

# SYLLABUS

## MAT 646 Combinatorics Spring, 2018

### The Class Meetings.

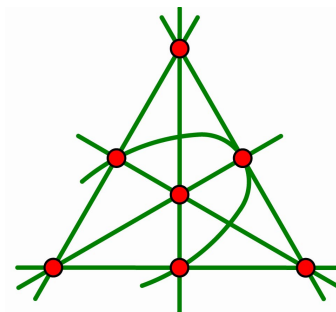
2:00 - 3:20pm Tue., Thur.  
100 Carnegie

### The Instructor.

Prof. Jack Graver  
300C Carnegie  
Ext: 3-1576  
jegraver@syr.edu

Office Hours: 9:30-11:00am and 2:00-3:30pm Wednesdays.

[However, feel free to drop in any time.]



**The Text.** *Applied Combinatorics, 6<sup>th</sup> Ed.* by Alan Tucker, Wiley. This text has a good exposition 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. 40% of the course will be devoted to enumeration and 30% to each of design and matroid theory. 60% of the final grade will be based on the assigned problems and 40% on the tests. This leads to the following grading matrix:

	<i>Enumeration</i>	<i>Designs</i>	<i>Matroids</i>
<i>Problems</i>	24%	18%	18%
<i>Tests</i>	16%	12%	12%

An optional comprehensive final may be taken by students wishing to improve their final grade.

### **Expected 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.

## **University Required Inclusions**

**Students with Disabilities:** If you believe that you need academic adjustments (accommodations) for a disability, please contact the Office of Disability Services (ODS), located in Room 309 of 804 University Avenue, visit the ODS website (<http://disabilityservices.syr.edu>) or call (315) 443-4498 or TDD: (315) 443-1371 for an appointment to discuss your needs and the process for requesting academic adjustments. ODS is responsible for coordinating disability-related academic adjustments and will issue students with documented Disabilities Accommodation Authorization Letters, as appropriate. Since academic adjustments may require early planning and generally are not provided retroactively, please contact ODS as soon as possible.

**Religious observances policy.:** SU religious observances policy recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holidays according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to are religious observance provided they notify their instructors before the end of the second week of classes. For fall and spring semesters, an online notification process is available through MySlice

(Student Services – >Enrollment – >My Religious Observances)  
from the first day of class until the end of the second week of class.

**Academic Integrity:** Syracuse University's Academic Integrity Policy reflects the high value that we, as a university community, place on honesty in academic work. The policy defines our expectations for academic honesty and holds students accountable for the integrity of all work they submit. Students should understand that it is their responsibility to learn about course-specific expectations, as well as about university-wide academic integrity expectations. The policy governs appropriate citation and use of sources, the integrity of work submitted in exams and assignments, and the veracity of signatures on attendance sheets and other verification of participation in class activities. The policy also prohibits students from submitting the same work in more than one class without receiving written authorization in advance from both instructors. Under the policy, students found in violation are subject to grade sanctions determined by the course instructor and non-grade sanctions determined by the School or College where the course is offered as described in the Violation and Sanction Classification Rubric. SU students are required to read an online summary of the University's academic integrity expectations and provide an electronic signature agreeing to abide by them twice a year during pre-term check-in on MySlice. The Violation and Sanction Classification Rubric establishes recommended guidelines for the determination of grade penalties by faculty and instructors, while also giving them discretion to select the grade penalty they believe most suitable, including course failure, regardless of violation level. Any established violation in this course may result in course failure regardless of violation level. For more information and the complete policy, see <http://class.syr.edu/academic-integrity/>