

Overview

Instructor:

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Course description:

Mathematical logic is the mathematical study of mathematical language and its meaning. It can be thought of as a kind of "applied" math, in that it studies a real-world phenomenon using mathematical tools and formalism, much like (say) mathematical physics or biology, except that the phenomenon here is math itself. Thus, another name for mathematical logic is "metamathematics".

Major themes of this course include: the distinction between syntax (language) and semantics (meaning); how formal language is motivated by our informal intuitions, but ultimately independent from it; and the limited expressive power of mathematical language and its inability to pin down an "absolute" mathematical reality.

Technology requirements:

This course takes place entirely online.

You will need a computer or phone with good internet, microphone, and preferably webcam to participate in course activities.

You will need either a way to scan and/or take pictures of homeworks and exams, or the ability to write math quickly on a computer (within the time allotted for an exam).

All times listed below are in US Central Time. Note that there will be a switch from CST to CDT on March 14.

Lectures and readings:

Lectures are on [Zoom](#) at **10-10:50am MWF**. (Note that to avoid Zoombombing, you will be required to sign in.)

I will also be posting comprehensive **lecture notes**. All required material will be covered in lectures, but the notes may contain additional examples and/or bonus material.

I will not be taking attendance in lectures, but will pace the course based on the assumption that you are attending or otherwise keeping up by reading the notes. **It is very important to avoid falling behind.** Everything in the course will be based on earlier material, which you will need time to fully absorb, and cannot simply "look up" right before a homework or exam.

There is **no required textbook**. The posted lecture notes will serve as the definitive reference.

Discussions and communications:

Regular course announcements will be posted on Moodle under "Announcements". Special announcements will also be sent out via email.

There will be three interactive modes of communication available: the discussion forum, Zoom office hours, and email.

The **discussion forum** will be on [Campuswire](#). The forum is preferred for most questions.

Office hours will take place on [Zoom](#) each week at **TBD**. These are best for specific questions that require a back-and-forth. I will also be opening some breakout rooms that you can join, to support collaboration. It would be ideal if you have a method of sharing math in real time (e.g., a tablet, or webcam + paper).

You can also **email** me any questions; but note that this is the least interactive method of communication.

You can normally expect a reply to offline questions within 24 hours. (Do not expect a reply to last-minute questions)

shortly before a homework or exam is due.)

Homeworks and quizzes:

There will be two types of weekly assessments: homeworks and quizzes, posted under "Schedule".

Quizzes will be worth **5%** of your final grade, with no grades dropped, **due on Tuesdays at 4pm**. These will be online and multiple-choice/short-answer, open-book, and with immediate automatic feedback and unlimited tries. Thus, quizzes are effectively graded based on completion only. They are intended to give you low-stakes practice with each week's material; wasting them by asking a friend for the answers is a bad idea!

Homeworks will be worth **15%** of your final grade, with the lowest grade dropped, **due on Thursdays at 4pm**; in addition, you may hand in 2 homeworks up to 24 hours late with no penalty. These will be proof-based, written problems, that you will need to type or scan and then upload to Moodle.

If you hand in a homework late, of course you may not look at the solution if it's posted before you submit it.

Collaboration is encouraged on both quizzes and homeworks, but **you must write up homework solutions yourself**.

Exams:

There will be **3 midterm exams**, with the lowest grade worth **10%** and the other two worth **20+20%**:

- dates TBD (all Fridays)

The **final exam** will be worth **30%**, and will take place on **TBD**.

All exams will be online, a mix of multiple-choice/short-answer and free-response, timed, and open-book; you may use all resources that **do not involve communication with another person**. (For example, googling is okay; texting or posting to online forums is not.) The exams will be designed so that if you know the material well, you should have no need of any resources.

Grading:

- 15% homeworks (lowest dropped) + 5% quizzes
- 20+20+10% midterms
- 30% final exam

There will be no numerical scaling throughout the term. The final letter grade cutoffs will be determined at the end of the term. Grades >90% are guaranteed an A-, >80% are guaranteed a B-, etc. (the actual cutoffs may be lower).

In the event of a serious, documented illness or other crisis, an extension or excusal from a homework or exam may be granted at my discretion. All such requests must be made no later than one week after the due date.

Extensions and excusals will only be granted in serious cases. For mild illnesses (including mild cases of COVID), please use the free 1-day homework extensions and dropped homework grade.

Academic integrity:

Academic integrity will be taken seriously; see [Article I, Part 4 of the student code](#).

Disability accommodations:

If you need disability accommodations, please contact [DRES](#) for a letter of accommodation, and send me a copy of the letter. This should be done near the start of the term, well before any exams.