MATH 130-03 Contemporary Mathematics

Syllabus Spring, 2021

Instructor: Dr. Colin Starr Office Hours: M 11-12 and 2-3, T 9-10 and 1-2:30

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Office hours will be held via Zoom.

Required Text: Mathematics for the Liberal Arts, by Lumen Learning and David Lippman.

Goals: This course is an exploration of mathematical thinking and problem solving. The specific topics will depend on our collective interests, but the overarching theme is mathematical reasoning. At the end of the course, students will have (1) improved mathematical reasoning skills, (2) greater confidence in their mathematical reasoning abilities, and (3) a greater understanding of the breadth of problems amenable to mathematical reasoning.

This is not a primarily lecture-based class, although there will be some. You should be prepared to be challenged by non-trivial, non-formulaic problems that will require creativity and perseverance to solve.

Assessment: Your grade will be computed as follows:

Playsheets:400 pointsMathematical Thinking Journal:150 pointsMini Essays:250 pointsFinal Project:200 points

Playsheets are collaborative with one to three of your classmates. We will use these to explore new content; they also serve as homework. They are generally made up of just a few problems, but they may require some ingenuity. There is a hazard in group projects that the bulk of the work falls on only part of the team. You are all accountable to each other to perform a fair share of the work. Note that every group member should work on every problem – do not delegate particular problems to individuals. You may, however, assign write-ups of different problems to different individuals. If someone is not keeping up their end, it is important to let me know.

Mathematical Thinking Journal: Keep a journal in a Google doc or other document that can easily be shared with me (not by email, though!). You should make at least three entries per week. The entries can be about any mathematical thinking you have done during that week. They only need to be a few sentences each, and each should be dated. Examples: you could write about how you approached a playsheet problem, how mathematical problem solving arose in another class or in your kitchen, something you heard on the radio – anything! The only constraint is that it should be mathematical in nature and have something to do with solving problems. I have shared a possible template with you, but you are welcome to be creative. I will check the journal a few times during the semester.

Mini Essays: We will have five readings over the course of the semester. These mini-essays are response papers to those readings. They should be around one or two pages (unless you find you have more to say!). The essays are due one week after the reading is assigned. They will be graded for mechanics as well as content, so be sure to proofread and use appropriate grammar, spelling, and punctuation.

Final Project: We will encounter several mathematical subdisciplines during the semester. Be alert for one you would like to pursue further. For the last two weeks of the semester, we will be working on group projects that take a deeper look at some mathematical topic. I will have a selection of project topics for you based on what we do in class, or you can choose your own (subject to my approval!). This will culminate in a presentation during our final exam time.

Grading: Grades must fall into the categories below to earn the corresponding letter grade.

Letter Grade	A	A ⁻	B ⁺	В	B-	C+	С	C-	D_{+}	D	F
Minimum Percentage	92	89.5	87.5	82	79.5	77.5	72	69.5	67.5	59.5	
Minimum Points	920	895	875	820	795	775	720	695	675	595	

The final presentations will be on Saturday, May 8 from 8 to 11 AM.

Please note: Written responses to all questions must be in complete sentences. I expect correct usage of grammar, spelling, and punctuation at all times; your grade will reflect this! I also expect your work to be neatly written.

If you have special needs (e.g., for a documented disability), it is your responsibility to approach me at least a day in advance of the need for accommodation. To receive accommodation, you must be registered with Disability Services; this office is located in Bishop Health Center in Baxter Hall. (Phone: (503) 370-6471.)

Cheating and plagiarism absolutely will not be tolerated. The minimum penalty for cheating or plagiarism is a 0 on the assignment and a formal notification to the dean. I encourage you to work together, but you must indicate that you have done so and cite your sources.

My door is usually open. The office hours above are the times I will definitely be in my office (or nearby), but you are welcome to come by at other times as well. Make sure you come see me whenever you have a question.