

## MATH 431-200/500. Structures and Methods of Combinatorics

Fall 2019, MWF 11:30 – 12:20 p.m. BLOC 117

<http://www.math.tamu.edu/~cyan/Teaching/math431.html>

**PROFESSOR:** Dr. Catherine Yan

**OFFICE:** BLOCKER 513F

**E-MAIL:** cyan@math.tamu.edu

**OFFICE HOURS:** Primary: Friday 1:40–2:40pm; Secondary: Wednesday 1:40–2:40pm

**BOOK:** Richard A. Brualdi, *Introductory Combinatorics*, fifth edition, Prentice Hall 2010.

**COURSE DESCRIPTION:** This is an introduction to combinatorics for upper division mathematics majors. Topics include: enumerative techniques (including generating functions and bijections), recurrence relations, combinatorial objects (including graph theory and partially ordered sets), and basic Ramsey theory. Time permitting, we will also see some graph algorithms, networks, and matching theory.

### HOMEWORK:

There will be weekly homework assignments. Doing the homework is essential to understanding the material and to doing well on the tests so please take the time to read the appropriate sections and to do all of the problems each week.

For Section 200 (Honor), in addition to the weekly homework, there will be four extra problem sets and some recommended reading materials.

Late homework is not fair to you as a student who is trying to keep up with the class, to your classmates, or to the grader; hence you should turn your assignments in on time. If you will not be in class on the due date, you should arrange to turn in the homework early. Late homework will not be accepted.

You can collaborate on the homework. But you must submit your own write-up.

### TEST:

There will be three tests during the semester. The tentative schedule is:

1. First Test: **Monday September 23**, 2019. Closed-book take-home test
2. Second test: **Monday, October 28**, 2019, in class.
3. Third test: in the final exam period assigned by the university.

**Section 200/500: Dec. 11, Wednesday, 10:30–12:30, BLOC 117**

I reserve the right to change the dates or the particular selection of topics from the syllabus based on the needs of the class. I will give you at least a week's notice before each test.

If you have three or more exams on the day of the last exam (December 10th), you must let me know at least two weeks in advance so suitable rescheduling arrangements may be made.

### GETTING HELP:

You are encouraged to ask questions both in class and outside of it, although I will not give solutions about homework to be collected during that class. (I may provide some hints

to those problems.) I am available to answer questions in office hours and by appointment. You may also contact me via e-mail with your questions and I will respond as soon as possible.

**GRADING:**

Your term grade will be determined by your performance on the homework and tests as follows:

Section	Homework	Test 1	Test 2	Test 3	Extra
431-500	25%	25%	25%	25%	
431-200	20%	20%	20%	20%	20%

The standard cutoffs for letter grades will be used: A 90 pts, B 80 pts, C 70 pts, D 60 pts. Any request for re-grading of a test must be done within one week of the day on which it was returned to you. You can not make any change on the problems that need to be re-graded. Any inquire of not-returned homework or test must be done within one week of the day on which the homework set is handed back to the class.

**Policy for Absences:**

Attendance on a regular basis is expected. While there are occasionally good reasons for you to choose to miss class, my experience has been that there is a strong correlation between attendance (as long as you are awake and listening) and performance in the course. For absence related to injure or illness, students who are absent from class three or more days should provide instructors with confirmation from a medical provider for an excused absence.

**MAKE-UPS and LATE HOMEWORK:**

If homework must be late (University approved excuses only) or if you must miss a test, please notify me as soon as possible, preferably before the test is given or the homework is due. In any case, you must notify me by the end of next working day, or forfeit your right to a make-up.

**Scholastic Dishonesty:**

Cheating of any form is not acceptable and it will be dealt with harshly. In particular, copying work done by others, either in-class or out of class, is an act of scholastic dishonesty and it will be prosecuted to the full extent allowed by university policy. Collaboration on assignments is permitted for this course, however each student must write up their own solutions. For more information on university policies regarding scholastic dishonesty, see the University Student Rules.

**Copyrights:**

All printed handouts and web materials are protected by US Copyright Laws. No multiple copies can be made without written permission from the instructor.

**Title IX and Statement on Limits to Confidentiality:**

Texas A&M University and the College of Science are committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws provide guidance for achieving such an environment. Although class materials are

generally considered confidential pursuant to student record policies and laws, University employees including instructors cannot maintain confidentiality when it conflicts with their responsibility to report certain issues that jeopardize the health and safety of our community. As the instructor, I must report (per Texas A&M System Regulation 08.01.01) the following information to other University offices if you share it with me, even if you do not want the disclosed information to be shared:

- Allegations of sexual assault, sexual discrimination, or sexual harassment when they involve TAMU students, faculty, or staff, or third parties visiting campus.

These reports may trigger contact from a campus official who will want to talk with you about the incident that you have shared. In many cases, it will be your decision whether or not you wish to speak with that individual. If you would like to talk about these events in a more confidential setting, you are encouraged to make an appointment with the Student Counseling Service (<https://scs.tamu.edu/>).

Students and faculty can report non-emergency behavior that causes them to be concerned at <http://tellsomebody.tamu.edu>.