

Syllabus for Math 421, Spring 2022

Instructor information

Instructor Name: Cartwright, Dustin

Office Hours: M 1:30–2:30, Th 12:45–1:45, or by appointment in Ayres 210 or online in Zoom meeting 951 5388 0279.

Email: cartwright@utk.edu

Course Webpage: All further information, including updates to this syllabus, will be on the Canvas webpage for this course.

Course Communications: Most announcements will be made in class. I will use Canvas if I want to reach you between classes or if I want to be sure to reach everyone. I will only email you for urgent messages, so please read any email I send you.

The best way for you to contact me is by email. I will reply within 24 hours during the work week and usually faster, especially if you email me during working hours.

Student Learning Objectives

By the end of this course, a student should have be able to apply a variety of combinatorial methods for counting different types of structures in sequences and graphs.

Learning Environment

I expect you to attend every lecture, pay attention, and participate in discussions. If something doesn't make sense, ask questions.

You should treat the other students in the class with respect, in the classroom and in anything connected to it.

Text

A Walk Through Combinatorics by Miklós Bóna.

Course Assessment

- 25% homework
- 15% group work
- 30% two midterms (15% each)
- 30% final

Letter grades will be assigned based on the scale: A 90-100, A- 85-89, B+ 80-84, B 75-79, B- 70-74, C+ 65-69, C 60-64. I may adjust these to be more generous.

Homework: Homework is due by 8:00am on Tuesdays. Assignments will be posted on Canvas at least a week in advance. Homework will be submitted on Canvas as a PDF. If you wish to typeset your solutions, you are encouraged to do so.

Your homework will be graded based on a representative subset of the problems. Your lowest homework grade will be dropped.

If you are enrolled in this course for **graduate credit**, you may have extra problems in some weeks.

Citation policy: You must write your own homework solutions and you must credit any person or source who helped you understand the solution.

- You must credit any person you discuss the homework with. You may do this for the assignment as a whole, or on specific problems.
- Any other source, such as the Internet or books other than the course textbook, must be credited for specific problems, and with enough specificity for me to find your source. For an Internet source, this means giving the URL. You may cite using submission comments.

In all cases, you should make sure you understand your answer and write your answers in your *own words*. You will find sources that use different

notation or conventions, so you should make sure your answers are correct for the conventions used in our course.

Group work: Group work will be done collaboratively in class, possibly unannounced. You will be graded on effort. To accommodate any absences, I will drop the lowest group work grade.

Exams: The exams will be taken during class without any books or electronic devices. The note policy for each exam will be described on the corresponding Canvas assignment for each exam. The second midterm will cover material since the first midterm. The final will be cumulative, with an emphasis on material since the second midterm.

Make up Policy

Late homework will generally not be graded or counted for credit. In lieu of excused homework, I drop the lowest homework grade and the lowest group work grade.

Missed exams will be excused only when circumstances unavoidably prevent you from taking the exam, such as a medical or family emergency. All excuses must be documented, to be approved by the Dean of Students. Accommodation is at my discretion and may take the form of a make-up or by having the final exam replace that component of your grade. Please let me know as soon as possible if you are unable to attend an exam.

In the case of COVID-19, absences will be accommodated only if you have followed the university's policy on self-isolation.

How to be Successful in this Course

Go over the lecture material after each class, either from your own notes, or the corresponding section in the textbook. Talk to other people in the class. Come to office hours. Ask questions in class. Read the textbook. Read Wikipedia or other sources.

Start the homework early. Try to solve each problem on your own before looking for hints. Work with other people on the homework. Share your ideas while you're working to get more feedback and learn how other people think. When you get homework or exams back, look at the feedback and the solutions and understand what you did wrong.

If you find yourself struggling or falling behind, adjust sooner rather than later. Go back over the notes or the book. Come to office hours. Rework problems that you got wrong.

Course Outline and Schedule

- Th, Feb 24: midterm 1
- Tu, Apr 12: midterm 2
- Tu, May 17, 3:30–5:30pm: final

We will cover most of Chapters 1,3–5,7–10,13,15 from the course textbook.

The approximate schedule of daily topics is listed on the Canvas page “Daily schedule”

Campus Syllabus

If the instructor finds it necessary to make informational changes (e.g. office hours, schedule adjustments) due to students’ needs or unforeseen circumstances, students will be notified in writing/email of any such changes.