Modeling, Part I: Fall 2003
Syllabus

INSTRUCTOR: Dr. Hundley
OFFICE: Olin 234
OFFICE HOURS: 10AM Mon, Tues, Thurs.
   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.

   Matlab will be used for just about everything we do, but Maple has some nice linear programming tools that are built-in. We'll schedule some time in the Math Computer Lab to give you some experience in both of these software packages.

3. **Grading Criteria.**

   (a) Homework: 40%. Homework will be collected each Thursday, and it will cover the problems assigned on the previous Thursday, Monday and Tuesday. The first Homework set will be due on Thursday, September 11th.

   (b) Exams: 40%. There will be three exams, on Tuesdays September 30th, October 28th and November 18th.

   (c) Final Group Projects: 20%. The last two weeks of class will be working on Group projects. Keep our date open- We might have presentations.

   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 and Matlab (Chapter 1) On Thursday, Sep 4, we'll meet in the Computer Lab, Olin 248.

2. (About 2-3 weeks) Graphical Analysis/Dimensional Analysis (Chapter 2)
   The first exam will probably cover Chapters 1 and 2.

3. (About 2-3 weeks) Data Fitting (Chapter 3)

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

5. (About 2 weeks) Nonlinear Programming (Chapter 5)

6. (About 2 weeks) Difference Equations (Chapter 6)

7. (About 2 weeks) Simulation Modeling (Chapter 7)

8. Last 2 weeks (after Thanksgiving Break) Group Projects.