# Math 181 - Section E1 - A Mathematical World

Course Syllabus

## Course Location

MWF 1:00-1:50 Room 341, Altgeld Hall.

## Contact information

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Office Hours: Tuesday 2-3pm, Friday 9-10am, and by appointment.

## Course Information

This course will be a discussion of a number of mathematical topics that arise naturally in practical problems in the real world. Many (but not all!) of these problems have clever solutions. We will cover material relating to graph theory, voting theory, fair division, probability and statistics, and additional topics based on student interest.

The official prerequisite for this class is two years of high-school algebra and one year of high school geometry.

Website: http://www.math.uiuc.edu/∼jarouse/teaching/S2009/m181/
Textbook: For All Practical Purposes, COMAP, W.H. Freeman and Company, 7th edition. ISBN: 0-7167-6901-8 (paperback) or 0-7167-5965-9 (hardback).

## Homework

After each class, I will post several homework problems on the course website. Some of these will be fairly routine, and some will be more challenging. I will mark some of the problems as non-graded, which I recommend doing for your own practice. The remainder should be turned in. Homework from week $n$ will be due at the beginning of class on Wednesday of week $n + 1$. The "lowest" homework score will be dropped. (Exception: Homework assigned the first week of class will be combined with problems from the second week. The first homework assignment is due on Wednesday, February 4).

Homework will contribute 10 percent of the course grade. I encourage working on homework in groups. I ask, however, that each student write up their own solutions without reference to their friends, or their friends' work. Two main purposes of the homework are (1) for you to really grapple with the material we talk about in class, and (2) give me and you feedback about how well you understand the material. Simply copying from your friends is counter to both of these purposes.

## Quizzes

A quiz will be given each Friday (except January 23) at the end of class. Quizzes will contribute 15 percent of the course grade, and the lowest quiz of the semester will be dropped.

## Exams

There will be three in-class exams. Each will be worth 15 percent of the course grade. Material covered in class, in the book, and on the homework assignments (both graded and non-graded problems!) is fair game on the exams. The first exam will be on Friday, February 20. The second exam will be on Wednesday, April 1. The third exam will be on Friday, April 24.

The final exam is worth 30 percent of the course grade, and will be given from 1:30-4:30 pm on Tuesday, May 12.

Calculators are not allowed on exams.

## Grades

The course grade will be computed from the scores on the homework and exams. The precise grade distribution will be determined at the end of the course, but a score of at least 90/80/70/60 percent will earn a grade of at least A-/B-/C-/D-, respectively.

## Getting Help

Here are some resources.

- Attend Class. I will try to carefully explain more difficult material, and occasionally present (interesting) examples that aren't in the book.
- Read the book. I will not be able to cover all of the material you need to know in class.
- Do the homework. The only way to *really* learn math is to do it yourself. This is your chance.
- Office hours. If you have any questions about the material from lecture or the homework (or anything else), come to my office hours and ask. Also, feel free to e-mail me and ask questions.
- Other students in the class. You should talk to other students, ask them questions, answer their questions, and work with them on homework.
- Tutors. See `http://www.math.uiuc.edu/UndergraduateProgram/tutoring.html`.

## General Comments

Class attendance is required. I expect all of you to attend every class. In exchange, I will strive to make class an interesting and meaningful experience for all of you. I hope you enjoy it!