Syllabus for Math 227A: Topics in Topology
Coxeter groups and reflection symmetries
Fall 2011

Instructor: Jon McCammond
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Text: No required text, but three books are recommended as being quite good: "Reflection groups and Coxeter groups" by Humphreys (1990), "Combinatorics of Coxeter groups" by Bjoerner and Brenti (2005), and "The Geometry and Topology of Coxeter Groups" by Davis (2008).

Course description: Math 227 is a topics course in topology, broadly defined. The topic changes from quarter to quarter. This quarter the focus is on the geometry, topology and combinatorics of Coxeter groups and reflection symmetries. After a detailed consideration of the motivating cases of spherical and euclidean discrete reflection groups, the general theory of Coxeter groups will be discussed with a focus on their standard faithful linear representations and the nonpositively curved piecewise euclidean complexes on which they act geometrically.

Grading: Your grade will primarily determined by attendance, participation, and the extent to which you complete the various short assignments given out during the course. As befits a third-year graduate course, the primary focus will be on the material itself rather than the grading.

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