# MATH 442: Mathematical Modeling

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## Writing 1 – draft due Thursday 1/24/2013, final due Thursday 1/31/2013

**Instructions:** Use LaTeX to write up the answer to the following prompt. You should have information on this from your class notes from the first week of class; if you missed the first week of class, it would behoove you to get the notes from a classmate! You should also look over the examples of mathematical models on the course website, and you may want to crack open *A Concrete Approach to Mathematical Modeling*.

**Writing Prompt:** Imagine a friend, a parent, or maybe a person sitting next to you on the Fish Camp bus asks you what mathematical modeling is. Write a two-person dialog of the conversation that ensues. One character explains what mathematical modeling is and the other character asks questions, and makes comments. During the course of the dialog address

- How does a real world modeling problem usually come about?
- How does a researcher go about addressing it?
- What are the steps that go into mathematical modeling?
- What is quantification and what is its role?
- What is the role of making assumptions?
- What are mathematical models used for?
- Are any of the points you are making particularly difficult to understand? Use your two examples to clarify.
- Discuss exactly two examples of mathematical models to make your points clear and your answer more concrete.

Your response will probably be 750-1000 words long (1.5 to 2 pages). I have been known to give extra credit for especially creative, interesting and/or funny dialogs; if you have a good idea, run with it!

**What you should gain from this assignment:** By the end of this assignment, you should have an overview of what goes into mathematical modeling and some basic familiarity with LaTeX.

**Grading:** You will hand a PDF of your assignment in with the TurnItIn Tool on eLearning. The points in this assignment are broken into the following general categories

1. Approximately 5 points for the logical structure/organization of the dialog as a whole.
2. Approximately 15 points for covering all of the main points of mathematical modeling and important definitions.
3. Approximately 5 points for using the examples well to explain the points in the essay.

**Total: 25 points**