Math 250b, Introduction to Toric Varieties
Spring 2018

Venue: Goldsmith Rm TBA
Time: MW 3:30–4:50, Block L.
Instructor: Bong Lian (lian@–, Goldsmith 314, X6-3069)
Office Hours: MW 2:30–3:30 or by appointment

I will use the LATTE forum to communicate with you occasionally. You may post comments or questions that you think will be of general interest to the whole class.

Course Description
Textbook: Introduction to Toric Varieties, by William Fulton
Reference: Toric Varieties, by David Cox, John Little and Hal Schenck

This will be an introductory course on toric varieties. They form an important class of algebraic varieties which are close cousins of the familiar projective spaces. One reason is their deep connections to a wide range of subjects including combinatorics, symplectic geometry, mirror symmetry, not to mention algebraic geometry itself. Another reason is that it often provide an effective testing ground for interesting conjectures and problems in geometry.

My plan is to follow Fulton’s book and study toric varieties by way of examples and illustrating their connection to various interesting topics and problems. The 800+ page reference listed above will also be frequently consulted.

As for prerequisites, students should be somewhat familiar with the notions of algebraic varieties and morphisms between them. All other necessary background will be developed in class.

Grading
I will assign regular homework exercises, usually during lectures, but they will not be graded. Students taking the course for credit may be asked to lecture on selected topics that we do not have time to cover.