

MTH 229H Presentation Project

This presentation project assesses all five outcomes in the course: Communication Fluency, Inquiry based thinking, Integrative thinking, Metacognitive thinking, Quantitative thinking. Completing this is worth 15% of your course grade.

Step 1. (**Due 27 October** submit to “Presentation 1” in blackboard) Find at least two upper class students/graduate students/professors in your major (or related) and ask them each for two ways “rates of change” (i.e a derivative!) relate to the major or their work, recent work in the field broadly, or to the classes in your major. Also do some independent research on this (talk to me if you have trouble!) and find two more ways rates of change are relevant. Submit the results of this discussion to me, and we will use this information for the next step. I will pick two of the six items you submit to me for you to dive into deeper into in the feedback response to this submission.

Step 2. (**Due 3 November** submit to “Presentation 2” in blackboard) Do the following things about the rate of change I chose for you in the previous assignment:

- Discuss the units involved in that rate of change (e.g. if your rate of change is “miles per hour”, then tell me about both “miles” and “hours”). A short history, about a paragraph long (for each unit), of how those units came about should be submitted.
- Write a paragraph about why this rate of change itself is important (e.g. for “miles per hour”, society needed ways to measure the speed of objects). This can include things like “what is it used for?” “what happens if we don’t think about it at all?” “what affects does studying this rate of change have on society?” etc.
- What happens if you reverse the fraction of the rate of change? What would be the meaning or use of that unit? (e.g. for ”miles per hour” you would consider what ”hours per mile” means). Is it something that can be measured (with or without difficulty)? Why or why not?
- Finally, what happens to the units if you take higher derivatives of the original rates of change and the ones you looked at in #4? Are those used anywhere in your field?

Step 3. (**Due by 17 November** submit to “Presentation 3” in blackboard) Compile this information into a short 5 minute presentation for the class. You can do a slideshow or do a more free form presentation at the whiteboard. Regardless, I need a copy of your presentation for documentation.

Step 4. (**Dead week 27 Nov–1 Dec**) Everyone will deliver their presentation during dead week!