

Symbolic Logic Syllabus

Philosophy 3204

Spring 2013

Students in Philosophy 3204 are responsible for knowing and abiding by the contents of this document. Every effort will be made to avoid modifications of those contents; any such modification will be detailed in writing on a weekly assignment sheet, and announced in lecture.

Please take particular note of the Policy on Late Homeworks (§7.2), which will be strictly enforced.

1 Instructor

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Office hours: Mondays and Wednesdays 1–2 p.m., and by appointment

Because I am the Chairperson of the Philosophy Department, I have a somewhat different schedule from most faculty members. I am on campus most days, but those days are extremely hectic and I am therefore unlikely to be able to see you on a drop-in basis (except, of course, during my office hours). The departmental office staff have standing instructions to let my students in to see me except on those rare occasions when I tell them that there are to be absolutely no interruptions. When you drop in, I may not be able to talk with you for very long, but I will at the very least

take the time to schedule an appointment. By far the best way to see me outside of office hours is to arrange an appointment by email.

If we have an appointment after the department office closes at 4:50 p.m., you must knock on the door of 3312 Boylan so that I know to come and let you in. I make appointments with a starting time and an ending time. The ending time stays fixed even if you come late to the appointment. If I have not seen or heard from you ten minutes after the starting time of your appointment, the appointment is canceled. I reserve the right, if one of your appointments cancels in this way, to make further appointments with you subject to the proviso that one more cancellation of this sort will result in my being available to you outside of class only during my scheduled office hours.

Finally, please note that I may sometimes be forced to schedule meetings at the times designated for my office hours. When that happens I will announce temporary office hours to make up for the missed ones; if possible I will make that announcement on a weekly assignment sheet, and in any event will announce it by email and on the course blog (§8).

2 Lecture Schedule

Lectures will take place Monday and Wednesday 3:40–4:55 p.m. in 3305 Boylan Hall. You are responsible for (that is, you may be tested on) all material covered in lecture.

3 Text

The text for the course is Matthew E. Moore, *From P to Q, and Beyond*. I will email you chapters of the book as they are assigned; chapters will also be available on the course blog.

4 Course Description

In this course we will undertake a rigorous study of such basic logical concepts as validity, entailment and logical truth. We will define these concepts for a formal language with symbols for sentential connectives

like “or” and “if ... then”; for quantity terms like “all” and “some”; and for relations like “is taller than”. It will turn out that our basic concepts can be defined both semantically (in terms of meaning) and syntactically (in terms of formal proofs). Do our two kinds of definitions—semantic and syntactic—match up? The positive answer to this question is called the Completeness Theorem, and in the final weeks of the course we will see why this is the right answer. Our treatment will be self-contained; no previous knowledge of logic will be presumed.

5 Course Objectives

At the end of the course you will be able to:

- translate English sentences into formal notation, and vice versa
- give precise definitions of such logical properties as entailment and satisfiability
- evaluate arguments for validity, and test for the other logical properties, using truth tables and formal proofs
- state and prove the completeness and soundness theorems for propositional logic

6 Course Overview

The course divides into four units, as follows:

Unit I *Propositional logic and its semantics*: Chapters 1–8

Unit II *Propositional formal proofs*: Chapters 9–13

Unit III *Quantified logic*: Chapters 14–18

Unit IV *Metalogic*: Chapters 19–24

7 Grading

Your grade will be determined by your performance on the homeworks (30%), on a midterm exam (30%) and on a cumulative final exam (40%).

The course grade will not be computed using a curve (but see the comments in §7.1 about curves and the exams). Your grade can also be affected by attendance (see §7.3); and by your observance of classroom etiquette (see §7.4). Needless to say, violation of the standards of academic integrity (see §7.5) can have a disastrous effect on your grade.

7.1 Exams

The midterm will be administered in class on Wednesday 20 March. The final examination will cover the entire course (Units I–IV), and will be administered 3:30–5:30 p.m. on Monday 20 May, in 3305 Boylan. Exam grades will be curved (if and) only if the distribution clearly indicates that the exam in question was unduly difficult.

7.2 Homework

At the last class session of each week an assignment sheet will be distributed giving reading and homework assignments for the following week. You should keep a copy of each assignment sheet, as they give indications of what material is especially important and thus are invaluable study aids for the exams. These assignment sheets and other documents handed out in class will be available on Google Docs (§8), with links on the course blog.

My grading of the homeworks will be fairly lenient; you will typically not lose many points for a wrong answer, though you will lose all the points for a problem if I do not see that you made a serious attempt to do it. This has the advantage of making the homework component a relatively easy source of points towards your course grade; it has the potential disadvantage of instilling a false sense of security, since you might wind up with a C on a homework even when performance at that level on an exam would lead to a D or an F.

A careful reading of the text, and diligent working of the problems, is *essential* to excellent performance in this class. You are urged to read the assigned chapter once before the lecture and then to go through it a second time afterwards.

Policy on Late Homeworks: Your homework is late if it is not in my hand when I leave the class session at which it is due. At that point a 10-point

penalty will be subtracted from your grade on that homework. At 3:40 p.m. on each of the next two days after that it will lose another 20 points if I still have not received it; at 3:40 p.m. on each of the next two days after that—that is, on the third and fourth days after the original due date—it will lose 25 points if I still do not have it. You can “stop the clock” at any point by contacting me to arrange an extension, and you can prevent the clock from even getting started if you do so *before* the due date. (Note that while I am fairly generous about extensions, my generosity is not unlimited.) I will rescind late penalties already incurred only in *very* exceptional circumstances. You may email me your homework in order to stop the further accrual of late penalties, but you must provide me with hard copy for grading purposes; I will not print out homeworks that come to me by email. In computing the homework component of your course grade, I will drop your two lowest homework scores, so you can get a 0 on two homeworks without harming your overall grade. Use this slack wisely! Note also that you may lose points off of your homeworks if you make a habit of coming in late on days when homeworks are due.

7.3 Attendance

Attendance will be taken at each lecture. While lecture attendance and participation are not officially components of the course grade, they can help in borderline cases to tip you into a higher grade category. If you are consistently absent or late, points may be deducted from your final grade; I will notify you if you are on the verge of losing points in this way. Students who need to miss class for religious reasons should consult the summary of the relevant state law on page 49 of the *Bulletin*.

7.4 Classroom Etiquette

We come together as a class to teach, and to learn from, one another; and our behavior in the classroom should always be consistent with that purpose. We must always, of course, strive to treat one another with the courtesy and respect which we are due as human beings and as members of the College community. Less obviously, there are apparently trivial actions that can have non-trivial negative effects on the class and so should be avoided. These include: consistent late arrivals, carrying on extraneous

conversations, texting/instant messaging, doing outside work, getting up and walking out in the middle of class, not turning your cell phone off before class begins and (worse yet) leaving class to take a phone call. Unless your hearing is impaired, you will be expected to remove all headphones and earpieces when class begins. If you violate these guidelines you are disrupting class; if you do so persistently, it can harm your grade. Again, you will receive advance warning before grade penalties are incurred.

7.5 Academic Integrity

The faculty and administration of Brooklyn College support an environment free from cheating and plagiarism. Each student is responsible for being aware of what constitutes cheating and plagiarism and for avoiding both. The complete text of the CUNY Academic Integrity Policy and the Brooklyn College procedure for implementing that policy can be found at this site:

<http://www.brooklyn.cuny.edu/bc/policies>

If a faculty member suspects a violation of academic integrity and, upon investigation, confirms that violation, or if the student admits the violation, the faculty member **MUST** report the violation.

7.6 Incompletes

Incompletes will be granted only in exceptional circumstances. Please note that in order to be eligible a grade of INC, you must have completed most of the work for the class.

8 Communication

All documents handed out in lecture will also be emailed to the class and posted on Google Docs. When I post a document I will share it with the class by emailing everyone a link to it. There will also be a link to the document on our course blog:

<http://bc-symbolic-logic.blogspot.com>

The blog is private, as is access to the course documents on Google Docs. In setting all of this up I have used the email addresses I was given in the course roster on the Brooklyn College Portal, unless you provided me with a different one. It is your responsibility to notify me if your email address changes, or if you are having any difficulties with class-related communication (not receiving class emails, having trouble getting documents off of Google Docs, etc). There will be a complete listing of posted documents on the blog, so that you can easily check to see if you have missed anything.

You will receive an invitation to be listed as a reader of the blog; you will not have access to it until you have responded to that invitation. In addition to giving a listing of, and ready access to, all course documents on the blog, I may also post additional comments or explanations there about issues that arise in class. I will also provide discussion threads in which you can ask, and I can answer, questions that come up in between class sessions.

9 Disability Services

In order to receive disability-related academic accommodations students must first be registered with the Center for Student Disability Services. Students who have a documented disability or suspect they may have a disability are invited to set up an appointment with the Director of the Center for Student Disability Services, Ms. Valerie Stewart-Lovell, at 718-951-5538. If you have already registered with the Center for Student Disability Services please provide me with the course accommodation form and discuss your specific accommodation with me.

10 General College Information

Please be aware of the following important dates on the College's Academic Calendar:

- *Friday, February 8*: Last day to add a course
- *Friday, February 8*: Last day to apply to take Fall 2012 and Winter 2013 ABS final examinations
- *Friday, February 8*: Last day to file Pass/Fail application
- *Friday, February 15*: Last day to drop a course without a grade

- *Friday, March 15*: Last day to file for Spring 2013 Graduation
- *Friday, April 12*: Last day to apply for withdrawal from a course with a W (non-penalty) grade
- *Thursday, April 25*: Last day to resolve Fall 2012 and Winter 2013 Incomplete grades and ABS grades

Other things to note:

- Late-Adds will not be accepted after the Late-Add period under any circumstances (except for acknowledged College error)
- All students should read carefully and thoroughly the 2012–2013 Brooklyn College *Bulletin*, especially pp. 27–74, for a complete listing of academic regulations of the College