Math 155: Designs and groups
Handout #1 (25 January 2016): About Math 155

Topics Math 155 is an advanced undergraduate course in combinatorics focusing on combinatorial designs and their symmetry groups, as described in the Course Catalog and in more detail in the first lecture or two.

Prerequisites We shall make considerable use of linear algebra; the homework assignments and examinations will require you to write proofs. If you have not taken Math 25a/55a or 122 and wish to take Math 155, see me soon. (Later we shall use some basic facts about finite groups, which are also covered in Math 122.)

Textbook Cameron and van Lint: *Designs, Graphs, Codes and their Links* (London Math. Society, 1991, reprinted 1996), which should now be available for purchase at the Coop. The first eight chapters will be the source of most of our material on combinatorics.

Office Hours, etc. My office is Room 335 of the Science Center (right outside the math library on the 3rd floor), telephone #(49)5-4625; my e-mail address is elkies@math.harvard.edu . The course webpage is www.math.harvard.edu/~elkies/M155.15 , and will contain most handouts, problem sets, etc. Office hours TBA. The assistant for the course is Sahana Vasudevan (svasudevan@college.harvard.edu), who will set up her office hours, section time, etc. once the class roster has stabilized.

Grading There will be two mid-term exams, one on designs and one on groups, and a final project. (In past years the class has been small enough that the final projects have taken the form of half-hour presentations in class.) Each mid-term exam will count towards roughly 20% of your grade, and the final will be worth about 30%. The remaining 30% will come partly from class participation, mostly from regular problem sets.

Honor code *"Faculty legislation requires all instructors to include a statement outlining their policies regarding collaboration on their syllabi . . ."*: As usual in our department, you are allowed — indeed encouraged — to collaborate on solving homework problems, but must write up your own solutions. *For the final project or presentation*, work on your own even if another student has chosen the same topic. (As with theses etc., it is still OK to ask peers to read drafts of your paper, or see dry runs of your presentation, and make comments.) *In all cases*, acknowledge sources as usual, including peers in your homework group.