

Math 129a: Linear Algebra I

Section 4, MW 10:30-11:45am, MQH 424

San Jose State University, Fall 2018

Instructor: Guangliang Chen
Office: 417 MacQuarrie Hall
Phone: (408) 924-5131
Email: guangliang.chen@sjsu.edu
Office hours: MW 10:45-11:45am, TR 9:50-10:20am
and by appt.

$$\begin{array}{|c|} \hline y \\ \hline \end{array} = \begin{array}{|c|} \hline A \\ \hline \end{array} \cdot \begin{array}{|c|} \hline x \\ \hline \end{array}$$

Catalog description

Matrices, systems of linear equations, vector geometry, matrix transformations, determinants, eigenvectors and eigenvalues, orthogonality, diagonalization, applications, computer exercises. Theory in \mathbb{R}^n emphasized; general real vector spaces and linear transformations introduced.

- **Prerequisite:** MATH 31 (with a grade of "C-" or better) or instructor consent
- **Textbook:** *Linear Algebra and Its Applications*, 5th edition, by D. Lay, S. Lay and J. McDonald (2015), Pearson. ISBN: 978-0321982384

Learning management system

All assignments and their scores will be posted in Canvas (accessible via <http://my.sjsu.edu/>); so check regularly and let me know ASAP if there is any mistake. We will also use some of the advanced options to facilitate learning.

Class guidelines

- The class starts on time, so do not be late.
- If you miss a class, you are responsible for finding out what's said/done in that class (such as new announcement, deadline change, etc.), and acting accordingly.
- Please make sure to turn off or mute your cell phone during class.
- Please do not perform irrelevant or distracting activities in class.
- Academic dishonesty in any form is not tolerated and will surely be reported to the Office of Student Conduct, per SJSU policy.

Grading policy

Homework assignments, with their due dates, will be regularly posted in Canvas and collected in class. Please staple your homework and write neatly (unrecognizable work will receive no credit).

You may collaborate on homework but you must write independent solutions. Copying at any level will result in a zero score for the homework (minimal penalty), and possibly additional disciplinary actions from the University.

Late homework will not be accepted for any reason, but your lowest homework score will be dropped.

There will be two in-class midterm exams and a final exam (all in this room):

- **Midterm 1:** October 2, Tuesday.
- **Midterm 2:** November 8, Thursday.
- **Final:** December 12, Wednesday, 9:45am – 12noon.

The exams are all closed-book but cheat sheets of specified sizes will be allowed.

Before each exam, a study guide along with some practice problems will be provided to you; however, there is no guarantee of any level of similarity with those problems. Thus, it is in your best interest to review for each exam thoroughly.

No make-up exams will be given if you miss a midterm exam. If you have a legitimate excuse (e.g., illness or other personal emergencies) and can provide some kind of proof, the weight of the exam will be incorporated into the final.

Show all your work for homework and tests. Note that it is your work, in terms of *correctness*, *completeness* and *clarity*, that is graded; correct answers with no or poorly written steps will be given very little credit.

The weights used in this course will be as follows:

- Homework: 15%
- Midterm 1: 20%
- Midterm 2: 25%
- Final: 40%

I will introduce a curve at the end of the semester by *combining* the following fixed percentages:

- A+: > 97, A: 93-97, A-: 90-93
- B+: 85-90, B: 80-85, B-: 75-80
- C+: 72-75, C: 68-72, C-: 65-68
- D+: 60-65, D: 55-60, D-: 50-55
- F: < 50

and the actual distribution of the class to assign your course grades.

Extra credit opportunities

Extra credit may be earned (up to 5%) in several ways throughout the semester, at the discretion of the instructor. A few examples are below:

- In-class pop quizzes (using iClicker)
- Bonus homework/test questions
- Special assignments from the instructor (such as the background survey)

Add code policy

There is usually a long waiting list for this course. In case a seat becomes available, add codes will be given by the next class in the following priority order: graduating seniors (with cards) > first timers (with preference given to juniors/seniors and math majors/minors) > repeaters > OU students.

You need to complete a short survey before you are considered for a code at <https://goo.gl/forms/rx7zXet3TXsbP2uc2>

Your responsibilities in learning

My duty as an instructor is to disseminate knowledge while helping you learn in all possible ways. The ultimate responsibility of learning is upon the student, not on the instructor. That is, you must make every effort to

- **Attend all classes:** Class attendance is strongly associated with course grade. It will be checked indefinitely throughout the semester by the instructor. If you stop coming to class or miss more than 3 classes, I will submit an alert to Spartan Connect on your behalf.
- **Participate in-class discussions:** These are good opportunities to learn from different perspectives and gain a deeper understanding of the new concepts.
- **Read the textbook:** The textbook contains many detailed explanations and good examples that cannot be covered in limited class time. Reading the textbook often can help you better understand the material.
- **Take time to think through the concepts:** This is a critical step in the learning process. Few people could fully grasp all the new material during lectures, and some further thinking is always needed outside class time.
- **Do your homework:** Chance to check your understanding of new material and practice. Most students will learn a lot better after they do the homework.
- **ASK whenever you don't understand something!!!**

Overall, you are expected to spend 6 hours outside class time per week on this course.

Study groups

You are strongly encouraged to form study groups, so that you may learn from each other and collaborate on homework (but you must write independent solutions). If you need help with finding a study partner, let me know.

Special accommodations

If you anticipate needing any special accommodation during the semester (e.g., you have a disability registered with SJSU's Accessible Education Center), please let me know as soon as possible.

***Disclaimer:** The instructor reserves the final right to interpret, and make changes to, the class policies that are stated in this course syllabus.*

Math 129a, Section 4, Tentative Class Schedule

Fall 2018, San Jose State University

Dates		Notes	Textbook Sections	Chapters
Aug. 21	T	First class	1.1, 1.2	1 Systems of Linear Equations
23	R		1.3, 1.4	
28	T		1.5, 1.6	
30	R		1.7	
Sept. 4	T		1.8, 1.9	
6	R		2.1	2 Matrix Algebra
11	T		2.2, 2.3	
13	R		2.4, 2.5	
18	T		2.8, 2.9	
20	R		3.1	3 Determinants
25	T		3.2, 3.3	
27	R		Buffer/Review	
Oct. 2	T	Midterm 1		
4	R		4.1	4 Vector Spaces
9	T		4.2	
11	R		4.3	
16	T		4.4, 4.5	
18	R		4.6, 4.7	
23	T		5.1	5 Eigenvalues and Eigenvectors
25	R		5.2	
30	T		5.3	
Nov. 1	R		5.4	
6	T		Buffer/Review	
8	R	Midterm 2		
13	T		6.1	6 Orthogonality and Least Squares
15	R		6.2	
20	T		6.3	
22	R	<i>No Class</i>	<i>Happy Thanksgiving!</i>	
27	T		6.4	
29	R		6.5	
Dec. 4	T		7.1, 7.4	
6	R	Last class	Buffer/Review	7 Symmetric Matrices and SVD
12	W	Final	9:45am – 12noon	

Total: 31 classes (including 2 in-class midterms)