Junior seminar, Fall 2013

Coxeter groups: algebra, combinatorics, and geometry.
Instructor: Claudiu Raicu

References:

- *Reflection Groups and Coxeter Groups* by James Humphreys. (main)
- *The Geometry of Coxeter Groups* by Howard Hiller.
- *Combinatorics of Coxeter Groups* by Anders Björner and Francesco Brenti.

Meeting time & place:

Mon 8–10am, Fine 1001.

Topics:

September 23. Introduction to finite reflection groups.
Speakers: Arjun and Clayton.

September 30. Classification of finite reflection groups.
Speakers: Khalid and Mason.

October 7. Polynomial invariants of finite reflection groups.
Speakers: Lisa and Monica.

October 14. Affine reflection groups.
Speakers: Mariya.

November 4. Introduction to Coxeter groups.
Speakers: Alexander, Billy and Mariya.

November 11. Special cases of Coxeter groups: finite, affine, crystallographic, hyperbolic.
Speakers: Alexander and Mason.

November 18. Grassmannians, flag varieties and Schubert calculus.
Speakers: Arjun and Monica.

November 25. Hecke algebras and Kazhdan–Lusztig polynomials.
Speakers: Billy and Lisa.

December 2. Representations of finite Coxeter groups.
Speakers: Khalid.

December 9. Connections with Lie algebras.
Speakers: Clayton.