

Mathematics 724, Fall 2013 (Section #26472) Enumerative Combinatorics (3 credits)

Essential Information

Instructor: Prof. Jeremy Martin (you can call me “Jeremy”)
E-mail: jmartin@math.ku.edu (the best way to contact me)
Office: 623 Snow Hall, (785) 864-7114
Office hours: MTW 1–2 PM, or by appointment

Meeting time: MWF 11:00-12:00, 454 Snow Hall.

Course description: Math 724 is an introduction to enumerative combinatorics. Topics to be covered include basic counting principles, induction and recursion, partitions and compositions, generating functions, and Polyá-Redfield theory. Prerequisite: Math 290 and a math course numbered 450 or higher.

Website: The class website is:

<http://www.math.ku.edu/~jmartin/math724/>

Bookmark the website and check it frequently! You are responsible for all information posted on the website.

E-mail: I will periodically send class information (announcements, homework hints, etc.) to all students’ KU e-mail accounts. You are responsible for checking your e-mail regularly so as to receive this information.

Textbook: Kenneth P. Bogart, *Combinatorics Through Guided Discovery*. Available free from [this link](#). You can buy a bound paper copy from Jayhawk Ink (3rd floor, Kansas Union) for approximately \$10. Bring the book to class every day.

Prerequisites: Math 290 (Elementary Linear Algebra) and at least one mathematics course numbered 450 or above. You don’t need any background knowledge about combinatorics, but you should be comfortable with basic linear algebra and with reading and writing proofs. Experience with computer programming may occasionally be helpful, but is not necessary.

Blatant skill: Please attend the Combinatorics Seminar, which meets on Fridays, 3–4 PM, in Snow 408.

Course Requirements

Classes: Most class time will be spent on solving problems from Bogart, working in small groups (2–3 students). I will focus on working with individual groups rather than lecturing, but now and then I will give a short summary of a topic we’ve just finished.

Homework: Homework will be due in class, approximately every two weeks, starting **Friday, September 6**. Final versions of the assignments will be available on the course website at least a week before the due date. I encourage collaboration on the problem sets, but you must write up your own solutions independently and acknowledge all collaborators. There will be 6 or 7 problem sets. The homework will be worth a total of 60% of your grade. Solutions must be written up in LaTeX.

Tests: There will be take-home tests due on **Friday, September 13**, **Friday, November 8**, and **Tuesday, December 17**. They will be worth 10%, 15% and 15% of your grade, respectively. Final versions of the tests will be available on the course website at least a week before the due date. The difference between the homework and the take-home tests is that **no collaboration is allowed on the tests** — the only person you are allowed to consult is Jeremy. There will be no in-class final exam.

Administrative Information

Makeup work: Your enrollment in this course is a commitment to hand in all work on or before its announced due date. If, for some legitimate and unavoidable reason, you are unable to turn in a homework assignment on its due date or to attend a scheduled test, midterm or final exam, you must notify Prof. Martin *in advance* to make appropriate arrangements.

Approximate time commitment: This is 3-credit course, so I would guess that most students will need to spend about 6 (or more) hours per week outside of class to earn a decent grade. In addition to spending time on homework, you should prepare for each day's class by looking at the problems scheduled for that day, and reading any relevant expository material in the textbook.

Incompletes: A grade of I is a rare occurrence and is reserved for cases in which a student has completed most of the course work at an acceptable level, but is prevented from completing the course due to *extraordinary* circumstances. If you think an I may be warranted, you must consult the instructor *before* the final exam. Note that a grade of I cannot be made up by taking the course again.

Dropping the course: Through September 16, you may drop a course and have it removed from your record. From September 17 through November 20, you may withdraw from a course (a grade of W will appear on your transcript). After November 20, dropping is not permitted. For complete details, consult the KU Registrar's office (151 Strong Hall; 785-864-4423; <http://www.registrar.ku.edu>).

Academic honesty and collaboration: You are required to abide by all KU policies on academic integrity: see <http://documents.ku.edu/policies/governance/USRR.htm#art2sect6>. Cheating, plagiarism or other academic misconduct will result in a failing grade on the assignment in question, and usually further disciplinary sanctions, possibly including a failing grade in the course.

You are encouraged to collaborate with other students on the homework assignments. However, intellectual honesty requires that each student write up his or her own solutions and acknowledge all collaborators. It is a violation of academic integrity to copy another student's homework, or to let someone else copy yours.

Students with disabilities: The KU Office of Disability Resources (22 Strong Hall; 785-864-2620 (V/TTY); <http://www.disability.ku.edu>) coordinates accommodations and services for all students who are eligible. If you have a disability for which you wish to request accommodations, please contact Disability Resources as soon as possible. Please also contact Prof. Martin privately in regard to your needs in this course.

Religious holidays: If you plan to observe a religious holiday which conflicts in any way with the course schedule or requirements, contact Prof. Martin at the beginning of the semester to discuss alternative accommodations.

Intellectual property: Course materials prepared by the instructor, together with the content of all lectures and review sessions, are the intellectual property of the instructor and are solely for use by students enrolled in the course. Redistributing course materials in any form without the consent of the instructor is prohibited. Likewise, video and audio recording of lectures and review sessions without the consent of the instructor is prohibited. Upon reasonable request, the instructor will usually grant permission to record lectures, on the condition that such recording is used only as a study aid by the student making the recording, and is not modified or distributed in any way.