

Math 532 – Combinatorial Analysis (Fall 2009)

(Meets: M, W, F 12-12:50 in KAP 159)

Course Goals: To explain basic techniques in enumeration, and their applications.

Course Description:

Some of the topics to be covered include:

1. Basic enumeration (Stirling numbers, properties of permutations, etc.)
2. Sieve methods, inclusion-exclusion and Mobius inversion
3. Recursions and generating functions
4. Symmetric function theory
5. Counting polynomials (Tutte polynomial, etc.)
6. Algebraic graph theory
7. Polya theory
8. Other topics (such as asymptotics via generating functions and approximate counting using Markov chains) as time permits

Textbook:

M. Aigner's "A course in enumeration", 2007 edition

Grading:

There will be approximately 5 homework assignments and 2 exams during the semester each weighted 1/3. Make up exams will be given and late homework accepted only for valid reasons (determined by the instructor). If necessary, discuss any problems as soon as possible with the instructor.

Instructor: Jason Fulman

Office hours: Mon. 3-4, Wed. 2-3 and Fri. 10-11 in KAP 424D

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