

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, Mason and Claudiu.
- October 7. Polynomial invariants of finite reflection groups.
Speakers: Lisa and Monica.
- October 14. Affine reflection groups.
Speakers: Dan, Elena and 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, Elena and Mason.
- November 18. Grassmannians, flag varieties and Schubert calculus.
Speakers: Arjun, Monica and Claudiu.
- November 25. Hecke algebras and Kazhdan–Lusztig polynomials.
Speakers: Billy, Lisa and Claudiu.
- December 2. Representations of finite Coxeter groups.
Speakers: Dan, Khalid and Claudiu.
- December 9. Connections with Lie algebras.
Speakers: Clayton.