

Math 130: Contemporary Mathematics

Spring 2024

Syllabus

“Whatever you think math is... let go of it now. This is going to be different.”
Eugenia Cheng

Professor: Josh Laison
Ford 215, x6689, jlaison@willamette.edu

Student Office Hours:

Monday and Tuesday 10:00-11:00

Thursday 1:00-2:00

Friday 9:00-10:00

Anytime by dropping by my office or scheduling an appointment via email.

My available times are on my webpage <http://www.willamette.edu/~jlaison>

Class Meetings: MWF 12:00-1:00, Ford 201

Course Web Page: <http://www.willamette.edu/~jlaison/contemporary.html>

Course WISE Site: https://wise.willamette.edu/portal/site/MATH-130-01-24_SP

Course Learning Outcomes:

- Gain an appreciation for playing with and exploring mathematical thinking.
- Think deeply about mathematical ideas.
- Experience the authentic process of mathematical research, including the creation of our own mathematical results.
- Gain an understanding and appreciation for the work and lives of professional mathematicians.

Graded Components of the Course

Problem assignments (around 7)	40%
Perusall assignments (around 20)	25%
Class participation	5%
Research project	
– Group progress reports (3)	10%
– Final presentation	20%
<hr/> Total	<hr/> 100%

Perusall assignments: (Once or twice a week) You'll read articles and watch videos regularly in preparation for new topics in class. I'll ask you to think about and comment on these through the software Perusall. You'll also get a chance to respond to classmates' comments and start a discussion outside of class. Perusall assesses your contributions and gives you a grade. I hope this is a way for you to meaningfully engage with these materials as a community.

Problem assignments: (About once a week) These problems are meant to challenge you and stimulate your intellectual curiosity. Don't feel bad if you can't solve the problems right away, or if you need to talk to someone before figuring them out – they're designed to encourage you to work with others, explore and discover new mathematical ideas, and they will take time to puzzle out.

I'll do my best to pick problems that will encourage you to explore and think creatively. Most of the problems will have multiple correct approaches. Some problems might have more than one correct interpretation. On all the problems, particularly creative or innovative solutions, or continuing investigations of related problems beyond what's asked, are worth extra credit.

Please write your assignments to convince your reader of your logic and reasoning. It's not enough to give a number or phrase as an answer to a problem. Getting your reader to understand the process you use to arrive at your conclusions is an important part of communicating your ideas.

Research project: (Three group meetings with me in my office, and a 15-minute presentation to the class during the scheduled final time) The class project is an opportunity for you to engage in mathematics research. Your group of two or three students will ask and answer original mathematical questions. You'll start with a puzzle from class as a jumping-off point and then guide the direction of your investigation, in consultation with me. Over the course of the semester, you will get regular feedback from me to help you generate fresh ideas and keep the project going in a productive and interesting direction.

It's important to remember that the research project is ongoing – when you solve a problem as part of your project, don't stop working on it! I'll work with your group to make sure you have ideas of where to go next after each completed step.

Ways to Get Unconfused:

- Find classmates to work together with. Although different people have different working styles, I find math problems much more interesting and less frustrating in a group than by myself.
- Talk to me during my student hours or at other times, and I will be more than happy to answer questions. You're welcome to come by my office and hang out and work on problems even if you don't have questions right away. I hope to see everyone regularly!
- Learning Center and Math Department tutors will be available to help with homework most nights of the week in Ford Hall. These are also great places to form study groups. Stay tuned for times and locations!

Course Policies

Missed Classes and Late Assignments: Please communicate with me about classes and assignments you miss, and I can help you make up what you missed.

Community: (Adapted from Prof. Federico Ardila) This course aims to offer a joyful, meaningful, and empowering experience to every participant. As a community of scholars, our work gets better when we're all invested in a common effort of learning and discovery. We will build that rich experience together by supporting each other. Please be prepared to take an active, critical, patient, and generous role in your own learning and that of your classmates.

Anti-racism: (Adapted from the Office of Equity, Diversity and Inclusion) I affirm our commitment to anti-racist action in the coming semester and beyond. I stand in solidarity with those who have been calling for justice and working to end institutionalized racism and white supremacy across the country and at Willamette.

Systemic racism at Willamette University is not an issue that can be addressed superficially. It will take a deep commitment from all parts of our community to make the changes that are necessary, and that is what I offer here: a commitment to gather, build, and act on a clear anti-racist agenda together.

Land Acknowledgement: (Adapted from the Dean's Office) Willamette is built on the land of the Kalapuya, who today are represented by the Confederated Tribes of the Grand Ronde and the Confederated Tribes of the Siletz Indians. We offer gratitude for the land, for those who have stewarded it, and for the opportunity to work on it. We acknowledge that our University's history is fundamentally tied to the first colonial developments in the Willamette Valley.

Diversity and Accessible Education Statement: (Adapted from the Accessible Education Services Office) Willamette University and I value diversity and inclusion. We are committed to a climate of mutual respect and full participation. My goal is to create a learning environment that is usable, equitable, inclusive and welcoming for people of any gender identity or expression, race, color, national or ethnic origin, religion or religious belief, age, marital status, sexual orientation, or ability.

If there are aspects of the instruction or design of this course that result in barriers to your inclusion or accurate assessment or achievement, please notify me as soon as you're able. Students with disabilities are also encouraged to contact the Accessible Education Services office in Smullin 155 at <https://willamette.edu/offices/accessibility> or accessible-info@willamette.edu to discuss a range of options to removing barriers in the course, including accommodations.

Religious Accommodations: (Adapted from the Office of the Chaplain) Willamette University and I recognize the value of religious practice and strive to accommodate students' commitment to their religious traditions whenever possible. If you anticipate missing class for religious reasons, please contact me to discuss your needs.

Time Commitment: Willamette's Credit Hour Policy expects 2-3 hours of work outside of class for every hour of in-class time. Since this class meets three days a week you should anticipate spending 6-9 hours outside of class engaged in course-related activities.

Academic Integrity: Plagiarism can take different forms, but its essence is presenting the words or work of another person as your own. When you are quoting from, paraphrasing, or using images created by another person in any of your work, you should acknowledge that source in a citation. This includes text or images made by artificial intelligence and language learning models.

On the homework assignments: You are encouraged to discuss the homework with fellow students, and get help from your professor, textbook, notes, or calculator. Your submitted written work should be your own. Don't copy/paste or paraphrase another source.

On the class project: All members of your group should contribute to producing all components of your project. Don't sign your name to work written by others.