PROJECT DESCRIPTION

IDEAS OF MATH, FALL 2024

1. Description

The goal of this class project is to provide the students a chance to work with the concepts they learn in MATH 102 on certain topics of their chosen. The project is about a mathematical concept that has not been discussed in class.

The students must produce a mathematical report and a deliverable (video or presentation).

There are two options for the deliverable:

(1) Create a video
(2) Create a poster / Powerpoint presentation

2. Timeline

(1) Each group is given a topic on August 27, 2024.
(2) Team/topic change requests must be submitted via email by September 6, 2024.
(3) Your written report is due Friday, Dec 1, 11:59 PM. Note
    - The report will be rejected if it is not written in LaTeX.
    - Late work will be rejected.
(4) Video showoff / presentation in class on December 3.

3. Requirement and evaluation

There are two objectives:

(1) You must write a full mathematical report.
(2) You present a mathematical concept to other people.

Both will be evaluated using the following criteria (adapted from a grading Rubric by Kathryn Mann of Cornell):

Date: August 22, 2024.

I. Oral Presentation

a) Content (3/5).

- Appropriate choice of material given the time constraint
- Mathematical concepts (examples, theorem statements, etc.) explained correctly
- Sufficient definitions, illustrations, and/or motivation are given
- The mathematical material is at a level appropriate for math 130 students to understand

b) Clarity and Delivery (2/5).

- Board writing is clear and large enough. (Same for diagrams/pictures if you draw any.)
- Speaking is clear and well-paced; the presenter faces the audience rather than the board when possible
- Concepts are clearly and concisely explained
- The presentation appears rehearsed and is within the time limit. (Note: it is okay – in fact, I encourage you – to have some written notes with you while you present. But ideally, you should not have to look at them very much!)

II. Written Report

a) Mathematical Content (4/10).

- Is the mathematics consistent and correct?
- Is it at a level of sophistication appropriate for this class?
- Are topics and ideas introduced with sufficient explanation?
- If there are pictures, figures, or examples, are they accurate, appropriately used, and do they support the text?

b) Clarity of Mathematical Exposition (3/10).

- Are topics presented in a logical order?
- Does the paper achieve an appropriate balance of conciseness and explanation?
- Are complicated parts/proofs (if any) broken into steps?

c) Style (3/10).

- Is the paper clearly written, in paragraph form?
- Is the grammar, spelling, and sentence construction correct?
- Does the introduction serve its purpose?
- Is the paper readable and does it flow?

4. Advice

Start early and meet with the instructor regularly when you have questions.

A guide for math writing: https://math.berkeley.edu/~kpmann/writingadvice.pdf