SYLLABUS
MAT 646, SPRING 2012

Instructor: Prof. Mark Watkins
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      Office hours: graduate students are welcome (almost) any time that I'm in my office, including my regularly scheduled office hours for undergrads (Weds. 10-11:30 and Thurs. 15:00-16:30).

Prerequisites: (1) A knowledge of linear algebra equivalent to MAT 531 (vector spaces, bases, dimension, orthogonality, etc.); (2) elementary set theory; (3) very basic group theory.

Text: J.H. van Lint & R.M. Wilson, *A Course in Combinatorics, 2nd Edit.,* Cambridge University Press, 2001.

      This thick and comprehensive text will serve for both MAT 645 (Graph Theory) and the present course, as it includes more than enough material for both courses. We will cover many of those chapters of this text that concern enumeration, designs, and various other combinatorial objects.   Matroids are not included in this text, and so supplementary material about matroids will be brought in toward the end of the course as time permits.   Because graphs are such a useful model for many combinatorial notions, we will begin with Chapter 1.   Then we'll move onward to all or parts of the following chapters:

<div align="center">5, 6, 10, 13-20, 22, 30, and 37.</div>

Required work: There will be five problem sets consisting of from 5 to 8 problems each. There will be a two-hour, closed-book Final Exam on Thursday, 3 May, at 12:45 which will comprise 25% of the course grade.

      The problem sets should be written up carefully, with notation that is well chosen and consistent. The style should be that of a mathematical text or research paper and appropriate to the mathematical maturity of a graduate student in Mathematics or a related field. A good criterion for clarity of style is, "Could a fellow graduate student at my level follow my arguments completely but without being talked down to?"   The write-ups should be proofread before being submitted.

      The problems will be assigned as we encounter the relevant material in lecture. The last problem of each set will be assigned at least one week before the due date for that set.   The problems will not necessarily be of equal weight in terms of computing their grade. Although you are permitted to discuss these problems with each other, whatever you hand in must be entirely in your own words. You are welcome to include material that you find (on your own) in a book or journal, in which case the correct citation should be given.

The University with overarching good intentions requires that the following formulaic wording be inserted in all syllabi:

Students with Disabilities: If you believe that you need accommodations for a disability, please contact the Office of Disability Services (ODS), located in Room 309 of 804 University Ave. http://disabilityservices.syr.edu or call (315) 443-4498 for an appointment to discuss your needs and the process for requesting accommodations. ODS is responsible for coordinating disability-related accommodations and will issue students with documented disabilities Accommodation Authorization Letters, as appropriate. Since accommodations may require early planning and generally are not provided retroactively, please contact ODS as soon as possible. You are also welcome to contact me privately to discuss your academic needs although I cannot arrange for disability-related accommodations. Making arrangements with ODS takes time. Do not wait until just before the first test.

Academic Integrity: The Syracuse University Academic Integrity Policy holds students accountable for the integrity of the work they submit. Students should be familiar with the Policy and know that it is their responsibility to learn about instructor and general academic expectations with regard to proper citation of sources in written work. The policy also governs the integrity of work submitted in exams and assignments as well as the veracity of signatures on attendance sheets and other verifications of participation in class activities. Serious sanctions can result from academic dishonesty of any sort. For more information and the complete policy, see   http://academic integrity.syr.edu

In this course there will be zero tolerance for academic dishonesty, and *all* violations will result in failure in the course and will be reported to the Student Standards Committee of the College of Arts and Sciences. If you and a fellow student have worked together and are uncertain about how to present your common solution, please feel free to come speak with me about it.