Syllabus: AMSC/MATH 420, Spring 2013

Instructors: Brian R. Hunt, bhunt@math.umd.edu, MTH4408
C. David Levermore, lvrmr@math.umd.edu, MTH3313

Class time: MWF 11
Classroom: MTH 1313

Course web page: http://www.terpconnect.umd.edu/~bhunt/420/

Course Description This is a course on mathematical modeling as a process, not as a collection of techniques. Students will work in groups on projects motivated by real-life problems, and will, with the aid of the instructor, complete the entire process from formulating a mathematical model to mathematical, statistial, and computational analysis of the model to oral and written presentation of the results. Some background in linear algebra, ordinary differential equations, basic probability and statistics, and computational methods is expected. Additional mathematics will be introduced as dictated by the projects.

Group Work Groups are expected to meet regularly outside of class. For each project, the group must submit a written report describing (among other things) the problem that was investigated, the model used and the justification for it, results from analysis and simulation of the model, and the conclusions drawn from the results. Groups will also give a brief oral report summarizing their methods and findings. Groups must submit both a paper copy and an electronic copy of their written report.

Individual Responsibilities Some individual assignments will be given early in the semester. Each person in a group must participate in the group's oral report as well as its written report. For each oral report, every person not in the group is expected to submit a paragraph or two on a separate sheet of paper summarizing and critiquing the report – what did you feel were the main points of the report, what was hard to understand, what did you find particularly effective, etc.

Academic Integrity In accordance with campus policy, you should write by hand and sign on every assignment submitted an honor pledge using the following wording.

> I pledge on my honor that I have not given or received any unauthorized assistance on this assignment.

The basic principle to keep in mind is to avoid representing the work of others as your own. Individual homework assignments should be done individually. For group assignments and projects, input from sources outside the group (other than the instructors) should be cited.

Final Grade There will be no exams. The project due dates and the recipe for your final grade are as follows:

Weekly assignments:	(various dates)	45%
1st group project:	March 11-15	20%
2nd group project:	April 29-May 8	30%
Class participation:	(always)	5%

The range of dates given is time we have allowed for oral reports; written reports will be due on the last date listed.