Syllabus for Math 301-002, Fall 2019

Instructor: Dr. Harrison Chapman

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Office: Weber 212

Office hours: TBD

Meeting times: MWF 3pm–3:50pm in Wagar 132

Course Webpage: https://hchapman.org/301

Text: Discrete Mathematics: Elementary and Beyond[1] available as a free PDF download from on-campus computers and through CSU's library page. (See also the list of typos, here[2])

Course Overview

This course is an introduction to *combinatorics*, "the mathematics of counting." Some of the topics we will cover include: Combinations, permutations, sets, induction, inclusion and exclusion, the pigeonhole principle, binomial coefficients, recurrence, prime numbers, graph theory, and trees.

Homework

Assignments will be posted to the course webpage and Canvas. Homework will be collected roughly weekly.

Some problems will be graded for completeness; serious attempts will receive full credit. The remainder will be graded for correctness out of 5 points; 1 point for clarity of exposition (writing and organization), and 4 points for content:

- **4 points:** A completely correct solution
- **3 points:** A solution showing good understanding of the problem, but with minor omissions or mistakes
- **2 points:** A solution using a reasonable strategy, but which is incorrect due to a significant error
- **1 point:** An attempted solution with parts of good ideas
- **0 points:** No serious attempt at a solution

A good way to think about clarity of exposition is with the following question: "Could another student in this class understand my solution?" You are joining a community of scientists for which *communication* is a critical skill.

Homework must be turned in **stapled** with **your name at the top**. Homework should be neat and organized—I can't grade what I can't parse! Now might be a good time to start learning LaTeX (the industry standard!) to typeset your homework, but it is by no means required (If you're interested, you might want to check out Overleaf[3]).

I can't accept late homework (the class moves too quickly), so make sure to turn in whatever you have on the due date to maximize credit.

You are **strongly encouraged to work in solving homework problems with your classmates**, but the work you turn in **must be your own**, and in particular you must write up your final solutions independently.

[1] https://link.springer.com/10.1007/b97469
[2] https://www.math.colostate.edu/adams/teaching/TyposMath301.pdf
[3] https://www.overleaf.com/

Exams

We will have two midterm exams and a final. The midterms are both 50 minute in-class exams and are tentatively scheduled for **October 4** and **November 8**. The final exam will be in our regular classroom from **7:30am–9:30am** on **Wednesday, December 18**.

Make-up exams will be given only under extraordinary circumstances that are appropriately documented (e.g. by a medical or legal professional). Please let me know as soon as possible if a university-sanctioned event will cause a conflict with one of the exam dates.

Grading

Your final grade for this class will be determined by,

- **Homework and Class Participation:** 30%
- **Midterms:** 20% each
- **Final:** 30%

This breakdown determines a score for you on a 0–100% scale. At the end of the semester, everyone's grades are sorted and I assign cutoffs for 'A', 'B', 'C', 'D,' that are typically lower than the standard 90, 80, 70, 60.

Point scores are recorded in Canvas. Please do make sure that these are correct; I am happy to make corrections as necessary.

Ultimately, I can only grade the course based on what you have actually demonstrated in written work.

Attendance

You are expected to attend and participate in every class, read the assigned material before each class, and to do the weekly homework.

Academic Integrity

As a Colorado State University student, you have agreed to abide by the University Policy on Academic Integrity (see University Policies → Students' Responsibilities → Academic Integrity/Misconduct in the General Catalog[4]) and by the Student Conduct Code. Please see https://tilt.colostate.edu/integrity/ for more on academic integrity at CSU. All academic work must meet the standards described in the Academic Integrity Policy. At a minimum, violations will result in a grading penalty in this course and a report to the Office of Conflict Resolution and Student Conduct Services.

Lack of knowledge of the academic honesty policy is not a viable explanation for a violation. Questions related to coursework and the academic honesty policy should be discussed with the instructor.

You are encouraged to *discuss* homework problems with your classmates, but the work you turn in **must be your own**, and in particular you should write up your final solutions independently. Remember that for all work in this course, the CSU honor pledge applies: "I have not given, received, or used any unauthorized assistance."

Additional Help

If you ever find yourself confused in this class, that's okay! There are a number of different resources that I encourage you to explore:

- I am happy to discuss anything during office hours.

[4] http://catalog.colostate.edu/general-catalog/

- Your fellow classmates are a great resource. You are encouraged not just to work together on homework but also to ask each other general questions and study together.
- There are lists of tutors maintained at the math department website[5] and the Colorado State University tutoring webpage[6].

Accommodations

If you think you may need accommodations in this course due to the impact of a disability please meet with me privately during the first week of class. You should also contact the Student Disability Center[7] to confirm your eligibility for appropriate accommodations. Doing so early in the semester will help prevent unnecessary inconvenience.

Disclaimer

The course syllabus is a general plan for the course; deviations announced in class may be necessary.

[5] http://www.math.colostate.edu/courses/Tutoring/tutoring.shtml
[6] http://tutoring.colostate.edu/
[7] https://disabilitycenter.colostate.edu