ALGEBRAIC GEOMETRY: MATH 137 SPRING 2009-2010 SYLLABUS

This course will introduce the basic concepts of algebraic varieties in projective space, with an emphasis on curves in the plane because they are both concrete and beautiful. We will cover enough commutative algebra to be able to discuss things like singularities and genus rigorously, but the emphasis of the course will be on geometric objects and constructions. Topics covered will include affine and projective spaces, singularities and genus of a plane curve, Bezout’s theorem, and Riemann-Roch.

The prerequisite for this course is a solid background in abstract algebra, as in Math 123.


Optional text: Harris Algebraic Geometry: A first Course GTM 133 Springer

Time and Place: MWF 2:07-3:00 Science Center 310

Office hours: Tuesday 10:30-11:30 or by appointment.

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CA Laura Starkston, e-mail: lstarkst@fas.harvard.edu

Homework, Exams, and Grading: A problem set will be due every week on Wednesdays, with the first problem set due February 3. There will be a take-home exam in the middle of the term, and a take-home final exam. The total course grade will be determined by weighting the homework 50%, the first exam 20%, and the final exam 30%. You are welcome (and encouraged!) to collaborate on problem sets--as always, please write down the names of your collaborators on your solutions. Late homework will not normally be accepted, but your lowest homework score will be dropped before averaging.