

Final Project Guidelines

George McNinch

2024-03-09

For your final project, you will pick a topic related to some part of the course material. Your submission should carefully explain the problem. It should include context for the mathematical interest of the problem and its relevance to some aspect of the course material. And you should choose a topic where you can give include proofs of some substantial part of the results you describe.

You must submit the following *deliverables*:

1. a *proposal* by [2024-03-29 Friday]
2. written report by [2024-04-26 Friday]
3. video presentation to accompany the report, also by [2024-04-26 Friday]
4. you will watch two of the presentations submitted by your class-mates, write some *brief* comments, and submit them (to me) by [2024-05-06 Monday].

Here are the details:

Proposal

due [2024-03-29 Friday]

Your proposal should be submitted as a *PDF* on *gradescope*.

The aim of the proposal is to articulate a clearly defined goal for your analysis, and to briefly discuss how it you will carry out the investigation.

You should keep the proposal to a single page (and please use standard paper- and font- sizes), with a second page for references if necessary.

- Full *statement of the problem to be considered*.
- Concise description of what *results* you will explain in the project.
- Brief assessment of the *interest of the problem* (to you, or to others).
- Provide a brief *literature review* by citing a few references for the ideas. (This can just be a book, for example).

Report

due [2024-04-26 Friday]

Your report should be submitted as a *PDF* on *gradescope*. It should be 3-53 pages (not including references or code).

This research is *not expected to be original or novel*. The main goal is to get you to investigate and explain some interested mathematics.

Submission of your paper warrants that it is written in your own words, and that you have not copied from any source without direct citation.

Your report should include the following:

- A brief abstract summarizing the results of your project.
- Clear statement of the *problem* and the result(s) you will prove, including some context and background. Explain why the problems are related to class-material.

- Careful proof of the main results.
- References. (Again, this can just be a book).

Video Presentation

due [2024-04-26 Friday]

Your video presentation will be uploaded to a folder *tufts.box.com*, but I haven't yet set up the necessary folder. I'll update these guidelines when this is configured.

You will make a video recording of a 10 minute presentation describing the problems and some of the results you consider in your report.

Your presentation should visually demonstrate some aspect of mathematics involved in your report; you should give the proof of at least one of the results described in your report.

I'm including some *suggestions* in the [*final project recommendations*](#).

Viewing Video Presentations

As indicated above, I'll create a folder at *tufts.box.com* for the class Videos; the class will have *read-access* to this folder. You must *watch* (at least) two videos submitted by your classmates, and write *brief* comments (a paragraph or two).

You must submit these comments in a PDF to gradescope by [2024-05-06 Monday].

Bibliography