

Math 523 Final Project

For your final project, you will split up into groups of $n = 1, 2,$ or $3,$ choose a topic that is connected to the course material in some way, and give a $10n$ -minute presentation on one of the last two days of class (April 20 or 25). Your slides should be written in L^AT_EX using the beamer document class. If you would like an exception to this, talk to Brooke.

1 Due dates

- **Wednesday, March 23:** Topic due (via email to Brooke)
- **Wednesday, April 13:** Outline due (via email to Brooke) – this should be a list of what you’ll discuss in your presentation. No details are necessary here. For example, one of your bullet points may be “twisted cubic example.” Your outline will probably be less than a page.
- **April 20 and 25:** Presentations. You’ll sign up for one of these days. You should send me your slides by **10 PM** the night before your presentation.

2 Overview

While there are many different ways to give a successful presentation, the majority share certain key attributes. The following is a list of such attributes, which should be considered when preparing your final presentation.¹

- **Content and Purpose**

A presentation should aim to only include factually correct statements (mathematical or otherwise). Just as important a consideration is the mathematical maturity level at which the presentation is pitched. The expectation is that the content is accessible to your peers; not so basic that any math audience could follow, not so advanced that only Brooke could. Ideas should be introduced and set up with contextualizing motivation and examples. It’s better to give the “big picture” view than to get stuck on the technical details.

- **Organization**

A successful talk will flow easily from slide to slide, rather than feeling disjointed. The talk should have an over-arching narrative, with clear introduction, middle, and conclusion. Speakers should use all of the time: the presentation should not be too short or too long. To finish on time, the presentation cannot try to cram in too much material. On the other hand, just because a talk finishes on time does not mean that it covered enough material! It is a balancing act, and the key thing is the pace at which ideas are presented.

¹Overview and rubric from Tony Várilly-Alvarado (slightly modified).

- **Slide Preparation**

A slide that is composed of a wall of text is very hard for an audience to digest. Rather, it is better to be generous with blank white space on slides, to draw attention to the displayed statements, figures and formulas. The Beamer document class allows a slide to reveal its content piece by piece; this can be used to great effect. It is also important to be consistent and accurate in how mathematical notation is displayed, i.e. to use \LaTeX correctly.

- **Audience Engagement**

One main goal of any presentation should be that your audience remains interested and engaged. While this can be hard to measure, there are certain behaviors that a speaker can exhibit to encourage audience engagement. Frequent eye contact, open body language, and a confident, enthusiastic tone of voice are good examples. Well-crafted slides can help here: if your spoken content blends well with your visual content, the audience's attention is less likely to wander. Things likely to distract an audience include: hesitant speech patterns, fidgeting gestures, uneven volume, poor articulation, etc.

3 Rubric

Content & Purpose	Score
The mathematical content was entirely correct	8
The mathematical content was mostly correct, with some superficial errors.	6
There was a major error in the mathematical content, or several minor ones.	4
There were several major errors in the mathematical content.	2
The content was pitched at the correct level.	5
The content was pitched slightly too high or too low.	3
The content was pitched severely too high or too low.	1
The speakers did an excellent job of contextualizing their topic, with the use of motivating discussion and examples. Relevant arguments were distilled down to their key ideas, which were then presented clearly.	3
Some attempt was made to motivate interest in the topic, and arguments were presented with a decent level of understanding.	2
Little context was given for the topic. Content was mostly regurgitated from its source.	1

Organization	Score
The speakers gave a self-contained talk, featuring relevant details, giving as complete of a picture as possible within the time constraint.	5
The speakers gave a fairly full treatment of their topic, but missed some important ideas.	3
The speakers did not sufficiently get to grips with the material, and their presentation missed key, relevant details.	1
The talk began with an introduction to the topic, which then progressed to a discussion of details and/or examples, before ending with a definitive conclusion. The talk flowed well.	3
There was some attempt at an overall structure to the talk, but transitions between thoughts and slides were not always smooth.	2
The structure of the talk did not seem planned, and moving from slide to slide was disjointed.	1
The speakers completed their talk in the allotted time.	3
The speakers completed most of their talk in the allotted time.	2
The speakers were forced to stop well before the end of their prepared material.	1
The pace at which ideas were presented was about right.	2
The pace at which ideas were presented was too fast or too slow.	1

Slide Preparation	Score
The slides did a good job of conveying the material clearly succinctly, through good use of (e.g.) white space, slide transitions, slide titles/headings, Theorem/ Definition boxes, figures and/or diagrams, etc.	3
The slides did a decent job of conveying the material under discussion, using some of the above mentioned techniques.	2
The slides were hard to follow, and inhibited comprehension of the material, due to (e.g.) poor layout, too much text on each slide, a lack of structure/ headings.	1
Mathematical notation was displayed neatly and correctly.	3
Mathematical notation had some minor errors that affected clarity.	2
Mathematical notation was frequently not rendered correctly.	1

Audience Engagement	Score
The speakers employed good eye contact and professional body language, and directly interacted with the audience. Their tone of voice held attention, and what they said matched up well with their slides' content.	4
The speakers attempted to keep the audience's attention, through eye contact, tone of voice, and body language. At times, however, their presentation lacked the direction necessary to keep the audience engaged.	3
The speakers exhibited some behavior conducive to audience engagement, but lacked others (e.g. frequent eye contact, open body language, articulation).	2
The speakers behaved in a way that was distracting, and/or little regard was given to maintaining the audience's interest.	1
Total	39