This syllabus is preliminary, and may be subject to change.

Instructor: Nathan Pflueger (pronounced "fleeger")
email: npflueger@amherst.edu
office: SMUD 401

office hours: (tentative)

Tuesday	12:30-1:50	
Wednesday	10:30-12:00	
Friday	9:30-10:30	
(or by appointment)		

Math Fellows:	Andressa Silva	**help hours:** TBA
	Noah Solomon	**help hours:** TBA
	Mythili Subbanna	**help hours:** TBA

Times and locations:	Mon, Wed, Fri	1:30-2:20	SMUD 204
	Tue	2:00-2:50	SMUD 205

What are office hours for? You can come to scheduled office hours for any reason whatsoever. You can bring any questions you have, including vague questions about the big picture. You can also come with no questions; there is a desk in my office and several just outside where you are welcome to work, meet your classmates, or listen to other conversations. Office hours are the best way I have to learn about you and how you're doing in the course and the college, so please visit!

Course webpage: `http://npflueger.github.io/271/`
Most important course information will be kept at the publicly viewable webpage above, rather than on Moodle. I will use Moodle to keep non-public information, Zoom links, and the like.

Textbook: *A Course in Linear Algebra*, by D. Damiano and J. Little, Dover Publications.

Goals and topics: The course introduces and examines the notion of a **vector space**, which is a simple model for geometry in any number of dimensions. A secondary objective is to develop and practice **mathematical writing**, especially the vocabulary, techniques, and mechanics of writing proofs. Specific topics will include:

1. Vector spaces, especially $\mathbb{R}^n$.
2. Linear transformations, and their doppelgänger: matrices.
3. Determinants.
4. Eigenvalues and eigenvectors.
5. A bit about complex numbers.

Expectations: You are expected to attend class every day, arrive on time, and be respectful. You are expected to know about any announcement I make in class. You should expect to spend at least eight hours studying and working on problem sets outside of class each week. Of that time, I recommend that you spend at least two hours reviewing your notes, the textbook, and previous assignments. Distributing your practice and review throughout the semester will be much more effective than concentrating your review and studying right before exams or due dates.

Students are expected to **read the textbook carefully**. Some material will be introduced via reading the book, rather than during class. Learning from a mathematical text is an important skill in more advanced courses that I hope you will develop in this course; please ask me if you want tips or are unsure how to make good use of the text.

Prerequisites: Math 121 (single-variable calculus) or consent of the instructor. This course and Math 272 may not both be taken for credit.

Structure and grading: There will be weekly homework assignments and three midterm exams. There will not be a final exam; the last midterm will be on the last day of class. The dates of all exams, and their share of your final grade, are listed below. There is no set curve or grading cutoffs, but most likely the median grade will be around a B.

Homework	30%	
Midterm 1	18%	Wednesday 3/9 in class
Midterm 2	18%	Wednesday 4/13 in class
Midterm 3	18%	Friday 5/13 in class
Your best exam	16%	(added to its original weight)

Exam dates: The midterm dates are listed above. **Put them on your calendar now**.

Homework: Homework will be **due at 10pm**, typically on Wednesdays, via Gradescope. To allow for technical difficulties or other last-minute issues, Gradescope will allow you to submit homework after the deadline, however your score will be reduced by 2% per hour after the deadline (scaled continuously, e.g. being fifteen minutes late results in a 0.5% deduction). Please try to turn in your work by 10pm (I don't want to be responsible for lost sleep!), but don't worry about short delays.

I generally do not grant extensions. However, to compensate for illness and other emergencies, your **lowest two homework scores will be dropped**. If you cannot make a due date due to an emergency, my advice is to skip the assignment, but study and understand the problems when you have time, and focus on keeping up with the new material in the course. You do not need to apologize or provide any reasons for skipping an assignment or turning it in unfinished; please choose what is best for your time, health, and well-being.

Missed exams: If you are ill or an emergency arises near an exam, notify me as soon as possible. Any medical emergencies must be confirmed by your class dean. If you have a time conflict with an exam, notify me as soon as possible, and **at least one week in advance** (exam dates are listed above).

Accommodations: I strive to make this course welcoming to all students. If you would like to discuss your learning needs with me, please schedule a meeting so that we can work together to support your academic success. Anyone who may require an accommodation based on the impact of a disability should contact me to make arrangements. I rely on Accessibility Services for assistance in verifying the need for accommodations and developing accommodation strategies, so you should contact them at `accessibility@amherst.edu` or 413-542-2337. If you require accommodations on exams, please arrange this with me at least one week in advance.

Intellectual responsibility:

- **Homework:** Mathematics is a collaborative subject; open and generous communication is one of its core values. Therefore you are strongly encouraged to work with other students, ask many questions, and learn from as many people as possible. However, you must write up the solution yourself. **All your submitted work must be your work, written in your own words**. Copying solutions from other students, solutions manuals, or online databases

is plagiarism; such copying will result in a 0 on the assignment and will be reported to Community Standards. You are also expected to **list each person your worked with** on the front of your homework assignment.

- **Exams:** You will be allowed **one page of notes (front and back)** for each exam. No calculators or other aids are permitted. Cell phones should be stowed out of sight during exams. Use of cell phones or other devices during the exams will be grounds to receive a 0 on the exam. You are bound by the college's honor code, and all work must be entirely your own on exams.

For homework and exams, I reserve the right to give no credit for any work that appears suspicious.

Tips:

- **Come to office hours!** I am happy to answer your questions and also talk about the course in general. Even if you don't have specific questions, you can come to review material, listen to other students' questions, or just to chat.
- Focus on **practice and improvement**. Every homework problem, or example and class or the book is an opportunity to practice. Take these opportunities, and make the most of them!
- **Distribute your practice.** Study a little bit every day, not just before exams.
- **Actively seek opportunities to practice.** Ask me questions, ask classmates questions, read examples in the book, and try problems that haven't been assigned.
- **Frustration is normal.** Learning is a long process, and you will struggle often. As a professional mathematician who proves theorems for a living, I can tell you: at least 95% percent of doing math is trying things that don't work, and feeling frustration. The reward is worth it! **You are welcome to talk to me about whatever difficulty you're facing.** I want all of my students to be successful and take satisfaction from their mathematical work.

Resources and additional help: Be sure to take advantage of office hours, and your peers, to answer questions and think through the material. The staff at the **Moss Quantitative Center** in the Science Center will host regular help hours, and are available for individual appointments. We also have a Math Fellow for the course, who will hold regular office hours, host exam review sessions, and be available to help with LaTeX. The schedule of these help hours will be posted on the course website once they are set. Finally, some students may benefit from a peer tutor, if they are already using the available help hours and require additional support. Peer tutoring is a limited resource, so please speak with me about it before requesting tutoring.

email policy: The best way to reach me with course questions (besides office hours) is by email. I generally reply to email within 24 hours. However, **I often do not reply to email on weekends**. I will also reply less quickly on Thursdays, which is the day I devote primarily to research.