

Syllabus for Math 223, Fall 2004

Geometry

- **Text:** The text for this course is *Euclidean and Non-Euclidean Geometry* by M. Greenberg.

- **Instructor:** Jesse Ratzkin

- **Office:** M423
- **Office Hours:** Tuesdays 11:30–1:00, Wednesdays 11:00–12:00 and by appointment
- **phone number:** 486-8391
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- **Tentative Schedule:** I should emphasize that this is very tentative. I have listed a time span in the first column, the subject in the second column, and the approximate page numbers of the text the third column.

August 30–September 3	Euclid's postulates and logic	6–49
September 8–17	incidence geometry and models	50–62
September 20–27	Hilbert's axioms	70–102
October 1–22	neutral geometry	115–134
October 25–November 1	the parallel postulate	149–185
November 5–19	non-Euclidean geometry	185–200
November 29–December 10	hyperbolic space	223–258

Time permitting, I will also discuss the basics of spherical geometry.

There will be three exams in this course, including the final (which is **Thursday, December 16, 8am**). The midterm exams will be on **Wednesday, September 29th** and **Wednesday November 3rd**.

Here is a list of some other dates you might want to keep in mind:

- Labor Day: September 6
- Thanksgiving Break: November 22–26
- Last day to drop: November 1

- **Grading:** To assign grades, I will form a weighted sum of all the grades you receive throughout the semester. The weighting will be

midterm exams	20% each
homework	25%
final exam	35% .

- **Homework Policy:** I will assign homework approximately every two weeks, and grade several selected problems from each assignment. You are encouraged to collaborate with others in the classes, but you must write each homework assignment in your own words. I do not accept late homework assignments.
- **Exam Policies:** I do not allow reference materials (e.g. a page or index card of notes) during exams. I do allow calculators which cannot do symbolic computations, but they are not required.

- **ADA Statement:** The Americans with Disabilities Act requires that reasonable accommodations be provided for students with physical, cognitive, systemic, learning and psychiatric disabilities. Please contact me at the beginning of the semester to discuss any such accommodations you may require for this course.
- **General Comments:** Please ask me questions. In general, this is the best way for you to learn the material, and the best way for me to tell how well the class is following the lectures. Asking many questions makes you happier and my job easier. I also encourage you to come to my office hours, or just drop by my office.

Please keep in mind that mathematics is not a spectator sport! You can only learn math by doing it, so it is imperative that you do the homework.

- **Some Comments Specific to this Course:** This course will probably be unlike any other math course you've taken, which might make it hard. In addition to learning some strange (and beautiful) aspects of geometry, you will learn what constitutes a rigorous proof, which many people have trouble grasping when they first encounter it. Practice helps a lot. The text has many examples of careful, rigorous proofs; you will profit by thinking about them carefully.

I think reading ahead of my lectures will also help you a great deal. This can be time-consuming, as reading a math book is usually slow-going. It is also very rewarding. Reading ahead will give you a different perspective on my lectures, and (hopefully) make them easier to understand.

Good luck.