MATH 402W D100 WARM-UP PROJECT

Due: Tuesday, January 19th (in class)

The warm-up projects are based on a contest modelling problem, the *Interdisciplinary Contest in Modeling (ICM)*, developed by the Consortium for Mathematics and its Applications. Each group will select on aspect of the described problem to model.

The main task in the project is to produce a report that models one aspect of the problem, following the guidelines of the contest. The report should include:

1. A non-technical introduction to the problem that is directed to the people commissioning the project. You should assume that they do not know much mathematics.
2. An description of your model that is understandable to a non-technical audience, yet accurate enough that it will not offend an engineer. Be sure to state and clarify your assumptions.
3. A description of how you solved your model. Again, this should be widely understandable and correct.
4. A series of recommendations for immediate actions based on your results.
5. A discussion about possible improvements and further work beyond what you have done.
6. The actual detailed models and solutions to them should be presented as appendices to the report. For the appendices, your audience is someone that has some technical background, and may be tasked with revisiting your model in the future as assumptions change. This should be readable, while at the same time including all the necessary technical details.

In addition to the written report, the groups will make a brief presentation in class on Tuesday, January 19th. This will last at most 10 minutes, followed by an additional 5 minutes for questions and discussion. The presentation will be done by one student, selected by the group. The presentation is directed at a non-technical audience.

The presentation should be based on well-designed overheads, which will be submitted as part of the grading. There should be at most 10 overheads in addition to the title page. The overheads should not be crowded.

The projects will be graded according to a marking rubric, which is provided along with this assignment.