Course Syllabus for Math 155: Combinatorics

Course Description This is an introductory class on combinatorics.

Meeting Time and Place 10:00 MWF, Science Center 103b.

Office Hours and Place 3:00 Tuesdays, Science Center 514.

Text We will not use a textbook. Lecture notes will be provided.

Course Website http://www.math.harvard.edu/~lurie/155.html

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Prerequisites The ability to read and write mathematical proofs is required. Some familiarity with the basics of group theory (Math 122 or equivalent).

Possible Topics • Counting techniques
  • The inclusion-exclusion principle and Mobius inversion.
  • Graph theory.
  • Finite geometries and their automorphism groups.
  • Probabilistic methods in combinatorics.
  • Generating functions.
  • Ramsey’s theorem and some of its variants.
  • An introduction to information theory.

Grading Grades will be based on homework ($\frac{1}{2}$), an in-class midterm (to be held on Friday, October 7) ; ($\frac{1}{4}$) and a final exam ($\frac{1}{4}$). Homework will be assigned on the first class day of every week (usually a Monday) and due on the first class day of the following week.