

**Instructor:** Nathan Pflueger (pronounced “fleeger”) **office hours:** Tuesday 2:00-3:30  
 email: npflueger@amherst.edu (tentative) Wednesday 2:30-4:00  
 office: SMUD 510 Friday 1:30-2:30  
 (or by appointment)

**Course webpage:** <http://npflueger.people.amherst.edu/272/>

**Times and locations:** MWF 11:00-11:50 SMUD 207  
 Tuesday 9:00-9:50 SMUD 207 **OR** SMUD 014 (announced each week)

Our Tuesday room will change week to week. I will announce the room in advance.

**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.

**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.

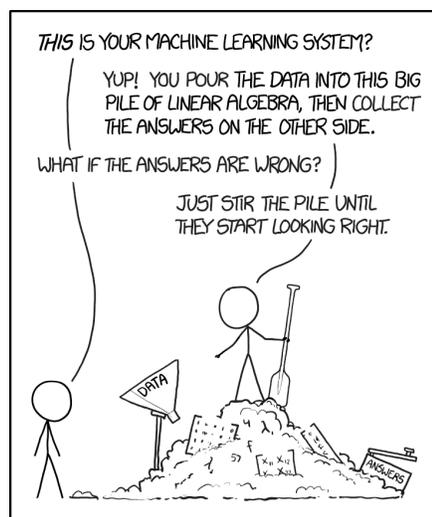
**Goals and topics:** Linear algebra is a ubiquitous subject in pure and applied mathematics. At its core, it is the manipulation of vectors and matrices; the true miracle of linear algebra is just how many things can be viewed as vectors and matrices. Topics will include systems of linear equations, dimension and change of basis, vector spaces and linear transformations, eigenvalues and eigenvectors, and inner product spaces. We will illustrate these topics with various applications, such as to computer graphics, data compression, and least squares approximations.

**Textbook:** *An Introduction to Linear Algebra with Applications*, by DeFranza and Gagliardi (any edition). We will cover most of chapters 1 through 4, and parts of chapters 5 and 6.

**Prerequisites:** First-year calculus (e.g. up to Math 121), or consent of the instructor.

**Structure of the course:** There will be weekly homework assignments (due Wednesday nights), two midterm exams, and a cumulative final exam. The dates of all exams, and their share of your final grade, are listed below. Roughly every other week, we will have lab sessions using Mathematica; lab work counts towards that week’s homework score. There is no set curve or grading cutoffs, but most likely the median grade will be around a B.

Homework	10%	
Midterm 1	20%	Tuesday 2/27
Midterm 2	20%	Tuesday 4/10
Final exam	35%	Date/time TBA
Your best exam	15%	(added to its original weight)



**Mathematica labs:** Approximately once every two weeks, the class will be devoted to a lab using a program called Mathematica (we will meet in SMUD 014 these weeks). Mathematica labs will be completed in groups, and will count towards your homework grade for that week.

**Proofs and applications:** Although this course emphasizes more applications than Math 271 does, it also serves as a prerequisite for courses assuming background in proofs. Therefore **students will be expected to write proofs on exams**, and we will spend some time studying proofs in class. However, **the increased emphasis on applications means that the time spent working on proofs in class will be comparatively brief**. Students who need more help developing proof-writing skills may want to consider Math 271, or should plan to spend time working on proofs outside of class and at office hours.

**Missed assignments:** 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, you should simply skip the assignment, study and understand the posted solutions to catch up, and focus on keeping up with the new material in the course. Therefore **late work will not be accepted for any reason**. I find that this is much better for students, as it prevents them from falling further behind.

**Missed exams:** if you are ill or an emergency arises near an exam, notify me as soon as possible. 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 I encourage you to contact them at [accessibility@amherst.edu](mailto:accessibility@amherst.edu) or 413-542-2337.

### **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**, with the exception of Mathematica labs, which are written in small groups. 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 (except in emergencies) 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.