

[Get 75% of students to turn on cameras]

James Propp

Office: None!

Email: JamesPropp *-at-* gmail *-dot-* com (**not** my UML address!)

Course web-page: <http://jamespropp.org/2190>

Classroom: ZoomSpace

Meeting time: Tue & Thu, 12:30-1:45

“How are you all doing?” (5 minutes)

Welcome to Discrete Structures I!

Discrete mathematics is the area in which I do most of my research and it's one of my favorite topics.

There are a lot of things you need to know about how I run the course.

GRADING SCHEME

Four components: homework (30%), midterm exam (30%), final exam (30%), and participation (10%).

Note: All exams are **in-person**.

Drop-in hours: Tuesdays and Thursdays, 11:30-12:15 and 3:15-4:00 (on Zoom). Available at other times by appointment. Links for joining class meetings and office hours are available at the Blackboard portal for the course.

I also read my gmail-account email several times daily, and can often answer your questions by email.

Please instruct your spam filter to accept emails from my gmail account (see previous page for my email address).

Visit <https://piazza.com/uml/spring2021/math2190sec204> .

You get class participation credit for asking or answering questions there.

TUTORING

If you're looking for help with the homework from someone other than myself or your classmates, I recommend Phoebe Watkins who tutors for the math department (Southwick 319) and David Hamel-Selman who tutors for the Centers for Learning:

<https://www.uml.edu/class/tutoring/tutor-schedule/>

CLASS MEETINGS

Students are expected to have their cameras on. Make sure your screen name is the same as the name you're registered under.

I won't start class until at least 75% of you have your cameras on. But ideally you should ALL turn your cameras on!

(Loaner cameras are available from the University; loaner laptops too. See the syllabus.)

There are other ways to get attendance points, for instance by posting questions, answers, or comments in the chat; and there are other kinds of class-participation points, such as coming to my drop-in hours, or participating in discussions on Piazza, that don't require you to be present in class. But the easiest way to get class-participation points (collectively worth 10% of your grade) is just by showing up and participating.

My current plan for breakout rooms is to have each group collaborate on a Google Drive document that they will

submit at the end of the class. (Groups will be re-randomized in each meeting.) But the plan may change if technicalities intervene. Jamboard is another possibility I am considering. (Discuss!)

HOMEWORK

Due on Saturday most weeks.

Homework will be submitted via Blackboard. Please log in to Blackboard to make sure you can. Academic Services will issue a Student Nonparticipation Report during the Add/Drop period to identify students who have not logged into Blackboard. The team will then reach out to these students to check-in and see if they need assistance.

Make sure that your homework was successfully uploaded, especially when you're submitting by phone, to make sure you'll get credit for having turned it in before the deadline. Note that "SAVE" is not the same as "SUBMIT"! Also make sure your homework is legible. In general photos are less legible than scans. Suggestions for good scanning software?

The homework is where most of the learning happens.

I encourage you to work with others!

Whether you're getting help from classmates, or from a tutor, or from me, or from the solutions in the book, or from a resource on the web, the same principle applies: Write up your solution based on your understanding, not from taking notes from conversations. Collaboration is encouraged, but try the problems on your own first, and only take what fits in your brain (i.e., don't create notes in your meetings with classmates and then consult those notes when writing up your solutions). What you hand in must be your OWN WORDS.

You must say whom you worked with. This won't affect your grade in any way, but I'll use this to help you optimize the amount of help you're getting from others (maybe too much, maybe too little). If you worked alone, say so.

I take academic honesty very seriously. If you're unsure about what the rules are, check out <https://www.uml.edu/Catalog/Undergraduate/Policies/Academic-Policies/Academic-Integrity.aspx>

Sometimes I assign odd-numbered problems from the text (or slight variants). You are expected to try to do these on your own before looking at the solution. If you do look at the solution, you must recreate it independently and in your own words, AND you must state on your assignment that

you made use of Doerr and Levasseur's solution. (To omit this statement will be treated as an act of plagiarism.) Note that Doerr and Levasseur's solutions are sometimes wrong.

“Oh, but I didn't know that the person who helped me was getting solutions from Chegg!” or “... from Doerr and Levasseur!” is not an acceptable excuse.

Note that there are mistakes in some of D&L's solutions.

It is forbidden to post homework questions online. Posting assigned questions to a website that permits plagiarism counts as a violation of academic integrity and could result in failing the course or expulsion from the university. “My friend used my account” is not an acceptable excuse.

Please make sure that the problem sets that you hand in have the problems in the exact same order that they appear in the assignment. If the only way you can easily do this is by submitting each problem on a separate sheet of paper, that's okay! Violations may result in a 5-point fine.

(One past grader wrote: “One concern I have is that a few of the students have apparently taken up the habit of doing the homework problems wildly out of order, reflected on the submitted homework. This creates a great deal of extra work tracking down problems and parts of problems when grading. When I have to spend an additional 20-30 minutes on someone’s homework because they spread out a problem over several pages and do the problems completely out of order it’s hard not to feel frustrated.”)

For some of you, this will be your first serious exposure to reading and writing proofs. It’s not enough to get the right answer; you have to explain how you got it. A good concise introduction to writing mathematical prose is Francis Su’s [“Some Guidelines for Good Mathematical Writing”](#).

If you feel that your answer doesn’t make intuitive sense, please say so, and say why! If your answer is wrong, but you give an intelligent critique of it, you might at least get some partial credit for showing good intuition.

This is all the more true for exams.

Before you start a homework assignment, always look over the lecture notes for the relevant lectures as well as the relevant sections of the textbook.

Policy on late homework: I'm going to be strict about deadlines. **If you hand in a paper late, and for whatever reason it doesn't get to me in time, you'll get a 0% for the assignment.** I'll only make exceptions for unusual circumstances. (If you've got such a circumstance, please tell me ahead of time if you can.)

The lowest homework grade is dropped. So you get a free excuse from doing an assignment.

Homework is 30% of your final grade, so it pays to do all of it.

The first assignment is due soon. The password for unlocking the file is the extraneous non-mathematical word in the syllabus. For each subsequent assignment, the password for unlocking the file is the extraneous non-mathematical word in the solution to the previous assignment.

For full credit on a homework problem, a solution may only cite theorems that appear in the relevant section of the textbook (or earlier sections) or in my lectures on those sections. But if you want to solve the problem in more than one way (as a way of checking that you haven't made a mistake), feel free to use the methods of any section, or methods you've learned outside of class.

EXAMS

1st exam: **Oct. 14** (12:30-1:45, **in person; location TBD**)

(Any problem with that date?)

Final exam: During Exam Period (**in person; location, date and time TBD**)

If you require an accommodation, please let me know during the first two weeks.

I am not required to grant an accommodation if your request comes less than a week before the exam date.

All exams will be **closed book** exams.

You may bring and use up to five two-sided sheets of notes, which will be collected along with your exams.

The use of calculators in exams is prohibited.

MORE ABOUT CLASS MEETINGS

There'll be a lot of group work in breakout rooms. It's a great way to develop communication skills *and* math skills. Each group will collaborate on a document that will then be submitted and reviewed by me.

I expect you to try to do the reading assignments (and/or the video viewing assignment) before the class in which the section will be discussed. This will help you follow what's going on in class, since you'll be less busy scribbling everything down; you'll be able to get the big picture and participate in discussions. You're not expected to understand everything in the reading, but you're expected to have tried to understand.

If I ask you to name some key concepts and to define them, you're expected to be able to do that (looking at your textbook or at the section summaries is fine).

There are lots of ways to participate: answering a question (correctly or not) in a way that propels the discussion forward; asking a good question; giving a synthesis or a recapitulation. (Or, occasionally, being a communication

ally: “I think Janice was trying to say something” or “I think you’re misinterpreting what Sam said”).

Feel free to interrupt with questions. But you should also respect my decision if I feel the need to rein in the discussion (say, so that we can cover everything you’ll need to know in order to do the homework).

There’s no such thing as a dumb question. To ask a question is to show that you’ve recognized a difference between your understanding and other people’s; that’s an act of metacognition that deserves respect.

Don’t ridicule other students’ questions or laugh at their mistakes. (Even if they’re okay with it, I’m not.)

I will be recording this class for pedagogical purposes so students can have access to materials previously presented. If you have concerns about this, please reach out to me privately.

CLASS PARTICIPATION CREDIT

There are six ways to get class participation credit
(collectively worth 10 percentage points for your grade):

- speaking or posting to the chat (up to 4 points)
- being active in the breakout rooms (up to 4 points)
- participating in Piazza discussions (up to 4 points)
- finding mistakes in the textbook (up to 4 points)
- writing section summaries (up to 4 points)
- coming to drop-in hours (up to 4 points)

Participation in Piazza can be aided by a knowledge of LaTeX; see the syllabus for helpful links for those who are new to LaTeX.

This part of the grading rubric may change if I end up finding about other ways to run a virtual class, e.g., Blackboard Collaborate or Perusall (discuss!).

ASSIGNED READING AND SECTION SUMMARIES

Next reading assignment: Read Sections 1.1-1.3 for next time. Think about Exercises 1.1.5, 1.2.3, 1.2.4, and 1.3.3, since they will be among the problems we'll discuss in class next time.

(NOTE: The exercises for each section form an extra subsection at the end of the section. Thus the exercises for Section 1.1 are in subsection 1.1.3, while the exercises for Section 1.2 are in subsection 1.2.4 and the exercises for Section 1.3 are in subsection 1.3.4. You're supposed to think about Exercises 5 from Section 1.1, Exercises 3 and 4 from Section 1.2, and Exercise 3 from section 1.3.)

You don't need to solve them, but you should make sure that you understand what's being asked and that you have an idea for how to proceed. Also bring any questions you may have that haven't been answered on Piazza.

See <http://jamespropp.org/2190/reading.pdf> for other reading assignments.

When you prepare for class, you may fill up (both sides of) one sheet of paper with notes from each assigned section

for that day. Scan and upload it to Blackboard before class and you will get credit for it.

So for instance between now and the start of our next class meeting you can write up summaries of sections 1.1, 1.2, and 1.3 and upload them for class participation credit.

Section summaries must be hand-written or typed; they cannot be photocopied or printed out from the internet. They are due on the same day as the reading, by the start of class, and are expected to be serious attempts to summarize the main ideas of the day's reading assignment. The wording may be copied from the book; you don't need to acknowledge sources. The section number(s) must be clearly marked.

WEB SITE

Check out the website before the weekend; there's some information there that isn't in these notes.

If there are ever problems with the website, please let me know as soon as possible!

For instance, make sure you can read the on-line version of these notes.

OTHER

Help me find mistakes in the book for class participation credit.

If you have suggestions about the way the course is run (my lectures, the book, anything), let me know. Please don't wait until it's too late for me to change what I'm doing. If you feel reluctant to contact me, contact Prof. Ravi Montenegro, the department chair.

Regarding my teaching style: I may sometimes be disingenuous, or make deliberate mistakes, so you have to stay alert. But my shenanigans are always meant to be instructive, and I'll always 'fess up in the end.

I love to pit one section of the class against another; I'll look for opportunities to do that too. Your main goal should not be being right; your main goal should be learning how to think about things and express your ideas.

TAKING THE LONG VIEW

A good practice is to keep a log of contributions you make to the class. That way, if you ask me for a letter of recommendation a year or two from now, when neither of us has a very clear memory of what you contributed, there'll be some sort of record that you can forward to me, and that I can cite in my letter. Schools and employers are less impressed by generic praise than by citations of specific competencies and accomplishments.

Also, if there's anything about the course that you decide years from now was really good, or not so good, please let me know!

WHO ARE YOU?

Say your name. Tell us something about yourself. Then I'll repeat your name.

If you're not enrolled in the course or on the registrar's waiting list but you want to take the course, please email me your contact info, so I can add you to my contacts list.

[Take attendance in alphabetical order; make note of who's missing; get email addresses of all students who aren't yet registered.]

AND NOW SOME MATH ...

Pretend you're a mathematical archeologist, and you've just dug up an artifact that looks like this:

<http://jamespropp.org/2190/disc.pdf>

What properties does it have? What might you infer about its function?