MATH-GA.2840-004: Written and Oral Presentation

Lecture 2: Tips for Teaching

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Exercise: Elevator Talks

Prepare a 3-minute elevator talk for one of the scenarios below.

Topic:

1. Your current research project
2. What is [your favorite mathematical field/topic] ?
   (For example: What is "Linear Algebra" ?)

Audience:

(a) An expert in your field

(b) A researcher whose expertise is not in your field

(c) A first-year graduate student in your dept.

(d) An undergraduate student in a Calculus 1 class

(e) Your neighbor

Today: Tips for Teaching

1. Practical Tips
2. Pedagogical Considerations
3. Managing a Course, etc.

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Recommended reference:
Peter Filene, *The Joy of Teaching*, 2005

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8. Incorporate elements of active learning

Using blackboards effectively

Using slides effectively

Blackboard vs. Slides?

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    - Bloom's Taxonomy
2. How do we get there?
    - Lectures
    - Active learning methods
3. How do we evaluate students' learning?

Bloom's Taxonomy

A framework for classifying "educational learning objectives into levels of complexity and specificity".

1. Remembering
2. Comprehending
3. Applying
4. Analyzing
5. Synthesizing
6. Evaluating
7. Creating

Bloom's Taxonomy

Other examples in university-level math:
`https://www.math.toronto.edu/writing/BloomsTaxonomy.pdf`

Active Learning Methods

Lectures + Active Learning

Active Learning Methods

Other reading on active learning in university-level math:

Benjamin Braun, Priscilla Bremser, Art M. Duval, Elise Lockwood, and Diana White, *What Does Active Learning Mean For Mathematicians?*, Notices of the AMS, Vol 64, No 2
`http://www.ams.org/publications/journals/notices/201702/rnoti-p124.pdf`