MATH 1564 K

Linear Algebra with Abstract Vector Space

Fall 2023

Contact Information
Instructor: Haiyu Zou
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Course Information
Lecture Time: T/Th 2:00 pm - 3:15 pm
Lecture Location: Klaus Advance - Room 1456
Studio Time: M/W K1: 11:00 am - 11:50 am; K2/K3: 12:30 pm - 1:20 pm
Studio Location: Skiles Room 170
Delivery Method: In-person lectures
Course Prerequisite: Score of 5 in AP Calculus BC or A in Math 1552 or equivalent or permission from Academic Office.
Textbook: Linear Algebra by J. Hefferon. A printed and bound version is available from Amazon. *Available as a free download at* http://joshua.smcvt.edu/linearalgebra
Course Description: Linear Algebra provides the right language and tools to formulate and solve many problems in engineering, science, and mathematics when computers are used to aid the process. Linear Algebra allows us to represent the problems by matrices and they are very suitable for computers to manipulate. The objective of this course is provide a high level introduction to linear algebra with abstract vector spaces. Compared with Math 1554, Math 1564 is a more proof-oriented, with theoretical development of linear algebra and abstract vector spaces.

Communication
I will frequently make announcements throughout the semester. You are responsible for any announcements or materials posted on Canvas (canvas.gatech.edu). Students are enouraged to install the Canvas app on their phones, with the notification function turned on. When you email me, please include [Math 1564] in the subject of your email. This will help me to respond in a timely manner.

Piazza
Please join our class page on Piazza (https://piazza.com/gatech/fall2023/math1564k/home) so you can view/participate in course-related discussions. You are encouraged to post your questions on the class Piazza. Piazza is restricted to Math questions only. (This is not a place to post advertisements or general complaints. Any disrespectful or inappropriate comments will be removed promptly and will be reported to the Dean of the Students.) **A student can earn up to maximum 3 extra percentage points on Piazza for helpful comments to your fellow students questions.**

Gradescope
We will use Gradescope to manage assignments/assessments. You are encouraged to download its mobile app and familiarize yourself with uploading handwritten material. More information can be found here. https://gradescope-static-assets.s3-us-west-2.amazonaws.com/help/submitting_hw_guide.pdf

Attendance
Students who miss class meeting are responsible for any assignments or announcements made during missed lectures.

Grading policy
Your final grade is a weighted sum of your grades of webwork assignments, written homework assignment, two midterms, and the final.

$$G = 0.05 * \bar{W} + 0.20 \times \bar{H} + 0.25 \times M_h + 0.15 \times M_l + 0.35 \times F + E$$

Here G is your total grade for the course. $\bar{W}$ and $\bar{H}$ are the average percentages of your Webwork grades and written homework grades respectively, **both with the lowest ones dropped**. M_h and M_l denote the percentage of your best midterm and the percentage of the worst respectively. F denotes the percentage of your final exam and E here stands for extra credits you can get via participating on Piazza.

An incomplete (an 'I') is assigned when a student was doing satisfactory work, but was unable to meet the full requirements of the course for nonacademic reasons beyond their control and deemed acceptable by the instructor. If the student's performance was so poor as to preclude their receiving a passing grade, the instructor shall assign the grade of F.

A regrade request should be made in writing within 72 hours after the exams returned to the students. The usual ten-point scale will be used: A:90-100, B: 80-89, C: 70-79, D: 60:69, F:0-59.

Written Homework
You are strongly enouraged to work out written homework exercises as they will prepare you for midterms and finals. Problems on these assessments will be of comparable difficulty and rigor with those from homework.

Weekly homework assignments will be posted on Canvas and students are to submit their responses electronically. Your HW will be checked for completion (30% of the HW grade) and a sample of your solutions will be checked carefully for correctness(70% of the HW grade).

The deadline for homework submission is 11:59 pm on the due dates and is sharp. **Late homework will not be accepted for any reason.**

You are encouraged to work together on the homework assignments. You should, however, make sure that you understand and can reproduce any work that you turn in. If you do so, please list the names of all collaborators in your group.

Tentative assignment due dates are listed on last page of the syllabus.

Webwork Homework
Part of each homework assignment will use the WebWork on-line homework system. This system generates problems with randomized data, allows unlimited attempts, and grades instantly. These problems are mostly routine drill, but are essential for mastering course material. Assignments will be linked from Canvas.

Exams
There will be 2 midterm exams and a final. All exams will be given on Thursday. The final exam is comprehensive and it will be given on **Thursday, Dec. 7**.

Exam dates will be (tentatively):

Midterm 1	Midterm 2	Final
Sept. 21	Nov. 2	Dec. 7

No makeup exams will be given. There may be exceptions for Georgia Tech sponsored events, documented illness or circumstances outside of your control which prevent you from taking the exams. Please contact me **at least 48 hours** prior to the exam dates if such circumstances arise. Note that travel is not an acceptable reason to miss an exam.

Learning Disabilities
If you are in need of classroom or testing accommodations, please make an appointment with the ODS to discuss the appropriate procedures. More information is available on their website, https://gatech-accommodate.symplicity.com Please also make an appointment with me to discuss your accommodation, if necessary.

Honor Code
It is expected that all students are aware of their individual responsibilities under the Georgia Tech Academic Honor Code, which can be found at www.honor.gatech.edu. Any violations must be reported to the Dean of Students. Cheating includes, but is not limited to the following:

- Using an unapproved calculator, books, or any form of notes on tests.

- Copying directly from any source, including friends, classmates, tutors, Internet sources (including Wolfram Alpha), or a solutions manual.

- Allowing another person to copy your work.

- Taking a midterm or quiz using someone else's name, or having someone else take a test or quiz in your name.

- Asking for a re-grade of a paper that has been altered from its original form.

- Using someone else's name to gain participation points for them, or to take quizzes or tests for them, or asking someone else to use your identity for any graded or participation submission.

Additional Resources

- Drop-In Tutoring/MathLab https://tutoring.gatech.edu/drop-in/

- Center for Academic Success https://www.success.gatech.edu/

- Academic Advising https://advising.gatech.edu/

- The Office of the Dean of Students https://studentlife.gatech.edu/

- Counseling Center http://counseling.gatech.edu

- Students' Temporary Assistance and Resources (STAR) https://studentlife.gatech.edu/content/star-services

- Stamps Health Services https://health.gatech.edu

- Women's Resource Center http://www.womenscenter.gatech.edu

- LGBTQIA+ Resource Center http://lgbtqia.gatech.edu

- Veteran's Resource Center http://veterans.gatech.edu

- Georgia Tech Police https://police.gatech.edu

Statement of Intent for Inclusivity

As a member of the Georgia Tech community, your instructor is committed to creating a learning environment in which all of their students feel safe and included. Because we are individuals with varying needs, your instructor is reliant on your feedback to achieve this goal.

To that end, I (your instructor) invite you to enter into dialogue with me about the things I can stop, start, and continue doing to make my classroom an environment in which every student feels valued and can engage actively in our learning community.

Tentative Course Outline:

Week	Dates	Tue	Thu	Fri	Remark
1	8/21-8/25	1st Lec.			
2	8/28-9/1	HW1 Due		WW2 Due	WW1 Due on 8/28
3	9/4-9/8	HW2 Due		WW3 Due	9/4 Recess
4	9/11-9/15	HW3 Due		WW4 Due	
5	9/18-9/22	HW4 Due	Midterm 1		
6	9/25-9/29			WW5 Due	
7	10/2-10/6	HW5 Due		WW6 Due	
8	10/9-10/13			WW7 Due	10/9-10/10 Recess
9	10/16-10/20	HW6 Due		WW8 Due	
10	10/23-10/27	HW7 Due		WW9 Due	10/28 W day
11	10/30-11/3	HW8 Due	Midterm 2		
12	11/6-11/10			WW10 Due	
13	11/13-11/17	HW9 Due		WW11 Due	
14	11/20-11/24	HW10 Due			Thanksgiving
15	11/27-12/1			WW12 Due	
16	12/4-12/8	HW11 Due	Final		

* Course schedule is tentative and subject to change.

** **Oct. 28th is the new withdrawal/grade substitution deadline.**