

Syllabus for Math 223, Spring, 2005

Geometry

- **Text:** The text for this course is *Geometry* by M. Hvidsten.
- **Instructor:** Jesse Ratzkin
 - **Office:** M423
 - **Office Hours:** Mondays 2:00-3:00, Wednesdays 12:30-2:00 and by appointment
 - **phone number:** 486-8391
 - **email:** ratzkin@math.uconn.edu
 - **webpage:** <http://www.math.uconn.edu/~ratzkin/teaching/m223>
- **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 section of the text the third column.

Jan. 19	introduction, the golden ratio	1.3
Jan. 21–28	axiomatics	1.4–1.6
Jan. 31–Feb. 9	Euclidean geometry, esp. triangles	2.1–2.5
Feb. 11–14	circles	2.6
Feb. 18–25	analytic geometry, the complex plane	3.1, 3.2, 3.4, 3.5
Feb. 28–March 16	Euclidean motions	5.1–5.4, 5.6
March 18–23	Euclidean symmetries	6.1–6.3
March 28–April 11	hyperbolic geometry	7.1–7.6
April 13–27	symmetries of the hyperbolic plane	8.1–8.3, 8.6

Time allowing, I will also discuss fractals (see chapter 9).

There will be three exams in this course, including the final (which is **Wednesday, May 4, 1pm**). The midterm exams will be on **Wednesday, Feb. 16** and **Friday, March 25**.

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

- Spring Break: March 7–11
- Last day to drop: March 28
- **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
 - projects/homework 20%
 - final exam 40% .
- **Projects and Homework:** I will assign several projects during the semester, in which you are to research a topic and present to me what you find. You may work on these projects in groups of 3–4 people. I will also assign homework problems, which you don't necessarily have to hand in. However, you should do the homework problems, because some of the exam questions will be very similar.
- **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.