

PHIL 310

Introduction to Symbolic Logic

Last updated: 23 August 2026

Instructor Contact Information

Instructor Name and Preferred Title: Prof. Ben Caplan

E-mail: caplan@ku.edu

Office: 3075 Wescoe Hall

Office Hours: W 3:30–4:30 PM, F 2:00–3:00 PM, or by appointment

Class Time and Location

Class Time: MW 2:00–3:15 PM

Class Location: 1007 Wescoe Hall

Semester: Fall 2026

Course Hours and Instructional Methods

Credit Hours: 3. Each credit hour corresponds to “a minimum of two hours of out-of-class student work each week for approximately fifteen weeks” (adapted from <https://policy.ku.edu/registrar/credit-hour>).

Instructional method: LEC. This is an in-person class. It will include lecture, in-class discussion, and group activities.

Course Description

An introduction to the theory and practice of elementary symbolic logic. Special emphasis will be placed upon the logical analysis of mathematical proof and upon a proof of the consistency of elementary logic.

Additional Course Description

We will learn, and learn about, sentence and predicate logic. (Sentence logic is sometimes also called “sentential” or “propositional” logic.) We will work on developing and understanding three interconnected abilities: (i) symbolizing English sentences (e.g. ‘Meghan has beagles and Harry has a black Lab’, ‘Someone who has beagles is married to someone who has a black Lab’) in two formal languages (i.e. the languages of sentence and predicate logic); (ii) interpreting those formal languages; and (iii) doing proofs (or “derivations”) in those formal languages.

Learning Outcomes

This course counts towards the Arts and Humanities goal of KU Core 34. Upon reaching this goal, students will be able to leverage sources, methods, and arguments in the arts and

humanities to deepen their understanding of, critically question, and effectively apply knowledge within these disciplines' foundational ideas. Examples of relevant skills and learning might include engaging with a wide array of critical frameworks, perspectives, and styles; evaluating historical, creative, and cultural narratives, performance, and other forms of artistic expression and exploration of the philosophical, cultural, archival, and stylistic underpinnings of these forms of expression.

Student responses to signature assignments may be used during the University Assessment Council's assessment of the KU Core 34 general education curriculum. (Names and student ID numbers will be removed prior to review by the University Assessment Council.)

The course also satisfies the Data Science Connectors requirement for the Undergraduate Certificate in Data Science.

Course Materials

We will be using a textbook: R. L. Simpson, *Essentials of Symbolic Logic*, 3rd ed. (Broadview, 2008). We will cover Chapters 2–5.

You will need to bring an exam booklet (sometimes known as a “Blue Book”) with you to Exam 1 and Exam 2. These can be purchased in the KU Bookstore (or the Hawk Shop in the Underground in Wescoe Hall).

Course Assignments and Requirements

Written work

Exam 1 (on sentence logic)	20%
Exam 2 (on predicate logic)	20%
Homework assignments	8%

Engagement and assessed activities

Engagement	15%	
Homework presentation	5%	
Other group activities (4)	32%	(8% each)

Exams

Exam 1 will cover (a) symbolization in sentence logic (Chapter 2, especially Sections 2.1–2.13); (b) truth-tables (Chapter 2, especially Sections 2.14–2.22); and (c) derivations in sentence logic (Chapter 3). Exam 2 will cover (d) symbolization in predicate logic (Chapter 4, especially Sections 4.1–4.17), (e) interpretations (Chapter 4, especially Sections 4.18–4.19), and (f) derivations in predicate logic (Chapter 5). There will be a review session prior to each exam.

Homework

There will be 9 homework assignments over the course of the semester. Homework assignments will generally be handed out in class on Wednesdays and due in person at the beginning of class on the following Monday (or the following Wednesday, if there is no class on the Monday). (I will hand you a piece of paper on the Wednesday and expect it back with your answers on it the Monday—or, in some cases, Wednesday—when it's due.) Your lowest homework score won't count towards your homework grade.

Engagement

You should attend class regularly and do the readings and homework assignments ahead of time. I'll have a sign-in sheet to keep track, but merely showing up to class and not paying attention doesn't count as engagement. Following class discussion counts as engagement, as does saying things like "Here's a thing I don't understand" or "Wait, how do we do that?" Coming to the review sessions and asking questions counts as engagement. Lending your notes to a fellow student counts, as does making arrangements to get notes from a fellow student if you miss a class. Talking to me after class, coming to see me during office hours, or asking me questions over email all count as engagement as well. If you are unable to attend class, please let me know ahead of time. Reaching out to me counts as engagement!

Homework presentation

The homework presentation is a group assignment. Once during the semester each group will be responsible for presenting answers to that week's homework, explaining how they solved the problems, and answering any questions other students might have about the homework. You'll get to (or have to) meet with me on the Friday before the Monday (or, in some cases, Wednesday) presentation to go over the homework and make sure that you understand the problems and answers. The homework presentation is intended to be short rather than exhaustive. The point isn't to put you on the spot; rather, it's to give you an opportunity to think, not only about *what* the answer is, but also about *why* that's the answer, and to think about how you might explain why that's the answer to others who aren't necessarily approaching the problem in exactly the same way as you are. In short, it's an opportunity to explain some of the material to your peers (and, in turn, to have some of the material explained by your peers).

There are eight homework presentation slots (four before Exam 1, four after). You will be able to sign up for a slot on Canvas.

Other group activities

There will be four other group activities. Two will be before Exam 1; two will be after Exam 1. The first group activity will cover (a) symbolization in sentence logic; the second, (b) truth-tables; the third, (d) symbolization in predicate logic; and the fourth, (e) interpretations. (The group activities won't cover (c) derivations in sentence logic and (f) derivations in predicate logic. These will be covered only on Exams 1 and 2, respectively.)

More information (including rubrics) about the homework presentation and the other group activities will be provided in class or on Canvas.

To put my cards on the table, the guiding assumption behind this course is that we're all human beings. As such, the course is designed to require you to do human things—like be engaged, work with other people, explain things to other people, and learn from other people—and not just submit technically correct written work.

General Assignment Information

- All exams and assessed group activities are conducted in person. All homework assignments are distributed in class.
- All exams and assessed group activities are on the day indicated on the course schedule (on Canvas), unless indicated otherwise ahead of time.
- Further instructions for the assessed group activities will be provided in class.

Evaluation Criteria and Grading Scale

Student Survey of Teaching

I always welcome feedback on what is working well and what could be improved. In addition, you will be asked to complete an end-of-semester, online Student Survey of Teaching, which will inform modifications to this course (and other courses that I teach) in the future.

Grading

Grades will be recorded on Canvas, but I won't be using Canvas to calculate your final grade; rather, I'll be using my own spreadsheet (this is in part because I'll be dropping your lowest homework score). If you're curious about your grade at any point, please ask me by email or during office hours.

Lateness Policies

Late homework assignments won't be accepted. (But I will drop your lowest homework score. So, for example, if you do all of the homework assignments but one of them is late, you won't be penalized.) And, unless you make arrangements with me beforehand, you won't be able to take the exams except on the scheduled dates. This is in part to allow timely in-class discussion of the homework assignments and Exam 1.

Grading Scale¹

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

Incomplete Grades

You may be assigned an ‘I’ (Incomplete) grade if you are unable to complete some portion of the assigned coursework because of an unanticipated illness, accident, work-related responsibility, family hardship, or verified learning disability. An Incomplete grade is not intended to give you additional time to complete course assignments or extra credit unless there is indication that the specified circumstances prevented you from completing course assignments on time. It is generally expected that a student receiving an Incomplete will be able to complete the remaining assignments without having to attend additional lectures. Given the nature of the course (and the percentage of the grade that is based on assessed group activities in class), it would be difficult to receive an Incomplete if you miss a substantial portion of the semester.

Attendance Policy

Please see the University Excused Absences policy (USRR 2.2.1) at <https://policy.ku.edu/governance/USRR#excused>.

Academic Success

I’m committed to making this class as accessible as possible. If you have any accommodation requests, please let me know as soon as possible.

Please see the Student Resources Page on the Academic Success website at <https://academicsuccess.ku.edu/student-resources-0>.

In addition to any policies and resources noted above, the KU Academic Success Student Resources website (<https://academicsuccess.ku.edu/student-resources-0>) provides links to KU Policies and Resources pertaining to religious observances; academic misconduct;

¹ See Ben Eggleston, “Plus/Minus Grading,” at http://www.benegg.net/plus-minus_grading.pdf.

grade changes; commercial note-taking; commitment to integrity and ethical conduct; the KBOR statement on free expression; mandatory reporting; nondiscrimination, harassment, and equal opportunity; sexual harassment; student rights and responsibilities; and weapons, including firearms.

If you have questions or concerns about any of these policies, statements, or resources, please let me know, or contact Student Affairs directly.

Concealed Carry

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

Artificial Intelligence

My policy on generative AI for this class is straightforward: it's forbidden. That means that you're not permitted to use generative AI for *any* part of this course, whether it's doing the homework assignments, summarizing the readings, wearing AI glasses in class, or anything else. If you're unsure about whether a use of generative AI is permitted or not, please check with me! But you should always err on the side of assuming that it's **not** permitted.

One reason for not using generative AI is that it's not always reliable, and you need to learn how to do things without generative AI in order to see whether generative AI is reliable or not. (You could use generative AI to tell you whether generative AI is reliable, but *that* might not be reliable either.) But another reason is that using generative AI deprives you of the opportunity to develop abilities and learn how to do things for yourself without it.

Different courses will have different policies on the use of generative AI; that's okay. Let's do this the old-fashioned way and see what we can (still) do without AI.

There is a proof-checker for derivations in sentence logic (but not predicate logic) that goes with our textbook. Unfortunately it appears to be buggy. (I'm pretty sure that the first proof I tried was correct. But it told me it wasn't.) There are also various other proof-checkers out there, but they might be for different logical systems with different rules. Proof-checkers can be useful in telling you whether some particular rule application is correct (that is, *if* they're reliable!), but they can also get in the way of learning to do proofs, because you can just try a bunch of things until the proof-checker says it's correct, and then move on to the next step. But on the exams there's no proof-checker! So if you rely on the "trying random things until you happen to hit on something that the proof-checker says is correct" method of doing proofs, you won't actually learn how to, well, do proofs. It's good to learn how to do proofs *without* proof-checkers, since that's the ability that you'll actually be graded on in this course.

Course Schedule

The first day of class is Monday, 24 August 2026. The last day of class Wednesday, 10 December 2026.

There is no class on the following dates: Monday, 7 September 2026 (Labor Day); Monday, 21 September 2026 (Yom Kippur); Monday, 19 October 2026 (Fall Break); and Wednesday, 25 November 2026 (Thanksgiving Break).

A detailed tentative schedule is available on Canvas (under “Syllabus and Course Schedule”). I reserve the right to make changes to the schedule as we go along; these changes will be reflected in an updated or revised version of the schedule on Canvas.