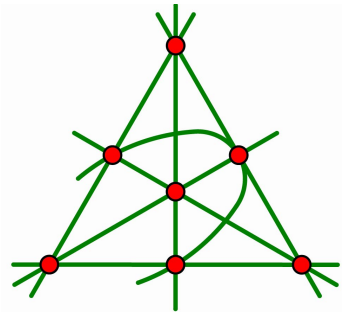
SYLLABUS
MAT 646, SPRING, 2014



The Class Meetings.

2:00 - 3:20pm Tue., Thur.
119 Carnegie

The Instructor.

Prof. Jack Graver
229E in the Physics Building
Ext: 3-1576
jegraver@syr.edu
Office Hours: 9:30 - 11:30am Wed. and Fri.
2:00 - 3:30pm Wed.
[However, students should feel free to drop in any time.]

The Text. *Applied Combinatorics, 6^{th} Ed.* by Alan Tucker, Wiley. This text has a good expositions of the basic definitions and results of enumeration theory and a very good collection of problems. It will be supplemented with detailed lecture notes. The book *Combinatorics with an Emphasis on the Theory of Graphs* by J. E. Graver & M. E. Watkins, Springer-Verlag will be on reserve in the mathematics library.

The Course.

The course is divided into three units: *Enumeration, Design Theory and Matroid Theory.* Problems will be assigned regularly. Students may collaborate with one another on these regularly assigned problems as long as they list their collaborators. At the end of each unit, there will be a test with an in-class part and a take-home part. An optional comprehensive final may be taken by students wishing to improve their final grade.

Learning Outcomes

Students successfully completing this course will have mastered the basic techniques of enumeration theory. They will have an understanding of the fundamentals of design theory. Finally, they will have an appreciation of the history and spectacular growth of matroid theory and a mastery of its fundamentals.