Instructor: Nathan Pflueger (pronounced “fleeger”)  
email: npflueger@amherst.edu  
office: SMUD 510  
office hours: Tuesday 2:00-3:30  
(tentative)  
Wednesday 1:30-3:00  
Friday 1:30-2:30  
Math Fellow: Jennifer Cain  
email: jcain18@amherst.edu  
office: Tuesday 8-9  
(in SMUD 206)  
Wednesday 8-9  

Course webpage: [http://npflueger.people.amherst.edu/272/](http://npflueger.people.amherst.edu/272/)

Time and locations:  
Monday 11:00-11:50 JOCH 202 OR WEBS 102 (announced each week)  
Tuesday 1:00-1:50 SMUD 205  
Wednesday 11:00-11:50 JOCH 202  
Friday 11:00-11:50 JOCH 202  

Our Monday 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, a final exam, and occasional short quizzes in class. 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 the Mathematica software; 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 15%  Quizzes 5%
Midterm 1 15% Tuesday 10/3  Midterm 2 15% Tuesday 11/7
Final exam 35% Time TBA  Your best exam 15% (added to its original weight)

Mathematica: Approximately once every two weeks, the class will be devoted to a lab using
the Mathematica software (we will meet in Webster 102 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 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 or internet sources is plagiarism. 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.