Modeling, Part I: Fall 2005
Syllabus

INSTRUCTOR: Dr. Hundley
OFFICE: Olin 234
OFFICE HOURS: 10AM Mon and Thur, 2PM on Tues

Feel free to schedule an alternative time to meet if you can't make these hours.

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All course handouts will be on my website- You might want to bookmark it for a handy reference!

1. **Text:** Mathematical Modeling: A Comprehensive Introduction. By Michael J. Kirby and Gerhard Dangelmayr.

   These are DRAFT notes, and will be available in PDF format on my website. Please don't print off too much, I'll pass out hardcopy in class.

2. **Technology:** There is a programming requirement for our class, but this is not a programming course- therefore, we will use built-in commands wherever possible, and I will have lots of examples to give you.

   We will be using the Matlab software. The Math Computer Lab was reconfigured this summer- See the Matlab handout to put a Matlab icon on your toolbar.

3. **Grading Criteria.**

   (a) Homework: 20%. Homework will be collected each Friday, and it will cover the problems assigned on the previous Friday, Monday and Wednesday. The first Homework set will be due on Friday, September 9th.

   (b) Exams: 40%. There will be two exams and a final. The first exam will cover chapters 1-2, and the second exam will be over linear/nonlinear programming.

   The final exam will also be 20% of the overall grade, covering Chapters 5-6 (empirical modeling, discrete modeling).

   (c) Final Group Projects: 20%. The last two weeks of class will be working on Group projects. More on this later.

   GRADING: Grading is done on a standard scale:

   90-100%=A, 80-89%=B, 70-79%=C, 60-69%=D, 59 and below=F

   I will use the plus/minus grading only sparingly in those borderline cases.

4. Attached is an outline of the topics we'll try to cover. As this is the first time this course has been offered, the topics may change.

Course Topics

1. First Week: Intro to Modeling (Chapter 1) and Intro to Matlab. On Friday, we'll meet in the Math Lab.
2. (About 2-3 weeks) Modeling with Proportion and Scale.

   The first exam will probably cover Chapters 1 and 2.
3. (About 2 weeks) Linear Programming (Chapter 3)
4. (About 2 weeks) Nonlinear Programming (Chapter 4)

   The second exam will probably cover Chapters 3 and 4.
5. (About 2 weeks) Empirical Modeling (Chapter 5)
6. (About 2 weeks) Difference Equations (Chapter 6)
7. Last 2 weeks (after Thanksgiving Break) Group Projects.