

Syllabus for Playing with Curves: Art and Mathematics

Math 197 D - Autumn 2015

Lecturer: Dr. Matthew M. Conroy

Office: In the Math Study Center, Communications B-014

Email: conroy@math.washington.edu
(always specify Math 300 in the subject line)

Web page: www.math.washington.edu/~conroy

My office hour times can be found at the web page above. Office hours are times when you can speak to me without making an appointment - just stop by. If you can't make those hours, let me know and we can find other times to meet.

Purpose of the seminar:

- To give students opportunities to explore mathematical topics without regard for particular goals, i.e., to play (experiment, etc.) with mathematical concepts and methods.

The hope is that students will find joy in this kind activity and will seek interaction of this sort with the rest of their topics of study, allowing them to have a broader, richer educational experience.

- To give students the experience of dealing more closely with faculty than many would otherwise have in, say, lower-division undergraduate courses.

The hope is that this will make it easier for students to approach faculty, and gain the benefits for faculty-student interaction, in the rest of their educational careers.

Meetings: The seminar meets weekly, on Mondays from 2:30 to 3:20 PM.

Assessment: All students will attend the seminar and participate in discussions. There will be weekly prompts posted to the seminar's board: all students will respond weekly to all prompts.

Unless otherwise indicated, the way the prompts will work is as follows. You will respond to a prompt; I will respond to your response; you will then respond to my response before 11:00 PM on Sunday following the prompts posting. Provided your responses are thoughtful and indicate sufficient effort on your part, your work for the week will be marked satisfactory.

I'll measure participation at most seminar meetings. There may be some readings that I will ask you about at our meetings.

If you achieve satisfactory prompt marks in 80% of the weeks of the course, and you have at least 80% participation, you will achieve a passing grade for the seminar.

Tentative schedule:

In this seminar, we will explore a wide variety of plane curves; specifically, we will be interested in the visual qualities of curves.

week 1	10/5/15	Introduction
week 2	10/12/15	Sage introduction
week 3	10/19/15	Algebraic curves
week 4	10/26/15	Parametric curves
week 5	11/2/15	Polar curves
week 6	11/9/15	Curves and the exponential function
week 7	11/16/15	Curvature: how curved is that?
week 8	11/23/15	Envelopes
week 9	11/30/15	Orthogonal families
week 10	12/7/15	Who knows?