

Math 313 Linear Algebra (In-Person Class)

Section 001 MWF 8:00-8:50AM Psych 305

Instructor and Contact Information

Instructor : Kirti Joshi,
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Office Hours : TBA
Course home page : on D2L

Course Description Introduction to linear algebra.

Course Format and Teaching Methods

Course will be an in-person lecture format.

Course Objectives

Linear equations, matrices, and determinants. Vector spaces and linear transformations. Eigenvalues and inner products. Intro to complex numbers. Introduction to MATLAB and its uses in linear algebra.

Expected Learning Outcomes

By the end of the course, students should be able to:

1. State precise definitions of key terms introduced in the course, including systems of linear equations, vectors, vector spaces, dimension, linear independence, matrix terminology, eigenvectors and eigenvalues.
2. Carry out basic computations from linear algebra by hand, such as row reduction, determinant calculation, etc., as well as use MATLAB to carry out more intensive computations.
3. Produce simple deductive arguments that follow from the definitions and justify steps in deductive arguments based on basic logical principles.
4. Write sentences that explain the relation between key ideas in linear algebra and the algorithms that allow their calculation, e.g. the definition of a linearly independent set of vectors versus the computation of a linear independent set of vectors from a spanning set.

Makeup Policy for Students Who Register Late

Students who register after the first class meeting may make up missed assignments/quizzes by the deadlines provided to them by the instructor.

Course Communications

It is the student's responsibility to keep informed of any announcements, syllabus adjustments or policy changes made during scheduled classes, by email, or through D2L and Gradescope. I will be available to take quick questions after class. Longer discussions are best left to Office Hours. **Email policy** : I am happy to address short questions, schedule appointments, or receive other

essential communication via my university email address. Please email me from your UA email address, using appropriate email etiquette, and please allow 24 hours for a response. Substantive queries about course material and assignments should be broached in office hours.

Required Texts or Readings

Linear Algebra and its Applications, by Lay, Lay, and McDonald. This textbook is delivered digitally on D2L through the Inclusive Access program. I will use this textbook as a source for homework problem sets. Reading the text is integral to the course.

Required or Special Materials

For this class, you will need a graphing calculator, thumb drives, a laptop or a web-enabled device with a webcam and microphone; regular, daily internet access to reliable internet signal; access to camera or scanner for uploading assignments. Matlab software is required and is available to UA students for free. Support for online learning technology is available at <https://student.it.arizona.edu/>.

Assignments and Examinations: Schedule/Due Dates

Homework (20.01%) There will be two types of homework assignments, written problem sets and MATLAB assignments (between 10 to 14 total assignments). The problems will come from the text and/or from a set of problems created by the instructor.

Assessments will be graded on your ability to answer and reason correctly. Partial credit is assigned at your instructor's discretion.

Homework will be submitted via Gradescope and will always be due at 9:00 pm. Late homeworks up to three days past deadline will be accepted with a 25% penalty.

Quizzes (13.33%) Roughly every two weeks there will be an in-person quiz based on the following schedule: **Quiz 1: Sept 11, Quiz 2: Oct 9, Quiz 3: Oct 23, Quiz 4: Nov 6**. In case of absence, makeup quizzes may be given on a case by case basis provided the request for the makeup quiz is made no later than the day of original quiz.

Midterms (33.33%) : There will be two midterms which will take place during the assigned course time on **Exam 1: Sep 25** and **Exam 2: Nov 13**. These will be approximately 50 minutes long. **Two midterms together will count for 33.33%.**

Make-up Policy In general, there will be no make-up exams in the course. However, in complex and unusual circumstances which are beyond the student's control, a make-up exam may be given on a case-by-case basis. This will require providing a detailed account of the situation and supporting documents. Approval in these cases is at the sole discretion of the instructor and/or the dean of students.

Final Examination (33.33%):

The exam will cover all the material from the semester i.e. the final exam will be comprehensive. **The Final Exam is on Dec 13, from 8:00 AM-10:00 AM, from as per the schedule given in**

<https://registrar.arizona.edu/faculty-staff-resources/room-class-scheduling/schedule-classes/final-exams>

Grading Scale and Policies

Your final course grade will be determined as a percentage out of possible 100% based on the above category weight schedule. Your percentage score will be used to determine the letter grade for the course.

Grades will be no lower than the following:

A: 100-90%

B: 89-80%

C: 79-70%

D: 69-60%

E: 59-0%

Neither exam scores nor final grades will be curved. No extra credit or bonus points are offered in this course.

Incomplete (I) or Withdrawal (W):

Requests for incomplete (I) or withdrawal (W) must be made in accordance with University policies, which are available at <http://catalog.arizona.edu/policy/grades-and-grading-system#incomplete> and <http://catalog.arizona.edu/policy/grades-and-grading-system#Withdrawal> respectively.

Dispute of Grade Policy

Any questions regarding the grading of any assignment, quiz, or exam, need to be finalized within one week after the graded item has been returned.

Classroom Behavior Policy

To foster a positive learning environment, students and instructors have a shared responsibility. We want a safe, welcoming, and inclusive environment where all of us feel comfortable with each other and where we can challenge ourselves to succeed. To that end, our focus is on the tasks at hand and not on extraneous activities (e.g., texting, chatting, reading a newspaper, making phone calls, web surfing, etc.). Specifically, the use of electronic devices is to be made only for activities related to this class (e.g. taking notes, problem solving). Doing homework for another course, or using electronic devices for social media related purpose are examples of activities not related to this class.

Students are also asked to refrain from disruptive conversations with people sitting around them during lecture. Students observed engaging in disruptive activity will be asked to cease this behavior. Those who continue to disrupt the class will be asked to leave lecture or discussion and may be reported to the Dean of Students.

Safety on Campus and in the Classroom

For a list of emergency procedures for all types of incidents, please visit the website of the Critical Incident Response Team (CIRT): <https://cirt.arizona.edu/case-emergency/overview>

Also watch the video available at

https://arizona.sabacloud.com/Saba/Web_spf/NA7P1PRD161/common/learningeventdetail/crtfy000000000003560

Additional Resources for Students

UA Academic policies and procedures are available at

<http://catalog.arizona.edu/policies>

Campus Health

<http://www.health.arizona.edu/>

Campus Health provides quality medical and mental health care services through virtual and in-person care.

Phone: 520-621-9202

Counseling and Psych Services (CAPS)

<https://health.arizona.edu/counseling-psych-services>

CAPS provides mental health care, including short-term counseling services.

Phone: 520-621-3334

The Dean of Students Office's Student Assistance Program

<http://deanofstudents.arizona.edu/student-assistance/students/student-assistance>

Student Assistance helps students manage crises, life traumas, and other barriers that impede success. The staff addresses the needs of students who experience issues related to social adjustment, academic challenges, psychological health, physical health, victimization, and relationship issues, through a variety of interventions, referrals, and follow up services.

Email: DOS-deanofstudents@email.arizona.edu

Phone: 520-621-7057

Survivor Advocacy Program

<https://survivoradvocacy.arizona.edu/>

The Survivor Advocacy Program provides confidential support and advocacy services to student survivors of sexual and gender-based violence. The Program can also advise students about relevant non-UA resources available within the local community for support.

Email: survivoradvocacy@email.arizona.edu

Phone: 520-621-5767

Confidentiality of Student Records

<http://www.registrar.arizona.edu/ferpa>

University-wide Policies link

Links to the following UA policies are provided here,

<http://catalog.arizona.edu/syllabus-policies>:

- Absence and Class Participation Policies
- Threatening Behavior Policy
- Accessibility and Accommodations Policy
- Code of Academic Integrity
- Nondiscrimination and Anti-Harassment Policy
- Subject to Change Statement

Subject to change statement

Information contained in this course syllabus, other than the grade and absence policy, may be subject to change with advance notice, as deemed appropriate by the instructor; see <http://policy.arizona.edu/faculty-affairs-and-academics/course-syllabus-policy-undergraduate-template> (link is external).

Scheduled Topics/Activities

(This an approximate list of weekly activities for this class)

Week of	Topics	Week of	Topics
Aug 21	1.1-1.2	Oct 23	(Quiz 3, 10/23) 5.2-5.3
Aug 28	1.3-1.5	Oct 30	5.3-5.5
Sep 4	(9/4, Labor Day),1.7,1.8	Nov 6	(Quiz 4, 11/6),5.5,6.1 (Veterans Day 11/10)
Sep 11	(Quiz 1, 9/11), 1.9,2.1	Nov 13	6.2, (Exam 2, 11/13),6.3
Sep 18	2.2,2.3, Review	Nov 20	6.3 (Thanksgiving break)
Sep 25	(Exam 1, 9/25),4.1--4.2	Nov 27	6.4-6.5
Oct 2	4.3-4.5	Dec 4	Review, (Last class Dec 6)
Oct 9	(Quiz 2, 10/9), 3.1,3.2	Dec 8—Dec 15	Final Exams Week
Oct 16	3.3, Complex Numbers, 5.1		