

Course Outline — Fall 2019

Math 580 (Combinatorial Mathematics, Fall 2019)

MWF: 11:00 am - 11:50 am, 143 Altgeld Hall

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Office Hours: F 1:00-1:50pm. Study sessions: Wednesdays 1-3 pm.

Web page: <http://www.math.uiuc.edu/~jobal>.

Syllabus: This is a rigorous, graduate level introduction to combinatorics. It does not assume prior study, but requires mathematical maturity; it moves at a fast pace. The first third of the course is on enumeration. The second third covers graph theory. The remainder of the course considers some topics that are treated more in depth in advanced graduate courses (Math 581, 582, 583, 584): Ramsey theory, partially ordered sets, the probabilistic method and combinatorial designs (as time permits).

Test 1: October 23 (W) 6-8 pm covering Chapters 1–4,

Test 2: December 11 (W) 6-8 pm covering rest of the Chapters,

Final exam: 1:30-4:30 p.m., Thursday, Dec. 19.

Textbook: The FALL 2019 edition of the text COMBINATORIAL MATHEMATICS (by Douglas West) will be available at Illini Union Bookstore (from August 27). Note that earlier edition might have different numbers for homework!

REQUIREMENTS (math 580): Each assignment will have 6 problems, your choice of five will be graded. Homework is usually collected on Fridays. Independently from the score: for an A, on the final test at least 50% is needed, for a B+, at least 40%, for a C- at least 30% is needed. For a grade B^+ or above, one has to perform well on both parts of the class, i.e. to collect at least 40% of points.

There are 9 homework assignments, each worth 4%, two tests, each worth 16% and a final exam for 32%.

The grading: 80%– : A, 75%– : A^- , 70%– : B^+ , 65%– : B, 60%– : B^- , 55%– : C^+ , 50%– : C, 45%– : C^- etc.

Note that the writings of the solutions must have a high quality and typed, if the argument is messy or not typed then even if the solution is correct it could be returned without grading with 0 points.

Late homework policy: In case the homework is not submitted on time, it could be submitted for the next class, with losing 10% of the score. However it might be accepted at most twice during the semester from the same student. If there is official or medical reason then try to notify me in advance via e-mail.

RESOURCES: Electronic mail is a medium for announcements and questions. I will use the e-mail given in the system, I am not responsible in case it is not monitored.

PREREQUISITES: There are no official prerequisites, but students need the mathematical maturity and background for graduate-level mathematics.