

Philosophy 10: Introduction to Logic

Fall 2019. UCSD

Time: MW 11-11:50am Room: York 2722

Instructor: **Cami Koepke**

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Office: HSS 7038

Office Hours: **M 12pm-2pm**

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1. Discussion Section and TAs

TA	Sections	Office Hours & Location	Email
JiMin Kwon	A01 M 9-9:50am CSB 004 A02 M 4-4:50pm York 4080A	M 10-11am T 1-2pm HSS 7039	hjkwon@ucsd.edu
Leo Moauro	A03 W 9-9:50am CSB 004 A04 W 5-5:50pm York 4080A	MW 10-11am HSS 7089	lmoauro@ucsd.edu
Marcus McGahhey	A05 F 11-11:50am CSB 004 A06 F 2-2:50pm CSB 004	MF 12:30-1pm HSS 7043	mmcgahhe@ucsd.edu

2. Short Description

Content: This course consists of six parts of roughly equal length. In the first four parts we will cover the basics of formal sentential logic, including translations into formal notation, truth tables, and proofs. In the 5th part we will study informal reasoning, focusing on ways that it can commonly go wrong. The sixth part will cover cognitive biases. *Note that students in this class are expected to complete their own work on all in-class quizzes and the final exam, and not copy from other students or any other source, nor allow other students to copy from them. This sort of copying is plagiarism and constitutes a violation of class and University academic integrity policy.*

Structure: There are two lectures per week, and several discussion sections. Grades are based on five quizzes given in class and one final exam.

3. Text, lecture videos, and other materials

Textbook: The text for the course is *Basic Sentential Logic, Informal Fallacies, and Cognitive Biases* (BSIC), which is available at UCSD bookstore. This text is concise and covers everything you will need to know, and nothing that you won't need to know. The text also contains practice quizzes for all quizzes (and solutions) and a practice final exam, with solutions. So of all the materials for the course, it is probably the most important.

WRITE YOUR NAME IN YOUR TEXTBOOK! It doesn't happen super often, but from time to time students leave books in lecture or sections or office hours. It's a lot easier to get it back to its owner if there is at least a name there (name + email is even better).

Lecture Videos: Also, all lectures -- including video, and pdfs of powerpoint slides -- are available for viewing/download. Links are also below in the schedule.

The Youtube channel that has all the lecture videos is here:

https://www.youtube.com/channel/UC_jOluHMn7INuN6S6IWBGjw

Exercises: There are a huge number of exercises for each chapter. Rather than put all of these in the textbook (which would add a lot of pages, making it not only heavier but also more expensive) they are online. You can find links to the exercises and solutions for each chapter on the appropriate row of the schedule below.

4. Schedule

The following schedule is subject to change. The dates of quizzes may have to be changed for any of a number of reasons. This doesn't happen frequently, but it does happen from time to time. Therefore, ***you should plan to be available for all of these sessions.*** Schedule family vacations or whatever else on a day that this class meets at your own risk. *If the schedule changes such that a quiz falls on a day that you were planning to not be available, this does not constitute a legitimate excuse for missing the quiz.* See the 'missed quizzes' section below for more detail. If any quiz days change, these changes will be announced on the course Canvas page (see below) as soon as possible.

The lecture sessions are 50 minutes. Quizzes 1-5 are designed to be relatively short, typically taking no more than 25 minutes. Quizzes will be given during the first half of the specified lecture session. On days where there is a quiz, when you are finished with the quiz you can leave. There won't be any lecture after the quiz.

	Exercises, Optional Material, etc.	Videos	Slides
<p>Chapter 1</p> <p>9/30 BSIC Ch 1 10/2 BSIC Ch 1 10/7 BSIC Ch 1 10/9 QUIZ 1</p>	<p>Ch. 1 Exercises (online HTML)</p> <p>Ch. 1 Exercises (65 page PDF)</p> <p>Chapter 1: Optional Material</p>	<p>Intro Lecture</p> <p>What is logic? (15 min)</p> <p>Ch 1, Sect. 1.1 (33 min)</p> <p>Ch 1, Sect. 1.2.1 (16 min)</p> <p>Ch 1, Sect 1.2.2 & 1.2.3 (6 min)</p> <p>Ch. 1, Sect. 1.2.4 (10 min)</p> <p>Ch. 1, Sect. 1.2.5 & 1.2.6 (17 min)</p> <p>Ch. 1, Sect. 1.2.7 (12 min)</p> <p>Ch. 1, Sect. 1.2.8 (9 min)</p> <p>Practice Quiz 1</p>	<p>Course Intro</p> <p>Info about how the class will operate</p> <p>What is Logic?</p> <p>Intro to class material</p> <p>Chapter 1 Slides</p>
<p>Chapter 2</p> <p>10/14 BSIC Ch 2 10/16 BSIC Ch 2 10/21 QUIZ 2</p>	<p>Ch. 2 Exercises (online HTML)</p> <p>Ch. 2 Exercises (146 page PDF)</p> <p>Ch 2: Optional Material</p> <p>'Unless' Conditionals</p>	<p>Sections 2.1 & 2.2</p> <p>Section 2.3</p> <p>Section 2.4</p> <p>Section 2.5</p> <p>Section 2.6</p> <p>Sections 2.7 & 2.8</p> <p>Practice Quiz 2</p>	<p>Chapter 2 Slides</p>

<p>Chapter 3</p> <p>10/23 BSIC Ch 3 10/28 BSIC Ch 3 10/30 QUIZ 3</p>	<p>Ch. 3 Exercises (online HTML)</p> <p>Ch. 3 Exercises (107 page PDF)</p> <p>Chapter 3: Optional Material</p>	<p>Sections 3.1-3.4 (A) MP and DS (21 min) Sections 3.1-3.4 (B) Why Proofs work (13 min) Sections 3.1-3.4 (C) MT and DI (17 min) Sections 3.1-3.4 (D) Simp and Conj (15 min) Sections 3.1-3.4 (E) Dos and Don'ts (11 min) Section 3.5 Conditional Proof (27 min) Section 3.6 Subproof Frames (9min) Practice Quiz 3</p>	<p>Chapter 3 Slides</p>
<p>Chapter 4</p> <p>11/4 BSIC Ch 4 11/6 BSIC Ch 4 11/13 QUIZ 4</p>	<p>Ch. 4 Exercises</p> <p>Chapter 4: Optional Material</p>	<p>Sections 4.1-4.4 Section 4.5 Section 4.7 Section 4.8</p>	<p>[Ch 4 Slides]</p>
<p>Chapter 5</p> <p>11/18 BSIC Ch 5 11/20 BSIC Ch 5 11/25 QUIZ 5</p>	<p>Ch. 5 Exercises</p> <p>Chapter 5: Optional Material</p>	<p>[Vid for 5.1-5.3] [Vid for 5.4-5.9] [Practice Quiz 5]</p>	<p>[Ch 5 Slides] [Anncy's Slides]</p>
<p>Chapter 6</p> <p>11/27 BSIC Ch 6 12/02 BSIC Ch 6 12/04 BSIC Ch 6</p>	<p>Ch. 6 Exercises (online HTML)</p> <p>Ch. 6 Exercises (57 page PDF)</p> <p>Chapter 6: Optional Material</p>	<p>[Vid for 6.1-6.4] [Vid for 6.5-6.7]</p>	<p>[Ch 6 Slides]</p>

Final Exam <u>EARLY</u> tbd <u>REGULAR:</u> Day: Tu 12/10 Time: 11:30am-2:29p m Room: TBD	Some additional final exam practice questions		
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5. Quizzes, final exam, grades, etc.

There are six chapters in the text. Chapters 1-5 will each have a quiz worth 100 points, and a section on the final exam worth 50. Chapter 6 will not have a separate quiz, but will have 150 points worth of questions on the final exam. So each chapter has a total of 150 points associated with it. And there are 6 chapters. So that is 900 points total.

Chapter 1:	Quiz 1 = 100 points	+	Final Section 1 = 50 points	=	Total: 150 points
Chapter 2:	Quiz 2 = 100 points	+	Final Section 2 = 50 points	=	Total: 150 points
Chapter 3:	Quiz 3 = 100 points	+	Final Section 3 = 50 points	=	Total: 150 points
Chapter 4:	Quiz 4 = 100 points	+	Final Section 4 = 50 points	=	Total: 150 points
Chapter 5:	Quiz 5 = 100 points	+	Final Section 5 = 50 points	=	Total: 150 points
Chapter 6:	n/a	+	Final Section 6 = 150 points	=	Total: 150 points

Letter Grades and Curve

Letter grades will not be assigned until after all points are in.

The worst-case scenario will be a straight 10% breakdown, that is, 90%-100% will be As (A-, A), 80%-89.9% will be Bs (B-, B or B+), and so on. However, depending on the class average and grade distribution, the cut-offs **may** be curved slightly in your favor. For example, hypothetically, if the class average is low enough, scores as low as 87.5% may get an A-. But in no case will the cut-offs move higher than a straight 10% breakdown, so that is the worst-case scenario as far as you are concerned.

The table below shows the highest-possible and lowest-possible cut-offs for every letter grade. The actual letter grade cut-offs will be between these. Whether or not there is a curve will not be known until all quizzes and the final are graded and recorded, since that is when I will know the average and distribution. Note that the highest grade achievable in the normal way is an A. (See below for how to get an A+.)

Letter Grade	Default Cut-off	But could curve as low as		Letter Grade	Default Cut-off	But could curve as low as
A	93%	91.5%		C+	77%	71%
A-	90%	87.5%		C	73%	66.5%
B+	87%	83.5%		C-	70%	62.5%
B	83%	79%		D	60%	50%
B-	80%	75%		F	0	0

Optional Material (Note, this is **NOT** 'extra credit'!!)

Each chapter has a couple of optional topics, and each quiz and the final will have some questions on this optional material. This material is similar to the material in each chapter, but goes into more depth. Most students should probably not worry about the optional material, and instead learn the regular material as well as they can and maximize their points that way. The optional material is intended for philosophy majors, math majors, computer science majors, anyone who will take courses in advanced logic, and anyone else who finds the regular material fairly straight-forward and wants to explore the topics in a little more depth. Here's the way it works:

1. The optional material for each chapter is not in the text. You can find the links to the material for each chapter in the schedule above.
2. I will not lecture on the optional material, and the TAs will discuss it at most only a small amount in discussion sections. Lecture and sections are devoted to the core material. But you are welcome to come to my office hours or the office hours of any of the TAs to discuss the optional material if you want.
3. Each quiz will include 1 question on the optional material from the corresponding chapter, and the final will have 5 questions on the optional material covering all chapters. For a total of 10 questions on optional material.
4. Each of the optional questions will be worth 10 *puntos*. Not points, because we will keep separate track of points earned on the core material, and any puntos earned on the optional material. Puntos don't just get added to points. They are separate parts of the grading process. So there will be 100 puntos possible.
5. Any student who gets 85 puntos or more on the optional material will have their letter grade bumped up $\frac{2}{3}$ of a letter grade. So for example, a B+ would be bumped to an A.
6. Any student who gets between 70 and 84.9 puntos will have their letter grade bumped up $\frac{1}{3}$ of a letter grade. So for example, an A would be bumped to an A+.

So the grade bumping is only going to take effect for a student who gets at least 70% on all the optional questions. Which means that unless you are planning to make a serious effort

on the optional material throughout the class, don't worry about the optional questions.

I can't stress this enough: *For 80% of the students in the class, they should not worry about the optional questions on any of the tests, and not worry about that part of the grading policy. Most students are best served by focusing on the regular material, and making sure they get as high a percentage as they can on the regular material. You can get an A in the class without touching any of the optional questions.*

And if your grasp of the regular material isn't very good -- meaning if you aren't getting at least 85% - 90% on the quizzes anyway, then any time you spend on the optional material is going to hurt you. You should be focusing on the regular material.

That said, I invite all students to *read* the optional material. Some of it may not make sense, some of it will, but hopefully at least some of it will be interesting. But unless you're crushing the regular material, don't worry about the optional questions on the tests. Focus instead on getting the grade you want by making sure you know the regular material very well.

Special pleading at the end of the course will have no effect.

Every quarter a certain number of students who apparently need to pass the class in order to graduate or remain eligible for some sort of aid, or whatever, miss the C- cut-off, or the D cut-off, or whatever it is that they need. Some of these students are then unable to graduate, or maintain eligibility for something, etc. If this is your situation then you need to make sure you pass the class, or get whatever grade it is you need to get. We have office hours and are happy to help if you are having trouble with the material; practice quizzes are available for you to assess your own level of preparation. The TAs and I are happy to spend time with anyone to help them get a handle on the material so they can do well on the quizzes and final. But it is *your responsibility* to attend lecture, attend sections, study the material, do problem sets, and take practice quizzes and final, and and come to office hours if you need help. And if you need help, the sooner you get help the better. If you are tanking and you wait until week 8 or 9 or 10 to get help, it could be too late.

We will NOT adjust grades after they have been assigned, except in cases where an actual error of some sort has been made (for example, if we added the points incorrectly on a quiz). See the section below on how to do well in this course for more advice on how to make sure that you pass the class. It is no fun being unable to graduate because you missed a C- by 1 point out of 900, and I don't like having to be the one who fills out the D or F on the grade sheet. So do us both a favor and be certain that you learn the material well enough to pass the class -- or get whatever grade it is you need to get. I apologize for the negative tone of this paragraph, but I take it that the vast majority of the students in this class who work hard and study the material do so on the assumption that the grade they earn on that basis means something. They are depending on me to not do things like give some other student the same grade just because this other student did some lobbying after the quarter was over. Every student's grade is determined by the points they receive,

including those who miss a grade cut-off by 1 point (or less) out of 900. I am spending so much time on this topic because, as I said, I don't like being the one who fills out the F or D on the grade sheet for a student who was planning to graduate, has a job lined up, or is on the borderline of eligibility, etc. So please, study, attend lecture, do the practice quizzes and practice final, go to section -- and ask questions if there is stuff you don't understand. See me or the TAs when you need help. We're actually very nice people, and we want you to succeed. Don't take a risk by not studying, skipping lectures or homework, and try to estimate how much you can slack off and 'probably' still pass. To sum up: the time to come see me (or your TA) is *before* you get the bad grade, enough before so we can help you to not get the bad grade. Seeing us after is too late.

Missed quiz policy

Quizzes are given in class on the days and times specified on the syllabus (or announced on Canvas in case of a change to the schedule) only. **No make-up quizzes, either after the scheduled time or before the scheduled time, are given.** If you are unable to be there at the specified time to take any of quizzes 1 through 5 *for a legitimate reason, such as car accident, serious medical injury, or illness that you can verify with a doctor's note*, the points you miss can be made up in the following way: The final exam has sections that correspond to material from each quiz -- each worth 50 points. If a student misses a quiz for a legitimate reason, then the points that the student earns on the section of the final that corresponds to the missed quiz will be multiplied by 2, and that number used for the student's missed quiz score (because $50 \times 2 = 100$). So for example, if you miss quiz 3 for a legitimate reason, then that is 100 points you missed. And on the final, if you get 40/50 points on Section 3 of the final, then we will multiply that by 2 to get 80/100. And so we will fill in your quiz 3 score with an 80. ***Legitimate reasons include serious illness with a doctor's note. Personal travel plans that conflict with the schedule, forgetting about the quiz, etc., are not legitimate excuses.***

If you miss a quiz for a non-legitimate reason, such as a vacation or oversleeping, you can make the points up on the final exam with a 15% penalty, meaning that rather than multiplying the score on the relevant part of the final by 2, we will multiply it by 1.7. So if you missed quiz 3 for an illegitimate reason and got 40 points on Section 3 of the final, we'd multiply that by 1.7 to get 68, and use that number as your quiz 3 score.

For the final exam: if you have a schedule conflict, or just want to take it early, please take the early final exam (details below). If you end up having to miss the final exam for medical reasons, you can be given an incomplete in the class that you will need to make up the following quarter.

Adding the class late such that you miss one or more quizzes counts as a non-legit excuse. If you are on the wait list, you will probably get into the class if you are first or second when classes begin. Odds are decent if you are 3-5. If you are not sure if you are going to enroll in the class, you should still take the quizzes just to be safe.

IF YOU FEEL ILL before a quiz, please carefully consider whether you wish to take the quiz or not. Once a student sits for the quiz, then whatever is written on their quiz paper counts as their quiz. It is too late at that point to decide you want to skip the quiz for medical reasons. If you feel ill, you are welcome to make up the points on the final as per the policy discussed above.

Section Participation

Sections are optional, in that students are not required to attend sections. And in fact you can attend any section you want, not necessarily the one you are officially enrolled in. However, it is a good idea to attend and participate, and so here is one concrete thing that should encourage you.

Academic integrity and requirements for taking the quizzes and final exam

No notes or books or other materials are allowed during any quiz or the final. You will need only writing implements. Pen or pencil is fine. Don't even bring blank sheets of paper with you. We'll have extra sheets of blank paper with us if you need more space. All work should be written on the test itself (or extra sheets we give you if you need more space), as instructed.

Early Final Exam

In order to help accommodate students with scheduling issues, plus any students who just want to take the final early, an early version of the final will be given, usually 4 - 7 days before the normally scheduled exam, depending on the final exam schedule. Exact place and time will be announced in class and on Canvas. Anyone can take the early final who wants to. No need to reserve a spot or tell me beforehand. Just show up at the place and time (which will be announced), and take it. But note: it is NOT a practice final. So don't show up for the early final thinking you'll just practice but then take the regularly scheduled final also. You can only do one.

6. Online Announcements

This course uses Canvas. Know how to access your account and check for messages. Make sure you adjust the settings so all announcements are also sent to you via e-mail. That way, you will get all announcements as they are made. Don't worry, only I and the TAs can post, so you won't be getting any spam.

If for whatever reason you don't wish to sign up, that is OK. You can still visit the page to read any announcements without signing up. But since the announcements won't be emailed to you, you will have to remember to visit the page *often* to read the announcements. Remember, *you are responsible for any information or announcements posted to Canvas.*

7. How to do well in this course

- A. *Read the text before lecture.* Yes, the lecture and text are very similar. But going through the same ideas more than once is good. Also, even though the concepts and explanations are the same, the examples I use in lecture are mostly different from the examples I use in the text.
- B. *Attend discussion sections.* Bring questions with you if you have any. Ask questions in the sections. The sections are a great place to make sure you're on the right track, and get practice in.
- C. *Do plenty of exercises.* Each chapter has a load of online exercises and solutions. Start with the easy ones. Make sure you have them down before you move up to harder ones. A lot of students waste a lot of their time (especially in chapters 3 and 4) by starting with proofs that are too difficult, and they get frustrated. Start easy and slow, and work your way up.
- D. *Have a plan and stay on track.* Read the text, attend lectures and discussion sections, and don't wait until the day before a quiz or the final to start preparing by doing exercises. This class is very manageable if you just set a pace and stay on it.
- E. *As soon as you realize you are having any difficulties, get it addressed.* Ask about it in section, or come to office hours. The earlier you get help the better.
- F. *Memorize your section number, and read this syllabus.* When you signed up for the class, you signed up for section a01, or a02, or a03, and so on. If you know your section number, and correctly and legibly put it on all your quizzes and exams (and get your name right), that's 5 points per test, for a total of 30 points. **Basically, you get 30 free points for just knowing your correct section number. So memorize it.** There will also be some multiple choice questions concerning this syllabus on a few of the quizzes, and maybe the final. In total, about 15 or 20 points will be available through such questions. So read this syllabus!! The questions won't be super hard. My goal is to make questions that will be easy to answer for anyone who has read the syllabus. **So there's another 10 or 15 easy points!!!**
- G. *For each quiz and the final, a practice version is available in the text.* I recommend that before the actual quiz/final, you administer it to yourself, giving yourself only 25 minutes for the quizzes and 2 hours for the final. Then grade your quiz (answers are

also in the text). This will allow you to find what material, if any, you need to work on some more. Consult myself or your TA, or simply do more exercises of the type you need to improve on until you feel you have mastered this material.

Some students end up getting grades worse than they expect because they do not follow the above advice. *The material looks easy when you read through it or watch someone else work a proof or truth table, and many students then think "That looks easy, I'll be able to do that on a quiz." But as some students learn the hard way, watching someone do it is a lot easier than doing it yourself.* Practice, practice, practice. [Amazingly, I give people this advice every time I teach this class, and every time a large chunk of students still fall into exactly these traps.]

8. Information for OSD students

If you are a student approved by OSD for special accommodations, you need to coordinate with me beforehand. For students who need 1.5 times the regular test time, the usual practice for quizzes is to set you up in the philosophy department at the scheduled time, and for the final exam, 2 hours before the scheduled start time. The location is usually the department library. *But for EACH quiz for which you need accommodations (or the final), you should email me between 2 and 4 days prior to the quiz to set up and verify the time and place.* If I do not hear from you at least 2 days prior to the quiz, then I cannot guarantee that I will be able to provide special accommodations.