

Syllabus of 21-301A

Combinatorics, 2013 Fall

Lecture Time: MWF 12:30PM–01:20PM

Lecture Location: DH 2302

Instructor: Jie Ma

Email: majiemath@gmail.com

Office: Wean 7130

Office Hours: Monday 10:30AM–12:00PM, Wednesday 4:00PM–5:30PM or by appointment

Prerequisites: Calculus (21-122) and Concepts of Mathematics (21-127)

Textbook: Invitation to Discrete Mathematics, Matousek and Nešetřil, 2nd Edition, Oxford

Covered Materials: Our course will give a broad introduction to combinatorics. We will cover a majority of chapters in textbook and some topics that are not in the book. The materials loosely can be divided into three parts: enumeration (i.e. counting, generating functions and inclusion/exclusion), basic graph theory (i.e. matchings and colorings) and extremal combinatorics (i.e. Ramsey theory and the probabilistic method). The actual covered materials will be updated as the course progresses.

Course Home Page: We will use Blackboard: <http://www.cmu.edu/blackboard/>

Homeworks and course announcements will be posted in the Course Home Page. Course outline/schedule also will be updated there during the semester.

Homeworks:

There will be seven homework assignments during the term, once every other week. Students are required to submit homework **in the beginning of the Friday class**. The lowest score in your homeworks will be dropped.

Students are permitted to discuss with others, however all the writing must be done individually. Selected five problems will be graded for each homework.

Midterms and Final:

There will be three in-class 50-mins midterms on 9/13, 10/16 and 11/22. The lowest score in three midterms will be dropped. The Final will cover all the materials presented during the semester.

Closed book, closed notes and NO calculator for all exams.

Grading Scheme: Homeworks (20%)+ Midterms (20%+20%)+ Final (40%).