

Course Syllabus

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M 310P: Modern Mathematics Plan II - In Person

Instructor

Name: Dr. Amanda Hager, she/her/hers

What to call me: Dr. Hager



Email:

Individual appointment requests:

Teaching Assistant

Name:

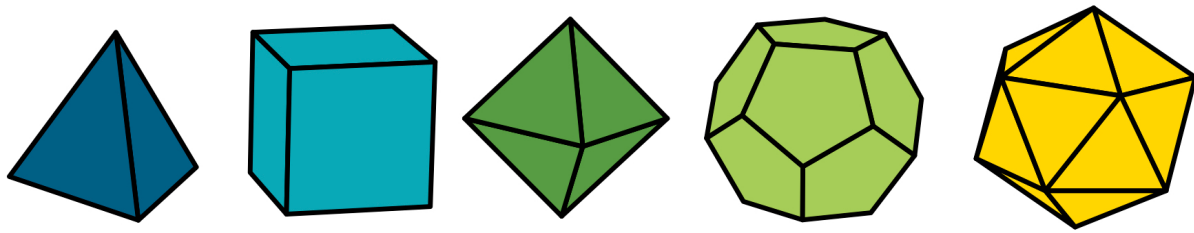
Contact preferences

For math help, use Slack or drop-in hours. For all other matters, use email, Slack DM, or book a phone or Zoom appointment.

Class times and drop-in hours

- Lectures: 1-2 in JGB 2.216
- Virtual drop-in hours: Thursdays on Zoom, 1-2. Subject to change.
- In-person drop-in hours: Wednesdays 2-4, Subject to change for weather or illness.

- [REDACTED]
- [REDACTED]
- [REDACTED]



What do I need to buy?

Required materials

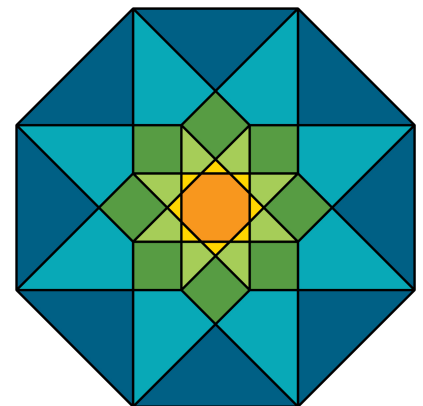
- Scissors
- Scotch Tape
- Graph paper
- Method of scanning written work (phone, scanner app, scanner)

Optional textbook

[The Heart of Mathematics: An Invitation to Effective Thinking](https://www.wiley.com/en-us/The+Heart+of+Mathematics%3A+An+Invitation+to+Effective+Thinking%2C+4th+Edition-p-9781118235706) [↗](https://www.wiley.com/en-us/The+Heart+of+Mathematics%3A+An+Invitation+to+Effective+Thinking%2C+4th+Edition-p-9781118235706) [_\(https://www.wiley.com/en-us/The+Heart+of+Mathematics%3A+An+Invitation+to+Effective+Thinking%2C+4th+Edition-p-9781118235706\)](https://www.wiley.com/en-us/The+Heart+of+Mathematics%3A+An+Invitation+to+Effective+Thinking%2C+4th+Edition-p-9781118235706), 4th Edition by Edward B. Burger and Michael Starbird. You can rent/buy/borrow an ebook/looseleaf/hardcover book.

What will I learn?

I want to introduce you to the world of mathematics the way a career mathematician sees it, as a world of fascinating open problems, many branches and types of mathematics, and connections with history, art, architecture, games, logistics, and science. This is not an algebra class. In fact, I have purposefully removed as much algebra as possible from this course. Algebra is useful, but it's not *interesting*. I plan to show you what's interesting about math.



By taking this course, you will understand that:

- You can do advanced math (even if you think you can't);
- There are many areas of math besides algebra/precalculus/calculus;
- The power to think analytically, explore curiously, and argue logically transcend major and discipline and can be helpful to everyone;
- Math is not fully known and not necessarily permanent; people make surprising discoveries all the time.

You will be able to:

- Explain ways in which math appears in your own major, areas of interest, or daily life;
- Attempt new problems without fear and with a willingness to make mistakes;
- Formulate short proofs using the following methods: direct proof, proof by contradiction, and case analysis;
- Apply abstract definitions to solve problems, create intuition-forming examples or counterexamples, and make conjectures.

What is expected of me?

Keep up with content. You can choose to come to class meetings or you can teach yourself using Canvas modules. There will be something due every week, and exams are only open for 24 hours, so it's important to keep up (or communicate with me if you can't).

Treat every exercise like a proof. Sometimes you'll justify your ideas through drawings, diagrams, tables, or paragraphs, but this is a course about solving problems logically, so you will always have to show your thought process.

Keep an open mind. This course is definitely not like a typical math course, and it's probably not what you are expecting. There is very little drill work. We cover fewer examples than most people expect. There is a lot more writing than most people expect.

Speak up. I always want to hear from you. The class is big, remote, and mostly anonymous, and it can be intimidating to speak up, but I'm rabid about creating a judgment-free zone where we can discuss our ideas freely and fearlessly.

How do I learn the content?

Attendance is always optional. You have three options, and they are interchangeable:

1. **Come to lecture.** I encourage you to wear a mask when you do. I'll have slides, examples, and demonstrations ready, and I'll talk through the material and encourage you to work along on examples.
2. **Livestream/watch the lecture from home.** I will be able to use Lecture Capture for this class, and I will be recording all lectures. I am working on a synchronous streaming option as well.
3. **Watch/read the module.** If you cannot come to lecture, I invite you to work through the relevant learning module instead. These modules were designed for a stand-alone web-based version of this course, so they are a convenient and excellent alternative to lecture.

Should I come to class?

Come to class if you want to, say you prefer learning in-person, prefer to be held accountable by a lecture time, or you tried the module ahead of time and you still have questions.

Do not come to class if you are sick (with anything) or if you've been exposed to COVID. You never have to come to class. I will not judge you for not coming to class.

How will I be graded?

Your course grade is based on 5 online exams (confusing: Canvas will call them all Quizzes, but the longer ones are graded exams and the shorter ones are just knowledge checks), and a pile of homework assignments and Canvas participation quizzes. All assignments are graded out of 100 points except Canvas participation quizzes which are graded out of 10 points. The averages for each category are weighted as follows to compute your course grade out of 100 percentage points:

Assessment Type	Weight
4 of 5 Exams	44%
Homework and Writing	50%
Quizzes	6%
Total	100%

I am dropping the lowest exam score and the lowest homework score.

Your course grade will be rounded to the nearest whole number, and your letter grade will be assigned according to a scale no stricter than the following: A (100-93), A- (92-90), B+ (89- 87), B (86-83), B- (82-80), C+ (79-77), C (76-73), C- (72-70), D+ (69-67), D (66-63), D- (62-60), F (59-0). I reserve the right to adjust this scale, but it will only be adjusted in your favor.

All homework questions will be graded on the same five-category rubric, which is available on Canvas. Your three writing assignments will be graded on a different five-category rubric, which is also available on Canvas.

What are exams like?

Canvas quizzes! They will be open book, open source exams, open for a 24 hour period. They are not cumulative. You do not have to do them in your lecture hall. The fifth exam is happening during finals week, on Dec 13, but it is not cumulative.

I will not come to campus on exam days. I will be available by DM and email and appointment all day for tech support.

Exam dates are 9/17, 10/8, 10/29, 11/12, and 12/13.

What are quizzes like?

Like discount versions of exams. They are Canvas quizzes that typically consist of 4-6 easier questions. They count for a grade but you are allowed to retake quizzes as many times as you like.

What are homework assignments like?

You'll see a set of ten to fifteen questions in a HTML document on Canvas. You can type or write up your homework assignments, and then you'll upload them in Canvas. In general, there is a lot more writing and drawing than most students are used to in a math class, and there is less solving and computing. You are required to justify all responses, even if the justification is quite short.

How do I make up assignments and exams?

Late homework assignments and quizzes will be accepted until Friday, December 6. A 25 point penalty will be deducted from any late submissions (even one minute late).

Makeup exams are offered for reasons of religious observance, illness, official UT business (athletics travel), and COVID-19 impact. Please contact me to arrange. I do not generally require documentation.

The only extra credit offered in this class is a series of three surveys that I'll ask you to take, two at the beginning of the course and one at the end. I don't offer grade changes unless I have made a grading mistake.

Will you come to campus?

I will be on campus Mondays, Wednesdays, and Fridays. I have some limited availability for appointments on Wednesdays. I am searching for an outdoor location.

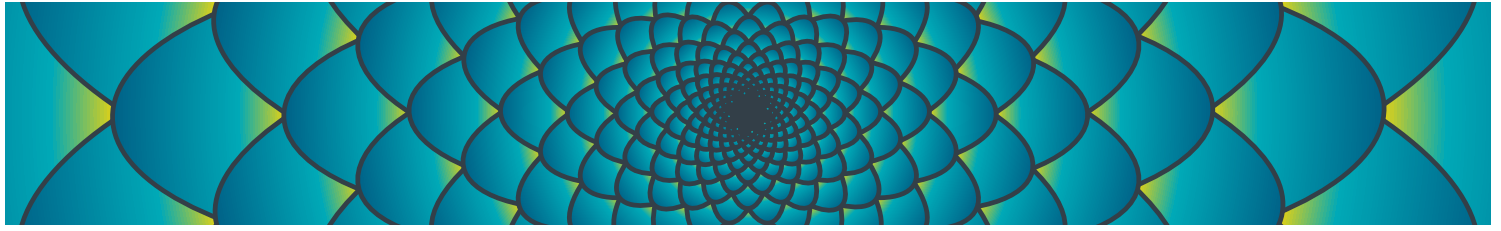
Are you recording office hours? I'm worried about my privacy.

I will record portions of class meetings and office hours, and your name and face may appear in those recordings. You may turn off your camera if you wish. The recordings will live in Zoom behind a UT EID login, they will not be shared with people outside our class, and they will be destroyed at the end of the semester. You can help protect your classmates' FERPA rights by not sharing recordings that contain sensitive information. From Legal: *"Class recordings are reserved only for students in this class for educational purposes and are protected under FERPA. The recordings should not be shared outside the class in any form. Violation of this restriction by a student could lead to Student Misconduct proceedings."*

Can I share any course materials with others?

Not with people outside this class. No materials used in this class (including, but not limited to, lecture hand-outs, videos, assessments, in-class materials, review sheets, and additional problem sets), may be shared online or with anyone outside of the class unless you have my explicit, written permission.

Unauthorized sharing of materials is copyright theft. It is a violation of the University's Student Honor Code and an act of academic dishonesty. So please don't use Chegg or CourseHero or Koofers or any of the others. I can help. I want to help.



University policies and other resources

COVID Caveats

To help keep everyone at UT and in our community safe, it is critical that students report COVID-19 symptoms and testing, regardless of test results, to [University Health Services](https://www.healthyhorns.utexas.edu/) [↗] (<https://www.healthyhorns.utexas.edu/>), and faculty and staff report to the [HealthPoint Occupational Health Program](https://hr.utexas.edu/current/services/occupational-health-program) [↗] (<https://hr.utexas.edu/current/services/occupational-health-program>) (OHP) as soon as possible. Please see this [link](https://hr.utexas.edu/current/services/occupational-health-program) [↗] (<https://hr.utexas.edu/current/services/occupational-health-program>) to understand what needs to be reported. In addition, to help understand what to do if a fellow student in the class (or the instructor or TA) tests positive for COVID, see this [University Health Services link](https://healthyhorns.utexas.edu/coronavirus_exposure_action_chart.html) [↗] (https://healthyhorns.utexas.edu/coronavirus_exposure_action_chart.html).

Prerequisites

Texas Success Initiative (TSI) exemption or a TSI Mathematics Assessment score of 350 or higher. The UT math placement test is not required.

Degree relevance

Core Curriculum

This course may be used to fulfill the mathematics component of the university core curriculum and addresses the following three core objectives established by the Texas Higher Education Coordinating Board: communication skills, critical thinking skills, and empirical and quantitative skills.

Quantitative Reasoning Flag

This course carries the Quantitative Reasoning flag. Quantitative Reasoning courses are designed to equip you with skills that are necessary for understanding the types of quantitative arguments you will regularly encounter in your adult and professional life. You should therefore expect a substantial portion of your grade to come from your use of quantitative skills to analyze real-world problems.

Deadlines for Dropping a Course

If you drop a class on or before September 10 (12th class day), the class will not show up on your transcript. If you drop a class after that date, the course will show up on the transcript with a “Q” grade. After October 28 it is not possible to drop a course except for extenuating (usually non-academic) circumstances.

Services Available to Students

[Services for Students with Disabilities](http://www.utexas.edu/diversity/ddce/ssd/) [↗](http://www.utexas.edu/diversity/ddce/ssd/) [\(http://www.utexas.edu/diversity/ddce/ssd/\)](http://www.utexas.edu/diversity/ddce/ssd/)

I am committed to creating an inclusive classroom environment, and I will provide appropriate accommodations to any student who requires accommodations due to a documented disability. To begin the formal process of requesting accommodations, please contact SSD at 512-471-6259 or ssd@austin.utexas.edu (<mailto:ssd@austin.utexas.edu>).

[Behavior Concerns Advice Line](https://besafe.utexas.edu/behavior-concerns-advice-line) [↗](https://besafe.utexas.edu/behavior-concerns-advice-line) [\(https://besafe.utexas.edu/behavior-concerns-advice-line\)](https://besafe.utexas.edu/behavior-concerns-advice-line)

Are you worried about a student in your class, bothered that your roommate has been acting differently, or concerned about the behavior of a co-worker? Do you have concerns but are not sure what to do? If so, contact the Behavior Concerns Advice Line at 512-232-5050 or submit your concerns using their [online form](https://utexas-advocate.symplicity.com/care_report) [↗](https://utexas-advocate.symplicity.com/care_report) [\(https://utexas-advocate.symplicity.com/care_report\)](https://utexas-advocate.symplicity.com/care_report). Cases that present an immediate threat to self, others, or property should be considered an emergency and should be directed to The University of Texas Police Department ([UTPD](https://police.utexas.edu/) [↗](https://police.utexas.edu/) [\(https://police.utexas.edu/\)](https://police.utexas.edu/)) by calling 911.

[Counseling and Mental Health Center](https://cmhc.utexas.edu/) [↗](https://cmhc.utexas.edu/) [\(https://cmhc.utexas.edu/\)](https://cmhc.utexas.edu/)

CMHC provides counseling, psychiatric, consultation, and prevention services that facilitate students' academic and life goals and enhance their personal growth and well-being. They are located at Student Services Bldg (SSB), 5th Floor, Hours: M-F 8am- 5pm, 512-471-3515.

[Religious Holidays](https://catalog.utexas.edu/general-information/academic-policies-and-procedures/attendance/) [↗](https://catalog.utexas.edu/general-information/academic-policies-and-procedures/attendance/) [\(https://catalog.utexas.edu/general-information/academic-policies-and-procedures/attendance/\)](https://catalog.utexas.edu/general-information/academic-policies-and-procedures/attendance/)

Please give me advance notice if possible. I'll accommodate you.

Title IX Reporting/SB 212

Texas [Senate Bill 212](https://titleix.utexas.edu/sb212) [↗](https://titleix.utexas.edu/sb212) [\(https://titleix.utexas.edu/sb212\)](https://titleix.utexas.edu/sb212) requires all employees of Texas universities, including faculty, report any information to the [Title IX Office](https://titleix.utexas.edu/) [↗](https://titleix.utexas.edu/) [\(https://titleix.utexas.edu/\)](https://titleix.utexas.edu/) regarding sexual harassment, sexual assault, dating violence and stalking that is disclosed to them.

I am a mandatory reporter. By law, I must be fired if I do not report. If you need referral to a confidential resource, please let me know. Our [Student Ombuds](https://ombuds.utexas.edu/student) [↗](https://ombuds.utexas.edu/student) [\(https://ombuds.utexas.edu/student\)](https://ombuds.utexas.edu/student) is wonderful and confidential.

Course Summary: