assignment on time. No points are subtracted for getting some problems wrong, but you must be aware of the corrections I give you.
However, if I find significant mistakes in your assignment, or if it is incomplete (roughly more than 50% is wrong or missing), I will have to ask you to submit a corrected version in order to get the credit.

About the quizzes:

Your lowest grade in all four quizzes will be dropped and replaced by your highest grade. For instance, if your grades for quizzes 1-4 are 60, 80, 75 and 90, you will end up with 90, 80, 75 and 90.
The quizzes will cover the following materials:

- Quiz 1: Units 1-6
- Quiz 2: Units 7-9
- Quiz 3: Units 10-14
- Quiz 4: Units 15 and 24

Class Participation and Attendance Policy:

You must come to class prepared, having read the assigned sections of the book, and prepared to answer (and ask) questions about them.

You are allowed to miss a maximum of three classes, without any harm to your grade. After that, the percentage corresponding to your absences will be deducted.

Late Policy:

Late assignments are strongly discouraged and (except in cases of documented illness or documented grave emergency) will be downgraded at a rate of 5% per day late.

Academic Dishonesty:

No form of plagiarism will be tolerated. Any student caught cheating in any way will automatically fail the course.

Disabilities:

Any student who may require some special arrangements in order to meet course requirements should contact me as soon as possible in order to make the necessary accommodations.

Tentative Schedule:

The schedule below is subject to change as the course develops. Stay tuned for updates!

WEEK	BOOK SECTIONS	ASSIGNMENT
WEEK 1	Unit 1, Introduction to Logic Unit 2, The Structure of Sentential Logic	p. 18, Ex. 1, h, j, k p. 31, Ex. 1, l, m, r, t p. 32, Ex. 2, d, f, h, l
WEEK 2	Unit 3, Computing Truth Values Unit 4, Symbolizing English Sentences	p. 49 Ex. 1, d, f, r p. 50 Ex. 2, h, j p. 70 Ex. 3, h, j, l p. 71 Ex. 4, b, d, f
WEEK 3	Unit 5, Truth Tables for Testing Validity Unit 6, Further Applications of the Truth Table Method	p. 92, Ex.1, d, f, h p. 93, Ex. 4, j p. 109 Ex.2 f, h, j Ex.3 c Ex. 4 d Ex. 5, d
WEEK 4	Unit 7,The Proof Method	**QUIZ 1: Tuesday, February 7th** p. 139, Ex. 1, (2), (4) p. 141, Ex. 4, b

WEEK 5	Unit 7 (continued) Unit 8, Replacement Rules	p. 143, Ex. 5a, 6-10 p. 145, Ex. 8, c, g Ex. 9, a p. 169, Ex.2, f-j p. 170, Ex.3, b
WEEK 6	Unit 8 (continued) Unit 9, Conditional Proof and Indirect Proof	p. 172, Ex. 5, d, m p. 173, Ex. 6, c
WEEK 7	Unit 9 (continued)	p. 196, Ex. 4, d, e Ex. 5, c, e p. 197, Ex. 6, d, e **QUIZ 2: Thursday, March 2nd**
WEEK 8	Unit 10, Singular Sentences Unit 11, Quantifiers	p. 210, Ex. 1, f, j, k, o p. 211, Ex. 2, d, f, h p. 223, Ex. 3, n-j p. 224, Ex. 4, l, n, p, r
	SPRING BREAK	
WEEK 9	Unit 12, Categorical Propositions	p. 246, Ex. 4, h, l, n, p Ex. 5, f, h, j, l p. 247, Ex. 6, l, n, p, s p. 248, Ex. 7, f, h, j
WEEK 10	Unit 13, Complex Subjects and Predicates Unit 14, Quantifier Form	p. 259, Ex. 2, f, h p. 260, Ex. 4, f, h Ex. 5, f, j p. 269, Ex. 2, p-t p. 270, Ex. 3, f, h Ex. 3, f, h, l
WEEK 11	Unit 15, Proofs in Predicate Logic	**QUIZ 3: Tuesday, April 4th** p. 295, Ex. 1, b, d, e, f, h, i
WEEK 12	Unit 15, (continued)	p. 296, Ex. 2, g, i, m, n p. 297, Ex. 3, c, d
WEEK 13	Unit 24, Proof Trees for Predicate Logic	p. 297, Ex. 4, d, g, i
WEEK 14	Unit 24, (continued)	p. 408, 1 (only for the problems from assignment 13) **Assignment 14 is due on Thursday, April 27th** **QUIZ 4: Thursday, April 27th**