MATH 632: ALGEBRAIC GEOMETRY II (WINTER 2021)

Course Information

Lectures: TR 11:30am-1pm on Zoom (link to Zoom session on Canvas page)
Lecturer: Aaron Pixton
E-mail: `pixton@umich.edu`
Virtual Office Hours: M 11am-12pm, T 3pm-4pm, R 4pm-5pm on Zoom (link on Canvas), or by appointment

Course Website

The main course website is at `http://www-personal.umich.edu/~pixton/632/`. I will use the Canvas site at `https://umich.instructure.com/courses/405339` for the virtual logistics of the class (Zoom).

Course Description

This is a continuation of Math 631. Topics covered will include quasicoherent sheaves, line bundles, sheaf cohomology, algebraic curves, differentials, and the Riemann-Roch theorem. For most of the term we will be (loosely) following Ravi Vakil's notes "Foundations of Algebraic Geometry" (available at
`http://math.stanford.edu/~vakil/216blog/index.html`), beginning with Chapter 13.

Prerequisites

I will assume general familiarity with Chapters 1-12 of "Foundations of Algebraic Geometry".

Problem Sets

There will be problem sets every 1-2 weeks, usually assigned on Thursdays and due on the following Thursday. Problem sets should be submitted by e-mail (to me at `pixton@umich.edu`); please use the subject line "632 - Problem Set N", where N is the number of the problem set.

You are encouraged to discuss the problems with your classmates, but you must write up your solutions independently. You must also include a written acknowledgment of everyone you worked with in your assignments, as well as any external sources you consulted.

There will be no written exams. In addition to the 6-8 problem sets, near the end of term you will be asked to read and learn more about some additional topic of your choice in algebraic geometry (I will provide a list of suggested topics). You will then have the option of either writing a short expository paper on the topic or doing an informal oral exam on it. (This component will be 25% of your final grade.)

Office Hours

My current regular office hours are M 11am-12pm, T 3pm-4pm, R 4pm-5pm. If none of those times work with your regular schedule, please let me know! If you can't come to any of them in a specific week, feel free to write me an e-mail to schedule another time.