

## INTRODUCTION TO LOGIC COURSE POLICY STATEMENT

A. **Aim of Course.** We all reason, sometimes well, sometimes badly, but almost always without being self-conscious. This course aims to teach people to be self-conscious about certain aspects of their reasoning. The course will concentrate on elementary reasoning involving the so-called **Boolean** operators such as *and*, *or*, *not*, and *if-then*, and the so-called **quantifiers** such as *all* and *some*. We will not treat **probabilistic** reasoning, but only reasoning in which there is a claim that the conclusion follows with dead certainty. Various methods will be developed in order to test or establish such claims, e.g., the so-called methods of *truth tables* and *natural deduction*.

At the same time, learning about these methods will develop students' skills in *abstract* reasoning; reasoning about concepts and (simple) *theoretical* ideas. Logic is a theory of reasoning, and in learning it, students will get a feel for how theories work. This theory is a spectacular creative discovery. It provides a way to obtain a deep understanding of reasoning by simplifying actual reasoning processes in just the right way.

B. **Text and Assignments.** Required text: Klenk, **Understanding Symbolic Logic**, Prentice-Hall (4th Edition). The Klenk text is a good one. First, it divides up the material into easily manageable units. It gives you detailed assignments and makes clear exactly what is expected of you at each stage. Second, it clearly explains the material. **You will be responsible for all the reading in the text.** Third, it provides exercises, and fourth, it provides *answers* to many of the exercises assigned.

It must be emphasized here that **it is absolutely essential that you do the assigned exercises**, even though you will not be handing all of them in. Learning logic, like learning a language, is largely a matter of practice, and until you can do the exercises with some ease, you do not know the material well enough to pass the exams. In any case, you should not think of the exercises as a chore; they should be more like games, or puzzles to be solved. If you think of them this way you will probably find them interesting, and perhaps even entertaining. Whatever you do, however, be **diligent** about the assigned problems. If you consistently do well on them, you will probably get an A in the course; if you don't do them at all you will almost surely fail. Handouts will direct you precisely as to which exercises you are to do.

C. **Lectures.** These are MW 11:00-11:50, room CL-232. Topics (in terms of Units in the Klenk book) are listed on the Schedule below. Lectures will assume that you have *already* read the Unit that is the topic of the lecture.

D. **TAs.** All Philosophy TA offices are located in 1428 Cathedral of Learning (14<sup>th</sup> Floor). Messages may be left in their mailboxes in the Philosophy Office, CL 1001. Belnap's office is CL 1028-A (telephone 624-5777); office hours: MW 12:00-1:00. To make an appointment with Belnap at a different time, see or phone Connie in the Philosophy Office, 624-5794.

E. **Quiz Sections.** Students must be registered for a quiz section. These are important. Quiz sections will devote themselves to exercises, to quizzing, and to answering your questions. Attendance is required. There sometimes will be a ten minute quiz, and sometimes a call for mandatory exercises. Space permitting, you may attend any section taught by your own quiz instructor. Here is the schedule of quiz sections:

11599	H	1-1:50	WWPH5E56	Jack Fortune
24048	H	2-2:50	WWPH5E56	Jack Fortune
11603	H	3-3:50	LangyA214	Jack Fortune
45656	F	10-10:50	WWPH5E57	Kohei Kishida
31164	F	11-11:50	WWPH5E57	Kohei Kishida
45673	F	1-1:50	WWPH5E57	Kohei Kishida

F. **Study Groups.** Students will arrange themselves into study groups of a few students each. Study groups will arrange their own routines and schedules. Meeting once a week for an hour might be good.

G. **Exercises.** Each Unit in Klenk directs you to a number of exercises. You should do some of each kind; you cannot master these materials without considerable practice of the sort required by the exercises.

There are answers to many exercises in the back of Klenk, and an Answer Book with answers to others is on reserve in the Library. You may ask about exercises in Quiz sections or in the Lecture; it is normal to ask about exercises whose answers are given in the Klenk book, for you may not understand the *reason* for the answer. You cannot pass this course without doing exercises in preparation for the various exams. Your Quiz Instructor will correct some of every exercise you hand in; you will be provided all the "feedback" you want. Furthermore, on stated days handing in some of your exercises will be mandatory; you will receive credit for this, (but grading will be on "effort", not on success).

H. As an extra resource, there will be an exercise book with answer key on reserve at Hillman Library: Pospel and Marans, **Arguments.** This is a useful source of extra examples and exercises, from Unit 4 on (not before).

I. **Quizzes.** There will sometimes be a ten-minute quiz at the end of quiz sections. These quizzes count towards the final course grade.

J. **Website.** Our URL on the web is: <http://www.pitt.edu/~belnap/phil0500.html>. There you will find (a) this document; (b) fresh problems for every unit; (c) printable copies of lecture slides; (d) practice exams; and (e) perhaps other material. Eventually all this material, together with your quiz and exam grades will be available through <http://courseweb.pitt.edu>.

K. **Three Standard Hour Exams.** These will be given only on the days scheduled. Period. The material in this course is *cumulative*. You must learn the earlier parts in order to go on! When you receive an hour examination back from your TA, you are *required* to re-do the answers to each question on which you made a mistake. (You are responsible for first asking your TA about any missed question that you cannot yet answer.) Each student is encouraged to submit the re-done answers to his or her TA. This is extra work for the TAs, but we think that you will agree that it is worth it. Furthermore, each student whose grade on a particular examination is B- or less is *required* to submit the re-done answers within one week from the date on which the examination was returned. Your TA will supervise this important requirement. One further offer: Your TA has access to a file of old hour examinations. These are useful for extra "catch-up" practice if you have not done well on an examination. Ask. The whole point is that you get in the habit of *not* plunging on ahead without first learning earlier material. Take each examination as an opportunity to make sure that you have really learned what you need to know.

L. **Fourth Hour Exam.** This is offered during the Final Exam period, and plays a special role:

1. You do not need to take the fourth exam.
2. Regardless of your grades on the first 3 exams, you will not receive better than an A– without taking and obtaining at least 75 out of 100 on the Fourth Exam.
3. If you take the Fourth Exam, it can only help your grade, and it cannot hurt it.
4. You may not take both the Fourth Exam and take the Final Examination.

M. **Final Examination.** There will be an optional one-hour Final Examination during the first hour of the Final Examination period. This examination will cover the first three hour examinations. It can only help, not hurt. The optional fourth hour exam is offered during the second hour of the Final Examination period. You may not take both the Final Examination and the Fourth Exam, unless you have special permission from Belnap. Such special permission is given only rarely, since on the one hand, the Fourth Exam is for students that are doing well, while on the other hand, the Final Exam is to help students who are not doing as well as they might.

N. **Extra Credit.** There are several Extra Credit Units in the Klenk book on which you can earn up to a maximum total of 2.5 points *added* to your course grade (this is enough to advance you ¼ of a letter grade). You obtain these points on the four Hour Exams as indicated by ‘EC’ on the Schedule, p. 5.

O. **Grading.** Course grades will be on a strictly numerical basis:

90.0-92.9 = A–	93.0-96.9 = A	97.0-up = A+
80.0-82.9 = B–	83.0-86.9 = B	87.0-up = B+
70.0-72.9 = C–	73.0-76.9 = C	77.0-up = C+
60.0-62.9 = D–	63.0-66.9 = D	67.0-up = D+
	0-59.9 = F	

You must have the minimum score for a grade in order to have earned that grade; e.g., 82.99 is not enough for a B.

The grading scheme, as indicated on the ‘Grade Maze’ on p. 4, takes into account the following features:

1. Three standard hour exams (Max 160 points each, Max total = 480 points).
2. 10 quizzes or exercise sets (Max 6 points each, Max total = 60 points).
3. Extra Credit (Max = 2.5, *added* to course-grade max of 100).
4. Fourth Exam: optional- if you are satisfied with maximum of A– in course. 75 out of 100 required for A or A+ in course; in any case, it can only help and cannot hurt (Max = 100 points).
5. Final examination: optional; it can only help and cannot hurt (Max = 160 points).

## GRADE MAZE

### Points for Quizzes and Exercises

<i>UNITS</i>	<i>POINTS</i>	<i>UNITS</i>	<i>POINTS</i>
	(Max = 6 points each)		(Max = 6 points each)
<b>2 &amp; 3</b> (Qz)	_____	<b>9</b> (Ex)	_____
<b>4</b> (Ex)	_____	<b>11 &amp; 12</b> (Ex)	_____
<b>5 &amp; 6</b> (Qz)	_____	<b>13 &amp; 14</b> (Qz)	_____
<b>7</b> (Ex)	_____	<b>15</b> (Ex)	_____
<b>8</b> (Qz)	_____	<b>16</b> (Qz)	_____

Q: \_\_\_\_\_ Quiz/Exercise Total (Max = 60 points)

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#### EXAMS

#### EXTRA CREDIT

- |   |   |
|---|---|
| A: _____ EXAM 1 (Max = 160 points)  | X1: _____ (Max = 1.0 added to course grade) |
| B: _____ EXAM 2 (Max = 160 points)  | X2: _____ (Max = 1.0 added to course grade) |
| C: _____ EXAM 3 (Max = 160 points)  | X3: _____ (Max = 0.5 added to course grade) |
| D: _____ EXAM 4 (optional; Max = 100 points; minimum needed for A in the course is 75 points) |   |
| E: _____ FINAL EXAM (optional; Max = 160 points)  |   |

\_\_\_\_\_ Provisional grade based on **3 exams**, with a maximum course grade of A-.  
 Max total points = 540. Use  $((Q+A+B+C) \times (100/540)) + (X1 + X2 + X3)$ .

\_\_\_\_\_ Provisional grade based on **4 exams**, needing a minimum of 75 on Exam 4 for an A.  
 Max total points = 640. Use  $((Q+A+B+C+D) \times (100/640)) + (X1 + X2 + X3)$ .

\_\_\_\_\_ Provisional grade based on **3 exams and Final**, with a maximum course grade of A-.  
 Max total points = 700. Use  $((Q+A+B+C+E) \times (100/700)) + (X1 + X2 + X3)$ .

\_\_\_\_\_ **Final Grade** (best of provisional grades)

LECTURES			QUIZ SECTIONS
DATE	UNITS		HF Quiz sections will cover units from the <i>preceding</i> Mon. and Wed.
Jan	M 5	Introduction. [Handouts: (1) Course Policy Statement, (2) Debate on Impeachment, (3) Exercises 1–6 ]	HF 8/9: Read and do Exercises for Unit 1.
	W 7	Unit 1	
	M 12	Unit 2	HF 15/16: Quiz given: Units 2 and 3.
	W 14	Unit 3 ( <i>Martin Luther King Day Monday, 1/19</i> )	
	W 21	Unit 4	HF 22/23: Exercises handed in: Unit 4
	M 26	Unit 5 [Handouts: (1) Problems and (2) Practice Exam #1]	HF 29/30: Quiz given: Units 5 and 6.
	W 28	Unit 6 [Handout: Exercises 7–9]	
Feb	M 2	<b>EXAM #1</b> (Units 1–6; EC 21, 22)	HF 5/6: Exercises handed in: Unit 7.
	W 4	Unit 7	
	M 9	Unit 8	HF 12/13: Quiz given: Unit 8.
	W 11	Unit 8 [Handouts: (1) Strategies + (2) Problems]	
	M 16	Unit 9 [Handout: Practice Exam #2]	HF 19/20: Review Units 7–9 for Exam #2. Exercises handed in: Unit 9.
	W 18	Unit 9	
	M 23	Review Units 7–9 for EXAM #2 [Handout: Exercises 10–16]	HF 26/27: Lecture and in-class exercises: Unit 10.
	W 25	<b>EXAM #2</b> (Units 7–9) EC 23, 25.	
Mar	M 1	Unit 11	HF 4/5: Exercises handed in: Units 11 and 12.
	W 3	Unit 12 ( <i>Spring Break 3/7—3/14</i> )	
	M 15	Unit 13	HF 18/19: Quiz given: Units 13 and 14.
	W 17	Unit 14	
	M 22	Unit 15	HF 25/26: Exercises handed in: Unit 15.
	W 24	Unit 15 [Handout: Strategies]	
	M 29	Unit 16 [Practice Final is available from TA]	HF 4/1,4/2: Quiz given: Unit 16.
	W 31	Unit 16 [Handout: Practice Exam #3]	
Apr	M 5	Review Units 10–16	HF 8/9: Review Units 10–16.
	W 7	Unit 17 [Handout: Practice Exam #4]	
	M 12	<b>EXAM #3</b> (Units 10–16; EC 24, 26)	HF 15/16: Review Units 17 and 18 to prepare for Exam #4.
	W 14	Unit 18	
	M 19	<b>FINAL EXAM</b> (Units 1-6, 7-9, 10-16) 4:00-4:50 <b>EXAM #4</b> (Units 17 & 18) 5:00-5:50	