

MATH 111: Techniques of Calculus II

Section 1: 110 Osmond Lab, TR 10:10 AM - 11:00 AM

Section 2: 106 Osmond Lab, TR 1:25 PM - 2:15 PM

Due: May 2nd @ midnight

Describe an instance where a topic or set of topics covered in this class could be used in your field. This application could be a known instance or one you come up with. Write 2 pages, single-spaced. The format is the same as with previous assignments. Be sure to explain:

- the situation in which this mathematical technique arises,
- the differences in terminology between math and your field (if applicable),
- the underlying assumptions of the approach,
- why the mathematical technique “makes sense” for this instance,
- what the mathematics helps us understand, and
- potential ways in which the mathematics could be used incorrectly (e.g. an incorrect assumption for a situation) or misinterpreted (e.g. the mathematical model versus reality).

Be sure to write your assignment for a general audience—one that is not from your field. **Most importantly:** *reference all your claims!*

Potential topics to consider from this class:

- Stock-Flow systems
- Fitting data to a function
- Solving a system of linear equations
- Partial derivatives
- Gradients
- Level curves
- Directional derivatives
- Critical points
- Optimization with restrictions
- Game Theory and the Tragedy of the Commons (4/21)
- Predator-Prey models (4/23)