Philosophy 310: Introduction to Symbolic Logic
Fall 2019

Revised 26 August 2019

General information

Time: T Th 1:00–2:15 PM
Location: 3139 Wescoe

Instructor: Ben Caplan (he/him/his)
Office: 3079 Wescoe
Office hours: T Th 11:00–11:45 AM
                T 2:30–4:00 PM
                Or by appointment
Email: caplan@ku.edu

GTA: Si-Won Song (he/him/his)
Office: 3086 Wescoe
Office hours: M 11:00–11:59 AM, 3:00–4:00 PM
                W F 10:00–11:00 AM
                Or by appointment
Email: siwon.song@ku.edu

Course description

We will study sentential and predicate logic. We will learn three types of skills: (*i*) how to symbolize natural-language sentences (e.g. 'Elizabeth has dorgis and Meghan has a beagle', 'Someone who has dorgis is the grandmother-in-law of someone who has a beagle') in various formal languages; (*ii*) how to interpret those formal languages; and (*iii*) how to do proofs in those formal languages. These skills are learned, and we will learn them by working through many examples.

Required text and software

Terence Parsons's *An Exposition of Symbolic Logic: With Kalish–Montague Derivations* (August 2013)—otherwise known as *TerryText*—is available on Blackboard (under TerryText).

We will use Logic 2010. The software can be downloaded (for free) from https://logiclx.humnet.ucla.edu. You will need to use the software to submit homework assignments. Information about how to install and use Logic 2010 is on Blackboard (under Logic 2010).

Course requirements

10% of your grade will be based on homework. The remaining 90% of your grade will be based on two mini-tests, two group assignments, a midterm exam, and a final exam.

The mini-tests, group assignments, and exams will cover the following material.

Test, exam, or group assignment	Material covered	Chapters in *TerryText*
Mini-test 1	(1) Symbolization in sentential logic	Chapter 1.1, 1.3 Chapter 2.1–2.3
Group assignment 1	(2) Truth-tables	Chapter 1.2 Chapter 2.1, 2.10, 2.11
Midterm	(1) Symbolization in sentential logic	[see above]
	(2) Truth-tables	[see above]
	(3) Derivations in sentential logic	Chapter 1.4–1.8 Chapter 1.10, 1.11 Chapter 2.4, 2.5, 2.9
Mini-test 2	(4) Symbolization in predicate logic	Chapter 3.1–3.3, 3.5 Chapter 4.1, 4.2
Group assignment 2	(5) Countermodels	Chapter 3.4, 3.10 Chapter 4.9
Final exam	(4) Symbolization in predicate logic	[see above]
	(5) Countermodels	[see above]
	(6) Derivations in predicate logic	Chapter 3.6–3.9 Chapter 4.3

Grading

There will be 12 homework assignments. Each is scored out of 100 points. Your homework grade will be your total number of homework points (up to 1100), divided by 100—which is to say that you can earn up to 11 out 10 on homework assignments towards your final grade.

The mini-tests and the group assignments will be graded out of 15 points. The midterm and the final will have three sections, each graded out of 15 points.

Your homework scores will be available on the Logic Student Assignments & Scores page: https://logiclx.humnet.ucla.edu/Logic/Student/Course.

Your other scores will be available under My Grades on Blackboard.

Your final grade will be calculated based on the highest number of points you earn for a particular skill.

Skill or unit	The points you earn will come from …	Percentage of final grade
Homework	your total number of homework points (up to 1100), divided by 100.	10%
(1) Symbolization in sentential logic	whichever of the following you score **highest** on: mini-test 1, section (1) of the midterm, mini-test 2, and section (4) of the final.	15%
(2) Truth-tables	whichever of the following you score **highest** on: group assignment 1, section (2) of the midterm, group assignment 2, and section (5) of the final.	15%
(3) Derivations in sentential logic	whichever of the following you score **highest** on: section (3) of the midterm and section (6) of the final.	15%
(4) Symbolization in predicate logic	whichever of the following you score **highest** on: mini-test 2 and section (4) of the final.	15%
(5) Countermodels	whichever of the following you score **highest** on: group assignment 2 and section (5) of the final.	15%
(6) Derivations in predicate logic	section (6) of the final.	15%

Given the nature of the grading scheme, your total grade will not be calculated on My Grades on Blackboard. To see what your total grade is, you can use the grade calculator (on Blackboard under Grade Calculator). (It's an Excel spreadsheet. If you enter your scores, it will calculate your total grade.)

Numerical grades will be converted to letter grades using the following scheme.[1]

From	To	Letter grade
93.50	100.00	A
90.00	93.49	A–
86.50	89.99	B+
83.50	86.49	B
80.00	83.49	B–
76.50	79.99	C+
73.50	76.49	C
70.00	73.49	C–
66.50	69.99	D+
63.50	66.49	D
60.00	63.49	D–
00.00	59.99	F

---

[1] See Ben Eggleston, "Plus/Minus Grading," available at benegg.net/plus-minus_grading.pdf.

Dates and due dates

You will typically (but perhaps not invariably) have at least five days (e.g. Thursday to Tuesday) to complete each homework assignment. Due dates for the homework assignments will be posted on Blackboard (under Schedule) and will also be available on the available on the Logic Student Assignments & Scores page: https://logiclx.humnet.ucla.edu/Logic/Student/Course.

The mini-tests and the midterm exam will be held in class. The midterm will take up an entire class period; the mini-tests will not. The dates for the mini-tests and the midterm exam will be announced at least one week ahead of time, as will the due dates for the take-home group assignments. This information will be posted on Blackboard (under Schedule).

When the mini-tests and the midterm exam are held, and when the group assignments are due, will depend on when we cover the relevant material in class. One mini-test will be held, and one group assignment will be due, before the midterm; another mini-test will be held, and another group assignment will be due, after the midterm. The final exam will be on **Friday, 20 December 2019 from 1:30 PM to 4:00 PM** in 3139 Wescoe. (This is the last possible exam slot! It would not have been my first choice.)

Please bring an exam booklet with you to the midterm and the final. These can be purchased in the KU Bookstore (or the Hawk Shop in the Underground in Wescoe Hall).

Lateness policies

Late homework assignments won't be accepted under any circumstances. Unless you make arrangements with me beforehand, late group assignments won't be accepted. And, unless you make arrangements with me beforehand, you won't be able to take the mini-tests, the midterm, or the final exam for credit except on the scheduled dates. (This is in part to allow me to discuss the homework assignments, the group assignments, the mini-tests, and the midterm in class as soon as possible.)

To give you feedback, late group assignments can be corrected (but not graded), and make-up mini-tests and midterm exams can be administered and corrected (but not graded). (And you can get feedback from Logic 2010 on late homework assignments.)

A note about grading

On some standardized tests, there is a penalty for being wrong: you earn points for a correct answer, lose points for an incorrect answer, and neither earn nor lose points for no answer. The tests, assignments, and exams in this course are not graded in that way. There is no penalty for being wrong: you earn points for a correct answer, and *at worst* an incorrect answer is treated like no answer (that is, you neither earn nor lose points for it). So it is almost never to your advantage to skip a question. Even if you

don't feel 100% confident about your answer, you might be right, in which case you will earn full points. And, even if you haven't completely figured out how to solve a problem, if you show your work you can still earn partial credit.

It turns out that there is a significant difference between men and women: men are much more likely to guess when they don't know the answer. There is empirical evidence to suggest that this accounts for much of the reported gender differences in standardized test scores.[2]

A note about stereotype threat

Anxiety can hinder academic performance. And negative stereotypes can contribute to anxiety. In particular, negative stereotypes about a certain group can lead members of that group to be more anxious. If one negative stereotype is that members of that group don't perform as well academically, the negative stereotypes can become self-fulfilling. The process whereby negative stereotypes can hinder academic performance is known as *stereotype threat*.

Unfortunately, it turns out that it's easy to elicit stereotype threat. For example, it makes a huge difference whether students are told "This is a math test" or "This is a problem-solving task."[3] (By the way, this is not a math course. It's a course in problem-solving.)

Fortunately, it also turns out that talking about stereotype threat is a good way to combat it. For example, if students are put in a situation that elicits stereotype threat (e.g. by being told "This is a math test") but are also told about stereotype threat, that can make the effects of stereotype threat go away.[4] The words used in one study were "it's important to keep in mind that if you are feeling anxious while taking this test, this anxiety could be the result of these negative stereotypes that are widely known in society and have nothing to do with your actual ability to do well on the test."[5]

It's important to keep in mind that, if you are feeling anxious while taking tests or exams or while completing assignments in this course, the anxiety could be the result of negative stereotypes that are widely known in society and that have nothing to do with your actual ability to do well on the tests, exams, or assignments.

---

[2] See Katherine Baldiga, "Gender Differences in Willingness to Guess," *Management Science* 60.2 (Feb. 2014): 434–448.

[3] See Michael Johns, Toni Schmader, and Andy Martens, "Knowing Is Half the Battle: Teaching Stereotype Threat as a Means of Improving Women's Math Performance," *Psychological Science* 16.3 (March 2005): 175–179.

[4] See Johns, Schmader, and Martens, "Knowing Is Half the Battle."

[5] Johns, Schmader, and Martens, "Knowing Is Half the Battle," p. 176.

Accessibility

I'm committed to making this class as accessible as possible. If you have any particular accommodation requests, please speak to me as soon as possible.

Electronic devices

You are permitted to use laptops and other electronic devices in class, since some students prefer taking notes, or reading texts, on such devices.

However, students report that they find laptop use in class distracting. This includes laptop use by their peers.[6] (If you're browsing social media during class, you might find it interesting. So, apparently, might those around you.) More importantly, "A comparison of exam scores of students … suggests that permitting computers negatively impacts scores."[7]

If you use a laptop or other electronic device in class, please try to sit somewhere where your screen is less likely to be visible to others.

Concealed carry

If you carry a concealed handgun, familiarize yourself both with the relevant state and federal laws and with KU's weapons policy. See https://concealedcarry.ku.edu/information.

Academic misconduct

The university policy on academic misconduct is set out in Article II, Section 6 of the University Senate Rules and Regulations. Examples of academic misconduct include (but are not limited to) "giving or receiving of unauthorized aid on examinations … or other assignments," "knowingly misrepresenting the source of any academic work," and "plagiarizing another's work." Penalties for academic misconduct include receiving a failing grade for the course, being suspended from the university, and being expelled. For further details, see https://policy.ku.edu/governance/USRR #art2sect6.

---

[6] See Carrie B. Fried, "In-Class Laptop Use and Its Effects on Student Learning," *Computers and Education 50.3 (April 2008):* 906–914.

[7] Susan Payne Carter, Kyle Greenberg, and Michael S. Walker, "The Impact of Computer Usage on Academic Performance: Evidence from a Randomized Trial at the United States Military Academy," *Economics of Education Review* 56 (Feb. 2017): 118–132, at p. 124. See also Fried, "In-Class Laptop Use," p. 906.

Schedule

A detailed and updated schedule will be posted on Blackboard as we go (under Schedule). The precise schedule will depend on the pace at which we work through the material in class.

There is no class on Tuesday, 15 October 2019 (Fall Break) or Thursday, 28 November 2019 (US Thanksgiving).

The final exam is on **Friday, 20 December 2019 from 1:30 PM to 4:00 PM** in 3139 Wescoe.