

Math 154 – Discrete Math & Graph Theory (Winter 2019)

- Lecture times and location: MWF 12:00PM – 12:50PM, CSB 2
- Textbook: Miklós Bóna, *A Walk Through Combinatorics*, third ed.
- Course website: <http://math.ucsd.edu/~ssam/154/>
- Instructor: Steven Sam ssam@ucsd.edu
- Office hours: AP&M 7220, MF 1-2PM, W 3-4PM

Course description

The main topics are: counting techniques, combinatorial identities, graph theory, and Ramsey theory. We will do mathematical proofs in this course, so the ability to read and write proofs is needed.

I plan to follow Bóna's book, Chapters 1–4, 7, 9–13. A schedule of topics will be posted on the website and updated as necessary. I will add a few things not in the book, so a copy of my own notes will be kept on the website.

Expectations

You are expected to read the textbook, and it will be infinitely more useful for you if you read ahead of the lectures and prepare questions. You are encouraged to work on homework with others, but solutions must be written up individually.

Any students may attend the office hours listed above without appointment. If you need to meet with me at another time, please email me to schedule.

There is a Piazza page: <http://piazza.com/ucsd/winter2019/math154/home>.

All students are expected to sign up and read the Piazza page. Announcements will be made on Piazza instead of email. Any questions about the course or the material should be posted there. Please do not email me or the TAs about general topics: it is more efficient to have everything on Piazza. Also, please refrain from posting solutions to homework.

If there are issues that cannot be discussed on Piazza, please email me.

Important dates

- Jan 7: First lecture
- Jan 30: Midterm 1
- Feb 27: Midterm 2
- Mar 15: Last lecture
- Mar 20: Final exam: 11:30 AM – 2:29 PM

Academic integrity

<https://academicintegrity.ucsd.edu/>

You are free to collaborate on homework, but the final writeup must be done by yourself. If you worked with other students, please list their names on your assignment (this will not affect your score).

Collaboration is not permitted on any exams.

Grading policy

There are 2 possibilities for getting a total score, and you will be given the one that is higher:

Scheme 1:

- Homework: 20%
- Midterm 1: 22.5%
- Midterm 2: 22.5%
- Final exam: 35%

Scheme 2:

- Homework: 20%
- Best midterm: 22.5%
- Final exam: 57.5%

No makeup midterms will be given under any circumstances. If you must miss both midterms due to uncontrollable emergencies, then the final will be worth 80%.

Homework is due most Mondays at 5pm in a dropbox in the basement of AP&M. I plan for there to be 7-8 homeworks, and the lowest homework will be dropped. No late homework will be accepted. If you cannot physically be on campus to turn in your homework, have someone else turn it in for you. It is highly recommended that you photograph or otherwise keep a copy of your homework before turning it in so that you can use it to study if it is not returned before an exam.

Your solutions in homework and exams will be graded for clarity and correctness. Correctness is equally as important as communicating clearly. So, when appropriate, explanations should be given in complete sentences.

Finally, I do not follow “standard” cutoffs for letter grades but will not be any stricter. So, for example, a 90% score will guarantee an A- or higher, but the actual cutoff for an A- is likely to be lower depending on how the course goes (for example, an exam problem may end up being harder than I expected).

How to do well in this course

You cannot learn just from listening to lectures or reading notes. The homework is designed to engage you with the material. So take the homework seriously. Start it early each week and ask questions. Most exam problems will be variations of homework problems, and so if you understand how to solve all of the homework, the exams will be straightforward.

The quarter goes by very quickly and the material builds on itself. As soon as you think you are falling behind, do something about it. We have office hours and Piazza, so take advantage of the resources available to you.

Additional logistics

Students that need special accommodations should talk to me as soon as possible.