

Group Project

TMATH 402

The reason why: By the end of this project you will have

1. applied techniques covered in class to a new topic that interests you, and
2. developed technical writing skills.

Beginning in week five students will form groups and start periodically working on their own research topics outside of class. The group project will center around a direct application of abstract algebra and requires the completion of a paper, portfolio, and presentation. You may select a topic from the list below or choose your own topic. Pairs are preferred but you can work individually or in groups of up to three.

Timeline:

1. 1/30 In class writing activity: Come to class with two or three topics you are considering for your project. You need not have decided on a topic, but you should have a short list of interests.
2. 2/11 In class writing activity: Come to class knowing who is in your group and what topic you will work on.
3. 2/20 Draft exchanged between groups: *Each* member must review the paper given to their group and fill out the grading rubric. Additional comments and suggestions from each group member should be written on the one copy that they were given.
4. 2/27 Return peer reviews: Make sure to keep all the reviews you receive as these must be included in the portfolio.
5. 3/6 Turn in second draft to instructor.
6. 3/13 Presentations:
7. 3/18 Final paper due:
8. 3/18 Portfolio is due:

Group Project Topic Ideas:

- Check-digits (e.g. driver's license #, money orders, credit card #)
- Puzzles (e.g. 15 puzzle, Rubric cube)
- Secrete codes using modular arithmetic (e.g. RSA)
- Symmetry in chemistry (e.g. crystals)
- Card tricks
- Bell ringing

Paper Specifications: The writing component is minimally a six page single space paper in size 12 font. The paper is expected to be written clearly and be free of grammatical mistakes. You may use either the APA or IEEE style. The paper must include:

1. An abstract that gives a clear, concise description of the paper in less than 100 words.
2. At least two pages to serve as an introduction to the topic being discussed. Included in this introduction should be precise definitions and examples to help clarify any new concepts. The audience for this paper will be your peers, so make sure you write at an appropriate level.
3. A few problems/examples completed and clearly written up. The problems must be your own examples and not simply following those provided by your sources. The solutions need not be shown in their entirety, but must include a few key steps as well as an explanation of what the computation means.
4. A work cited page in either APA or IEEE style that is absence of questionable/inappropriate sources.

Presentation Specifications: Each group will have 12 minutes to set up, present, and field questions on their topic. Every group member must speak. Presentations must have:

1. an introduction to your group's topic,
2. one well chosen example/application, and
3. a prepared visual aide that enhances the presentation.

Portfolio Specifications: The following must be collected, in order, and turned in on the due date:

1. The first in-class writing activity (1/30) from *each* group member.
2. The activity log created on 2/11 and updated regularly.
3. The a copy of the peer reviewed and instructor reviewed draft that your received.
4. One page, typed response to the feedback that you paper received.