

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.