

PHIL0180: INTRODUCTION TO MODERN LOGIC
MIDDLEBURY COLLEGE
Fall 2020
Online

Kareem Khalifa, PhD

Email: kkhalifa@middlebury.edu (far more reliable than telephone)

Course Website: <http://sites.middlebury.edu/logic>

(also: go/logic/; all lecture notes are posted here)

Instructor Website: <http://kareemkhalifa.com>

(also: go/khalifa/)

Course Description: Logic is concerned with good reasoning; as such, it stands at the core of the liberal arts. We will develop our reasoning skills by analyzing arguments found in conversation, newspapers, political debates, academic discourse, and popular culture, as well as by formulating our own. We will also use the formal techniques of modern propositional and predicate logic to codify many of our strategies for reasoning.

Course Objectives: I have two principal objectives:

- (1) To cultivate your critical thinking skills. By critical thinking skills, I include the abilities to recognize, analyze, and criticize arguments in the contexts of reading, writing, thinking, and discussion. I expect you to do this not only with others' positions but, more importantly, with your own positions.
- (2) To encourage you to be active learners. By an active learner I mean a person who has the curiosity, confidence, and passion to take the initiative to seek information that will make the recognition, analysis, and criticism of arguments—once again, both others' and your own—more poignant, penetrating, and insightful.

Evaluation:

We will meet our course objectives through homework, problem sets, and participation. Here is the breakdown of their relative weights:

Homework:	65%
Problem Sets:	15%/each x 2 problem sets = 30% of final grade
Participation:	5%

Alphabetic grades will then be assigned according to the following scale:

	87.5-89.4: B+	77.5-79.4: C+	59.5-69.4: D	0-59.4: F
92.5-100.0: A	82.5-87.4: B	72.5-77.4: C		
89.5-92.4: A-	79.5-82.4: B-	69.5-72.4: C-		

There is no rounding up or down of final grades. Rounding occurs only for the final grade, i.e., individual assignments, tests, etc. are not rounded.

A. Homework

Homework is an essential part of this course. Improving your critical thinking skills is a lot like improving your jump shot, golf swing, guitar technique, abs, etc.—*it requires practice*. Generally, homework assignments are your first opportunity to test your understanding of the readings. They allow you to identify areas of confusion that you should then communicate to me so that I can help you to better understand the material. As a result, struggling through homework is not necessarily a cause for concern. Just keep working at the material and asking questions as they arise, and you'll achieve the objectives of the course.

You will submit all homework assignments *electronically*. (Details of how to do this are incorporated into the schedule of readings and assignments.) Here are some important things to note about homework:

- (1) The program that we use, *Submit* (and its corresponding website, *Grade Grinder*), is very forgiving. You can try a problem, submit it, and the program will tell you whether or not you've made a mistake. You can then fix your mistake and re-submit the homework. You can do this repeatedly until you get the homework correct. Let me walk you through the process for doing so:
 - (a) In *Submit*, select the homework assignment you are working on.
 - (b) Click on the button that says "Submit Files."
 - (c) A dialogue box will open and give you the option to either send the grade report to "Just Me" or "Instructor Too." For each homework, first send the report to "Just Me." *Submit* will send you an email telling you if you got the answers right. If not, fix your homework and send again to "Just Me." Repeat this process until *Submit* tells you that all of your answers are correct.
 - (d) Once you've gotten all of the answers right, click on the option "Instructor Too." This guarantees you get 100% on the assignment.

Hence, if you are persistent, you will have automatically banked 65% of your total points in this course. *I strongly recommend that you bank these points.* Think about this: this means that if you simply get 80% on your two problem sets and do not participate at all, you've earned a 89% (B-plus). However, this is not only for the purposes of getting a good grade. It is also an important way to learn the material.

- (2) When I've taught this course in person, I've used a "flipped classroom" model. On more traditional models, professors lecture on the material first, and then students do homework that test their understanding of the lecture's content. On the flipped model, students first read the relevant material and do the homework assignments, and then "lectures" are used to clarify any subsequent misunderstandings.¹ I've found this to be a very effective model in the past, so I am using it in this online format.
 - a. Note that this goes hand in hand with the forgiving nature of *Submit*: you work through the problems, learn from your mistakes, and then any remaining questions can come to me.

B. Problem Sets

There will be two problem sets. These will be designed to test your ability to apply the key concepts of this course to arguments you might engage or produce in other contexts. Details about these problem sets will be provided closer to their submission dates.

C. Participation

Although this is fully asynchronous online course, there is still room for participation. To see a few ways to do so, let's think about the three days you have for each assignment:

- *Day One:* You do the reading and all of the "You Try It" exercises in our textbook. If you're stumped, use the Discussion Board. Other students should answer your question.
- *Day Two:* You try to do the homework. Recall that you can get some problems wrong and fix them before submission. If you're stumped, use the Discussion Board. Other students should answer your question.
- *Day Three:* Submit your homework.

So, the Discussion Board is the main source of your participation grade. Let's look at the different ways you can earn participation points:

- (1) You can post a question on the Discussion Board. In doing so, please try to ask the most specific question you can.
 - a. For example, if at all possible, ask something more specific than "Can someone please help me with Exercise 1.4?" Instead, try this: "I tried to doing X to solve Exercise 1.4, but Grade Grinder is telling me Y . Can someone please help me understand the difference between X

¹ If a flipped classroom model in an online environment has unforeseen drawbacks, I will revise the timing of the course accordingly.

and Y ?” X and Y are very easy pieces of information to get once you try a problem out and run it through *Submit*.

- (2) You can answer another student’s question on the Discussion Board. In doing so, you *should not* provide solutions to specific homework problems. However, you can create an analogous problem and show how you would solve that. (This is actually pretty fun.)
- (3) You can improve upon an existing answer on the Discussion Board.

I will assign your participation grade based on the quantity and quality of your contributions to the Discussion Board. You may also earn participation points by reaching out to me via email or Zoom, but please note that using the Discussion Board is more beneficial to other students and saves me the time of having to repeat myself. (I may also ask if I can record our Zoom conversation and post it if I think you are asking a question that will be useful to others.)

After every homework assignment deadline, I will look at the Discussion Board, and address lingering concerns. Additionally, from time to time, I may add questions to the Discussion Board, just to see how active it is. Just treat my questions like anybody else’s.

To show that you have read the syllabus, it is a *required* assignment that you post a YouTube video of your favorite instrumental song on the Discussion Board as a reply to the post labeled “Get Comfortable Posting.”

Note on Collaboration:

Working together on homework and problem sets is strongly encouraged. However, you should collaborate only after each collaborator has worked individually through the assignment. The collaboration process should consist of comparing answers and discussing differences in the reasoning informing those answers. At no point should you be copying another student’s work. On problem sets, be aware of the following policy: if you make the same weird mistake as someone else, I will not only deduct points for getting it wrong, but additional points for collaborating poorly. Specifically, if n people make the same weird mistake, then the penalty will be multiplied by n . This is to encourage collaboration that will decrease the number of weird mistakes, and to discourage collaboration that propagates weird mistakes. When we get to the first problem set, remind me to tell you what counts as a “weird mistake.”

Additionally, remember that homework assignments serve as a helpful diagnostic tool for me. Thus, if your homework indicates that you understand the material, but only because you collaborated with someone else, you remove my most effective way of pinpointing potential trouble spots for you. It becomes increasingly incumbent upon you to approach me in these cases.

Feel free to ask for clarifications about this policy.

General expectations of student behavior:

Participation also includes behaving like an adult. This includes exhibiting the virtues of civility, accountability, responsibility—particularly as these virtues apply to your education. For most of you, this is second nature. However, for the few of you who have not yet shed your adolescent tendencies, please note that failure to behave like an adult will be reflected in your participation grade. This includes taking the required initiative and responsibility of your workload in the event that you need a Dean’s Excuse (see below).

Email etiquette/decorum:

Different professors have different expectations about how they are addressed, and especially how they are addressed in email correspondences. If you are not clear what a professor’s expectations are, use the template described here:

<https://medium.com/@lportwoodstacer/how-to-email-your-professor-without-being-annoying-afcf64ae0e4087>

I consider my norms to be “semiformal,” i.e. I expect some form of salutation with some acknowledgment that I’m a professor, but within those constraints, you can be fairly colloquial. For instance, the following are all perfectly good ways to start an email: “Dear Professor Khalifa,” “Hey Prof,” “Hi Dr. K,” “Howdy Most Esteemed Educator,” etc. What’s not acceptable is an email either lacking a salutation or failing to acknowledge the fact that I’m a professor. This reads as if I’m a waiter taking your order, which is not a good professor-student dynamic. Examples of bad email introductions include diving into your email without addressing me at all, “Hi,” “Hey,” “Hello,” “Hello Kareem,” “Khalifa,” “Hey Khalifa,” etc. Just so you know, I *don’t reply to emails* if they don’t follow these very basic rules of decorum. Similar rules apply in face-to-face interactions.

Also, a general rule: most professors (including myself) don’t like to answer emails about logistical issues (how something will be graded, how to access a file, when something is due, etc.) in which the student could have read the syllabus, searched the internet, or asked a classmate in roughly the same amount of time it would take them to write and wait for a reply to an email. This is not a good use of your time (since you often could get the answer to your question more quickly with a little more effort) and it’s definitely not a good use of my time. Here’s my rule: if you send me one of these emails, I will send you a YouTube video of an 80’s pop song. You have two choices at this point: (1) you can go search for the lyrics to this song, and email them back to me. After that, I will answer your original query. (2) Alternatively, you can spend the same amount of time searching for the answer to your original query.

All in all, I prefer face-to-face interactions, where we’re talking about the content of the course. So, wherever possible, you should try to meet under these conditions.

Dean’s Excuses:

There are exceptions to certain deadlines (e.g., illness, family emergency). However, they require a Dean’s Excuse. The Dean’s Excuse serves the following functions in my course:

- As official documentation to me that your reasons for handing in a tardy assignment are legitimate;
- A mandate for you to initiate a conversation with me about how you will make up any assignments that you’ve missed.
- A mandate for you to initiate this conversation as soon as possible.
 - In general, I prefer that you speak with me *prior* to my receiving a Dean’s excuse.
 - “As soon as possible” should be read “within a week in which I receive the Dean’s Excuse,” circumstances permitting. If you can attend class, then your circumstances permit you to speak with me about any work you need to make up.

A Dean’s Excuse does NOT serve the following functions in my course:

- A permission slip for you to hand in your assignment at your earliest convenience.
- A mandate for me to seek you out in order to initiate a conversation with you about how you will make up any assignments that you’ve missed.
- Failure to respect these guidelines will result in a reduction of your participation grade AND the relevant assignments.

Objections to grades:

If you object to a grade you receive, send me an email with the parts of your assignment where you think I was being unfair. Provide reasons why my assessment was not fair. The email should also include times when you can meet over a one-week period. I will not discuss grades without reading an email first. This process should not be adversarial; rather, it is an extended application of your critical thinking skills. These policies are intended to facilitate clarity and communication, as well as to guarantee that I respond as thoughtfully as I can to your queries and concerns.

Honor code

You are expected to abide by all the rules of Middlebury College's honor code. Failure to do so will lead to reporting you to the proper university authorities.

ADA Statement

Middlebury College seeks to provide reasonable accommodations for qualified individuals with documented disabilities. Students who have Letters of Accommodation in this class are encouraged to contact me as early in the semester as possible to ensure that such accommodations are implemented in a timely fashion. For those without Letters of Accommodation, assistance is available to eligible students through Student Accessibility Services. Please contact Jodi Litchfield or Courtney Cioffredi, the ADA Coordinators, for more information: Courtney Cioffredi can be reached at ccioffredi@middlebury.edu or 802-443-2169 and Jodi Litchfield can be reached at litchfie@middlebury.edu or 802-443-5936. All discussions will remain confidential.

Texts/Software

Barker-Plummer, D., Barwise, J., & Etchemendy, J. (2011). *Language, proof, and logic*. Palo Alto, CA: Center for the Study of Language and Information.

The book also comes with a software manual.

The book is available for purchase [directly from the press](#) and on [Amazon](#). If you buy from the press, **do not** purchase *Logical Reasoning with Diagrams and Sentences* or *Tarski's World*. Only buy *Language, Proof, and Logic*. Also, you **cannot** buy a *used* copy of this textbook, since you need your own Registration ID to use the software—including the software that grades your homework.

While you must buy a copy of this book (either in PDF or paperback), you may also access copies here:

<http://sites.middlebury.edu/logic/readings/>

This is password protected. The password is: logic-phil180

Schedule of Readings and Assignments:

The schedule or readings is available here:

<http://sites.middlebury.edu/logic/schedule/>

Please note that the schedule is subject to change, so monitor this webpage closely.