Philosophy 0540
Deductive Logic

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Course Structure and Requirements

The course will meet Monday, Wednesday, and Friday at 10am, in Gerard House 119. Class meetings will consist primarily of lectures.

The text for the course is *Deductive Logic*, by Warren Goldfarb. Copies are available at the Brown bookstore. Students should plan to read the relevant material from the book before each lecture. Lectures will not cover all material for which students will be responsible. There will be a mid-term examination on 2 March and a final examination during the final examination period. There will also be seven problem sets.

Final grades will be determined by a variety of factors.

- The first and most important factor is that *all of the problem sets must be completed and submitted for marking*. We'll let you off once, if you do miss one. Failure to submit all (but one) of the problem sets will *automatically* lead to a grade of NC. It is, quite simply, impossible to learn this material without doing a lot of problems, and students should actually plan to do a lot more problems than are actually assigned. Please note that the requirement is that the problem sets should be "completed", and by that I mean that one has given them a proper effort. Simply turning in a piece of paper with a few random jottings does not count as completing a problem set.
- It is impossible to do worse in this class than you do on the final exam. That is: If you get an A on the final (and have turned in all the problem sets), you will get an A for the course; if you get a B on the final, you cannot get worse than a B for the course, though you might get an A.
- It is impossible to fail the class if you have given it what we regard as proper effort.
- A presumptive grade will be determined by performance on the two exams, with somewhat greater weight being given to the final. Borderline cases will be decided by performance on the problem sets. Exceptionally good or bad performance on the problem sets may move a grade up or down.

Problem sets are due in class on the day specified below. *We will not accept late problem sets*, as late sets make the graders' task much more difficult. On the other hand, you will find that we are quite prepared to grant extensions, so long as they are requested in advance, that is, *at least one day prior to the due-date*. Extensions will not be granted after that time. Exploitation of our reasonableness will be taken badly.

Let me emphasize again something said above. As with any mathematical subject-matter, it is impossible to learn this material without doing a lot of exercises. The book contains many more than are assigned, and

students are encourage to do additional exercises to improve their understanding of the material. Students are also encouraged to work on the problems together—though, of course, submitted material should be a student's own work.

Prerequisites

There are no formal prerequisites for this course. In particular, the course presupposes no college-level mathematical knowledge. However, much of the course is mathematical in content: Some familiarity, experience, and comfort with proofs, such as those in a high-school geometry course, is extremely useful. Anyone uncertain of their background in this area is encouraged to speak with the instructor.

Syllabus

9 September	Introductory Meeting
11 September	Sections 2–5, 7
14 September	Sections 6, 8

End of material covered by Problem Set #1: Due 21 September

16 September	Section 9
18 September	Sections 10–11, 13
21 September	Section 14
23 September	Sections 14–15
25 September	Section 16 and Review Session

End of material covered by Problem Set #2: Due 2 October

28 September	Introduction to Quantification Theory
30 September	Sections 18–19
2 October	Sections 20–22

End of material covered by Mid-term Examination
(Note: Most of the focus of the mid-term will be on material on the first two problem sets.)

5 October	Section 23
7 October	Section 24
9 October	Section 27

End of material covered by Problem Set #3: Due 4 October

12 October	No Class: Columbus Day Holiday
14 October	Review Session
16 October	Mid-Term Examination

19 October	Introduction to Polyadic Quantification Theory
21 October	Sections 28–9
23 October	Section 29
26 October	Review Session

End of material covered by Problem Set #4: Due 2 November

28 October	Section 30
30 October	Sections 30–31
2 November	Sections 31–32

4 November	Section 32
6 November	Review Session

End of material covered by Problem Set #5: Due 13 November

9 November	Section 33
11 November	Section 33
13 November	Sections 33–34
16 November	Review Session

End of material covered by Problem Set #6: Due 23 November

18 November	Sections 41-42
20 November	Sections 43–44
23 November	Review Session

End of material covered on Problem Set #7: Due 30 November

25 & 27 November	No Class: Thanksgiving Holiday
30 November	Section 35
2 December	Sections 36–37
4 December	Section 38

End of material covered on Problem Set #7: Due 11 December

7 December	Review Session
17 December	Final Exam, 2pm

Problem Sets

Problem Set 1	Section IA (pp. 253-5): 1b,e; 2, 3; 4b,d,g,k
Problem Set 2	Section IB (pp. 255-60): 1a; 2a,c; 3a,c; 4a,d; 6; 7b; Section IC (pp. 260-4): 2; 3a,c; 5; 7; 11b,d; Extra Problems 1-2
Problem Set 3	Section IIA (pp. 265-7): 1b; 2b; 3b; 4a,f; Section IIB (pp. 267-71): 1a,c; 3a,b,e,f; 5a,c
Problem Set 4	Section IIIA (pp. 273-6): 1a,c,e; 2a,c; 3a,b,c; 5a,b; Extra Problem 3
Problem Set 5	Section IIIB (pp. 276-81): 1b,d; 2a,c,e; Extra Problem 4
Problem Set 6	Section IIIB (pp. 276-81): 4a,b,c; 7; 11; 14; Extra Problem 5
Problem Set 7	Section IV (pp. 284-8): 1b; 2a; 3a; 5a,c; 6; 14a,c
Problem Set 8	Section IIIC (pp. 281-3): 1; 3; 5 (but you need only do the ones for (3), (8), and (10), on pp. 209-10); 6; 8