

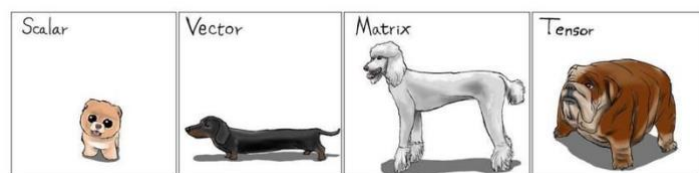
Math 39 Linear Algebra I

Section 4, TR 1:30-2:45pm, MQH 235
San Jose State University, Fall 2022

Instructor: Dr. Guangliang Chen
Office: 417 MacQuarrie Hall
Phone: (408) 924-5131
Email: guangliang.chen@sjsu.edu
Office hours: TR 12:20-1:20pm (in person),
W 4-5pm (on Zoom: 422 306 1605), and by appointment

Piazza: piazza.com/sjsu/fall2022/math39

Webpage: <http://www.sjsu.edu/faculty/guangliang.chen/Math39.html>



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 or 31X (with a grade of "C-" or better)
- **Textbook:** *Linear Algebra and Its Applications*, 5th edition, by D. Lay, S. Lay and J. McDonald (2015), Pearson. ISBN: 978-0321982384
- **MATLAB:** You are recommended, but not required, to use the MATLAB software to assist in calculations for homework and check answers. It is easy to use, flexible, powerful and free for everyone at San Jose State.

Learning management system

Course syllabus and lecture slides will be posted on the above-listed course webpage. Assignments and their scores will be posted in **Canvas** at <https://sjsu.instructure.com>. Be sure to check the site regularly and let me know ASAP if there is any mistake.

Health statement

Students registered for a College of Science (CoS) class with an in-person component should view the [CoS COVID-19 and Monkeypox Training](#) slides for updated CoS, SJSU, county, state and federal information and guidelines, and more information can be found on the [SJSU Health Advisories](#) website. By working together to follow these safety practices, we can keep our college safer. Failure to follow safety practice(s) outlined in the training, the SJSU Health Advisories website, or instructions from instructors, TAs or CoS Safety Staff may result in dismissal from CoS buildings, facilities or field sites. Updates will be implemented as changes occur (and posted to the same links).

Course requirements and assignments

Course requirements include regular homework assignments, two midterm exams, and a final exam.

Homework will be assigned regularly through Canvas. For each assignment, you need to write your work neatly on paper or on a tablet and submit an electronic version to Canvas for grading (unrecognizable work will receive no credit).

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

- **Midterm 1:** October 4, Tuesday, class time
- **Midterm 2:** November 10, Thursday, class time
- **Final:** December 14, Wednesday, 12:15 – 2:30pm.

The exams are all closed-book. More information will be given later in class.

Grading policy

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.

You must submit homework on time to receive full credit. Late submissions within 24 hours of the due time can still be accepted but will receive a penalty of 10% of the total number of points. Submissions that are late for more than one day (24 hours) will not be accepted for any reason.

Your lowest homework score will be dropped from your grade calculation.

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 documented proof, the weight of the exam will be incorporated into the final.

Show all your work for homework and exams. 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: 25%
- Midterm 2: 25%
- Final: 35%

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

The instructor 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+: 62-65, D: 58-62, D-: 55-58
- F : < 55

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

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 > repeaters > OU students.

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.

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 39, Section 4, Tentative Class Schedule

Fall 2022, San Jose State University

Dates		Notes	Textbook Sections	Chapters
Aug. 23	T	First class	1.1	1 Systems of Linear Equations
25	R		1.2, 1.3	
30	T		1.4, 1.5	
Sept. 1	R		1.6, 1.7	
6	T		1.8, 1.9	
8	R		2.1	2 Matrix Algebra
13	T		2.2, 2.3	
15	R		2.4, 2.5	
20	T		2.8, 2.9	
22	R		3.1	
27	T		3.2, 3.3	3 Determinants
29	R		Buffer/Review	
Oct. 4	T	Midterm 1	1.1 - 3.3	
6	R		4.1	4 Vector Spaces
11	T		4.2	
13	R		4.3	
18	T		4.4, 4.5	
20	R		4.6, 4.7	
25	T		5.1	
27	R		5.2	
Nov. 1	T		5.3	5 Eigenvalues and Eigenvectors
3	R		5.4	
8	T		Buffer/Review	
10	R	Midterm 2	4.1 - 5.4	
15	T		6.1	6 Orthogonality and Least Squares
17	R		6.2	
22	T		6.3	
<i>24</i>	<i>R</i>	<i>No Class</i>	<i>Happy Thanksgiving!</i>	
29	T		6.4	
Dec. 1	R		6.5	
6	T	Last class	7.1, 7.4 (if time permits)	7 Symmetric Matrices and SVD
14	W	Final exam (12:15–2:30pm)	Comprehensive	

Total: 30 classes (including 2 in-class midterms)