

General course information

Instructor: Balázs Szegedy **Office:** IC458 **e-mail:** szegedyb@gmail.com

Textbook: Applied combinatorics, Alan Tucker, 5th edition

Prerequisites: MATB24 (Linear Algebra II.)

Course overview and syllabus: MATC44 is an introductory course in combinatorics.

1. Chapter 5: General counting (The addition and multiplication principles, Permutations, combinations, binomial coefficients)
2. Chapter 6: Generating functions. (polynomials, power series, polynomial expansions, coefficient calculations, partitions, exponential generating functions)
3. Chapter 7: Recurrence relations. (general recurrence, linear recurrence, connection to generating functions)
4. Chapter 8: Inclusion-exclusion. (Venn Diagrams, Inclusion-exclusion formula)
5. Chapter 1-2: Elements of graph theory, graph colorings, Euler and Hamiltonian cycles.
6. Chapter 3-4: Trees, spanning trees, shortest path, network flows, algorithms.

Grading scheme:

Assignments (probably six) 30% (your lowest assignment is omitted)

Midterm Test 25% (date/time/place TBA)

Final Examination 45% (date/time/place TBA)

Assignments Assignments will be posted on my website and handed-out in class. You may certainly collaborate with your colleagues in trying to solve the assignment problems. However, your submitted work must be written in your own words. If your work appears too often to be too similar to another student's work, all such students will be called in to question for plagiarism and the assignment mark of all offending students will be appropriately penalized. Assignments are due not later than 10 minutes past the hour beginning the lecture due day. Assignments received after this time on the due day will be accepted for grading, but will earn a 50% reduction in their mark. Assignments received after the due day will earn a score of zero. Detailed solutions to assignments will be posted at the website.

Calculators: The following are prohibited during test/exam writing: calculators, I-Pods, BlackBerry, Laptop computers, Cell Phones and any other electronic calculating or data storage device.

Office Hours: I will have office hours in my office on Tuesdays and Thursdays. You may also make an appointment with me to get individual or small group help.