Mathematical Optimization, Applications & Analysis
MA 421 Fall 2006

INSTRUCTOR: Dr. Mark Parker
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OFFICE HOURS: MWF 3:00–5:00 TR 11:00 - 12:00 or by appointment

Welcome! This course is the capstone of your mathematical tenure at Carroll. On our journey this semester, we will explore the application of mathematics to a variety of real-world problems. We will not only use much of the mathematics you have learned in your other courses; we will also tie together and extend it as well. You might have a few questions about the course; hopefully, many will be answered below.

"What is this course about?"
This course is a project-based exploration of topics in mathematical modeling, focusing on the modeling process and optimization. We explore the modeling, solution approaches to, and sensitivity analysis of real world problems. Computers and technology will play an important role as we investigate both the implementation and the theoretical basis of solution techniques. This course will bring together topics from single and multivariable calculus, linear algebra, and probability.

"What textbook are we using?"
The book we will be using is *Mathematical Modeling and Computer Simulation*, 1st Edition, by Maki and Thompson. The text is thin, but contains a nice overview of the mathematical modeling process, as well as introductions to stochastic models, simulation models, and other math programming models.

"How will my grade be determined?"
Your grade will be based on the following:

ASSIGNMENT	% OF TOTAL
Homework and Labs	25%
Projects	60%
Graded Reviews	15%

The final exam will be: **3:00 – 4:45 Tuesday Dec, 12TH.**

"Will we be meeting in the Computer Lab?"
I have the small computer lab (Simperman 147) on reserve every day. We won't be meeting there all the time, so stay tuned for directions. We will use *Matlab*, *Gams,* and *Excel* for the projects.

"What's your policy on late work?"
I collect homework and projects **at the beginning of class on the due date.**
In order to be successful in this course, you must stay caught up, so I encourage you to keep up with your homework. In order for me to hand back assignments in a timely manner, it is imperative that work be turned in **on time**.

No work beyond the due date will be accepted; students will receive a grade of zero for work not turned in on the due date.

Let me know as soon as possible if you have circumstances (health or personal) that will require extended absences so that we can work out an acceptable arrangement.

"What about getting some help?"
Stop by if you need help! If my office hours don't work for you, **let me know and we can schedule another time for me to be on campus**.

"Anything else?"
I welcome your constructive comments to help make this the best course possible. The key to your success in this course depends mainly upon your attitude, your study habits, and your desire to learn. Let's have fun!
If you have special needs or problems, please be sure to speak to me or see Joan Stottlemyer in the Academic Resources Center (447-4504) about them as early as possible in the semester. There is additional information in the Carroll College catalog.