

# Syllabus, Math 1553 (Introduction to Linear Algebra), Fall 2024

*Note: the syllabus and course schedule are tentative and subject to change. Any changes to the syllabus and/or course schedule after the semester begins will be relayed to the students in class and through e-mail.*

**Course Number and Title:** MATH 1553, Introduction to Linear Algebra

**This is a Core IMPACTS course that is part of the STEM area.**

Core IMPACTS refers to the core curriculum, which provides students with essential knowledge in foundational academic areas. This course will help master course content, and support students' broad academic and career goals.

This course should direct students toward a broad Orienting Question:

- How do I ask scientific questions or use data, mathematics, or technology to understand the universe?

Completion of this course should enable students to meet the following Learning Outcome:

- Students will use the scientific method and laboratory procedures or mathematical and computational methods to analyze data, solve problems, and explain natural phenomena.

Course content, activities and exercises in this course should help students develop the following Career-Ready Competencies:

- Inquiry and Analysis
- Problem-Solving
- Teamwork

## Lecture and Studio Format

\*\*\* Note: If necessary, a lecture or studio may temporarily move online under extreme circumstances such as an extreme weather event or an emergency on the part of the instructor or teaching assistant.

Instructors hold lectures in person on Mondays and Wednesdays, while TAs hold studios in person on Fridays.

The Wednesday night meeting times of 6:30-7:45 PM are **only** held on weeks when we have midterm exams.

Office hours may be held in person or virtually, as specified by each instructor or TA. See the front page of our common Canvas site for a list of office hours.

## Textbook

The textbook for this course is *Interactive Linear Algebra* by Dan Margalit and Joseph Rabinoff.

There is also an optional reference textbook (we do not use it at all anymore in 1553): *Linear Algebra and its Applications*, 6th edition, by Lay-Lay-McDonald, which you can view online if you purchase access to MyMathLab. See the final page of the syllabus for details about MyMathLab.

## Common website

The [common website](#) for Math 1553 contains much of the information found in this PDF and links to resources.

### Course-level learning goals

Linear Algebra is very conceptual compared to most courses that students have previously taken. By the end of this course, it is expected that students will be able to do the following.

- A) Solve systems of linear questions.
- B) Solve eigenvalue problems.
- C) Analyze mathematical statements and expressions (for example, to assess whether a particular statement is accurate, or to describe solutions of systems in terms of existence and uniqueness).
- D) Write logical progressions of precise mathematical statements to justify and communicate your reasoning.
- E) Apply linear algebra concepts to model, solve, and analyze real-world situations.

Students are expected, at a minimum, to be able to do all problems from lecture and homework (and similar problems) on quizzes and exams. For more, see the portion of the common website that discusses [how to succeed in this course](#).

### Course information posted online, and Piazza

Students are responsible for information communicated in all announcements and materials on Canvas. You can find the office hours for instructors and TAs on the front page of Canvas, along with information about studio locations. See our [course calendar](#) for important dates and a general schedule.

We have a common Piazza forum to facilitate discussion. You can access it by clicking the “Piazza” tab at the left side of our common Canvas site. It should ask you to register when you click the link the first time.

### Students with Disabilities and/or in need of Special Accommodations

Georgia Tech complies with the regulations of the Americans with Disabilities Act of 1990 and offers accommodations to students with disabilities. If you are in need of classroom or testing accommodations, please make an appointment with the Office of Disability Services to discuss the appropriate procedures. More information is available on their [website](#). Please also make an appointment with your instructor to discuss your accommodation, if necessary. **For exam accommodations, please see point #2 in the “Quizzes, Exams, and regrades” section.**

### Homework

Homework will be done online through WeBWorK, accessed through Canvas. Homework will be due weekly. Often, more than one assignment will be due in a given week. The “warmup” assignment for the first week of class on Webwork is just for practice and will not be graded.

Homework will generally be due at **11:59 PM on Wednesdays**, but may occasionally be due on another day of the week in exceptional cases such as exam weeks. See the [course calendar](#) for details.

Your **two lowest homework** scores will be dropped. *No late homework will be accepted.* Each WeBWork assignment counts the same amount toward your grade.

## Quizzes, Exams, and regrades

Starting the week of August 26, we will have a 15-minute **unproctored online** quiz on many Thursdays (please see the [course calendar](#) for specific dates). Quizzes will **not** be administered in studio. Instead, the quiz will open in Canvas at 4:00 AM Atlanta time on its due date, and it must be submitted by 11:00 PM Atlanta time. Each student can take the quiz during any 15-minute period of their choice in that interval. However, once the student begins the quiz, the timer will start and it will not stop. Students with accommodations for extended time will receive them automatically for quizzes.

Your **lowest quiz grade** will be dropped. No books, notes, calculators, cell phones, or other electronic devices are allowed during quizzes and exams.

**We will have three in-person exams from 6:30-7:45 PM Atlanta time on the following dates:**

1. Wednesday, September 18
2. Wednesday, October 16
3. Wednesday, November 13

**Cumulative in-person Final exam: Tuesday, December 10, from 6:00 PM - 8:50 PM.**

Some important notes regarding all midterms and the final exam:

1. Unless the student has official accommodations (see #2 below), each midterm exam must be taken during the common exam period of 6:30-7:45 PM Atlanta time on its given date, and the final exam must be taken during the Institute's designated period of 6:00-8:50 PM Atlanta time on Tuesday December 10,
2. For midterm exams, the **Testing Center** does not stay open past 5 PM, so it **will not accommodate us**. Students with 1.5x extended time accommodations may take the exam in person starting at 5:52 PM and ending at 7:45 PM in Skiles 005. Students with 2x extended time accommodations may take the exam in person starting at 5:15 PM and ending at 7:45 PM at this same location. If this is not preferable for you, please contact Prof. Jankowski at least two weeks before our first midterm exam to discuss another possibility.
3. For the final exam, the Testing Center **does** accommodate Math 1553 students, and students with extended time **must** register for the latest time slot offered by the Testing Center **on the final exam date**. Any student who does not register appropriately for the final exam at the Testing Center by the deadline will be required to take the exam at the Testing Center during the final Conflict Period date at 8:30 AM, and they may face a significant penalty on the final exam for this (failing to register on time is not a legitimate reason for taking the exam at a later date).
4. Our in-person exams will be graded through Gradescope. Once the grading is complete, students will receive a period of time when they can submit regrade requests. Regrade requests for exams **must** be made through Gradescope and must be submitted during the regrade request period. Please keep in mind that it is **possible to lose points** in a regrade request, and this does happen sometimes. Also, **please read the exam's answer key very carefully** before submitting a regrade request, in order to avoid frivolous requests. See the "Regrade Requests" section at the end of the syllabus for more details.
5. Our midterm exams and final exam will be proctored in the rooms assigned by the Institute. If safety concerns require us to move any exam online, then it will be proctored by instructors and TAs through Zoom or MS Teams. Each instructor would give their students a link for this. We would not use HonorLock.
6. Students are required to have a broadband internet connection, a webcam, and a microphone in case any exam is moved online. If an exam is moved online, then students will be required to have video and audio on for the full duration of the exam.

For the full final exam schedule, see [the registrar's schedule](#).

**Only under extreme circumstances** will you be able to take the final exam at a different time or date. Early travel plans (including already-purchased tickets) are **not** an acceptable reason for this.

## The Honor Code and Academic Dishonesty

Do not cheat! Abide by the [honor code](#) at all times. See <https://osi.gatech.edu/>. Any evidence of cheating or other violations of the Georgia Tech Honor Code will be submitted directly to the Office of Student Integrity. Cheating includes, but is not limited to:

1. Using a calculator, books, or any form of notes on quizzes or tests.
2. Copying directly from any source, including friends, classmates, tutors, internet sources (including Wolfram Alpha), or a solutions manual.
3. Allowing another person to copy your work.
4. Taking a test or quiz in someone else's name, or having someone else take a test or quiz in your name.
5. Asking for a regrade of a paper that has been altered from its original form.
6. Communicating with another student in any manner regarding any quiz or exam during the time period when the assessment is available.

We catch many cheaters every year. Don't do it!

### Studio Participation

Starting in the second studio of the semester (Friday, August 30), we will take in-person attendance at each studio. Each participation score will be a grade of 0 or 1 (out of 1). The **3 lowest participation scores will be dropped**. Students are expected to arrive on time to the studio for which they are registered, actively participate, and stay in person for the full duration of studio. For example, any student who arrives more than five minutes late for studio or leaves before the TA ends studio may be given a 0. A TA may decide to stream or record their studios, but any student who wishes to receive credit for studio participation must attend that studio in person.

We do not wish for students who are sick to attend studio, and we understand that it is not always prudent to seek medical attention just to get an excused studio absence. This is partly why we drop 3 absences out of just 10 graded studios: it provides such a large buffer for absences that there is no excuse for any student to get less than 100% in the studio participation grade.

### Missed work policy

A student **must** contact their instructor **in advance** and **provide all requested documentation** in order for an absence or missed assessment to be excused. **Otherwise, the student will receive a 0**. Any petition for an excused absence or missed assessment that is not made in advance will be denied, with exceptions only for truly extraordinary circumstances such as emergency hospitalization. This applies to all assessments including Webworks, studios, quizzes, and exams.

- **University-approved absence:** Please give your instructor notice by Wednesday, August 28, or as soon as possible once your absence has been approved.
- **Accommodations:** Students with accommodations for flexibility with attendance, extended deadlines, or a similar accommodation, must discuss these with Prof. Jankowski in advance.
- **Religious holiday:** By the end of class on Wednesday, August 28, you must **notify your instructor** of all classes and studios that you will miss due to religious holidays.
- **Illness, medical appointment, etc.:** You must **notify your instructor in advance** and be prepared to give official documentation in some form.
- In case of an **emergency leading to an extended absence**, please have your **academic advisor or the Dean's office** contact your instructor.

### Makeup quizzes and exams

In the case of an excused absence for a quiz, you may take a makeup quiz within three days of the original quiz. If this is not possible, you may discuss an alternate possibility with your instructor.

**Early makeup exams will not be given under any circumstances.** If you have an excused absence for an exam, then you may take a makeup exam on the Monday immediately following the exam, either at 5:00 PM or 6:30 PM (in either case, finishing no later than 7:45 PM) in Skiles 005. If you cannot take the makeup exam due to an excused absence, then the weight for that exam will be shifted equally to your remaining exams, including the final exam.

### Grade breakdown

The components of the class are weighted as follows:

- 5% Studio participation (three lowest scores dropped)
- 10% Homework (two lowest scores dropped)
- 15% Quizzes (lowest score dropped)
- 15% Midterm 1
- 15% Midterm 2
- 15% Midterm 3
- 25% Final exam

If you score higher on your final exam than on one of the midterms, then your final exam will count for 32.5% of your grade and your lowest midterm will count for 7.5% of your grade. However, any student found guilty of academic dishonesty of any kind in Math 1553 is ineligible for this policy.

**CIOS Incentive:** If at least 85% of all Math 1553 students complete CIOS evaluations by Tuesday December 3 at 1:00 PM (Atlanta time), we will drop the 2 lowest quiz grades rather than just the lowest quiz grade.

### Grade assignments

After *all* grades are in and all overall percentage scores for students have been computed using the weights described above, grades are assigned. The standard cutoffs are as follows.

A: [90%, 100%]   B: [80%, 90%)   C: [70%, 80%)   D: [60%, 70%)   F: [0%, 60%)

So, to guarantee an A, get 90% or better overall. (90 means 90, not 89.9)

To guarantee at least a B grade, get 80% or better overall, etc.

These cutoffs *might* be adjusted, but only in the downward direction (to make letter grades higher). In the event of a curve, only your final overall percentage grade for the course will be curved. Individual assessments *will not be* curved as we go along.

### Extra credit, calculators, and entered grades on Canvas

1. There is **no extra credit**, and there are no quiz re-takes or exam re-takes.
2. You can use calculators to check your computations when doing homework. You are **NOT allowed to use a calculator** on quizzes or exams.
3. Once a quiz or exam has been graded (or studio participation has been recorded), the grades will be entered on Canvas. Please check that the grade on your assessment is not blank and that it matches the grade recorded on Canvas. If it does not, please contact your instructor within two weeks of the assessment to correct the error. With this in mind, if you participated in a studio but have a blank score listed more than a week later, you need to contact your TA to resolve the issue or this blank will become a 0.

### Email policy

Please check the syllabus closely! Exam dates, policies, etc. are available on the syllabus.

No grade discussion by email. Any questions about letter grades (including “the curve”) should be asked during office hours or in an appointment outside of office hours, but never by email. Do not send an email asking for a higher letter grade. The only reason for sending a grade-related email is an incorrect score in Canvas. In that case, please email Prof. Jankowski detailed computations for what you believe is your correct score.

No mathematics by email. Let’s discuss mathematics on Piazza instead! This will open the question to the entire class, including all TAs, instructors, and other students who may be able to provide insight. We can also discuss questions during office hours, or at a scheduled appointment outside of office hours.

### Additional resources and tutoring

The [Math Lab](#) offers tutoring, and there is also free **1-to-1 tutoring**. If appointments are full when you are available, you may request additional tutoring. We also have [PLUS sessions](#). A comprehensive list of tutoring resources is available at <https://tutoring.gatech.edu>.

### Waitlists, Registration, Permits, etc.

Instructors are forbidden from doing anything regarding class registration. They cannot issue permits, remove students from waitlists, etc. For guidelines on such matters, please consult <https://math.gatech.edu/permits-and-waitlists>.

### Lecture and Studio

In the event of an absence, you are responsible for all missed materials, assignments, and any additional announcements or schedule changes given in class. Class disruptions of any kind will not be tolerated. Please show courtesy to your fellow classmates and instructor. It is at the discretion of the instructor whether they wish to record their lecture or not.

### Snow Days and Other Class Cancellations

If that Georgia Tech closes campus or decides to cancel in-person classes for a day due to weather or analogous circumstances, we plan to hold lecture remotely on that date through MS Teams or Zoom. Your instructor will give details if such an event occurs.

### Recorded Lectures

Prof. Jankowski recorded his lectures during the Spring 2022 semester and has posted them at his website [here](#). Of course, if you view the recordings, please keep in mind that the beginning of each of these recorded lectures discusses course logistics, due dates, etc. from the Spring 2022 semester.

### Georgia Tech Resources for Personal Support

[The Office of the Dean of Students](#).

[Counseling Center](#): 404-894-2575; Suite 238 Smithgall Student Services Building

Services include short-term individual counseling, group counseling, couples counseling, testing and assessment, referral services, and crisis intervention. Their website also includes links to state and national resources.

[Students' Temporary Assistance and Resources \(STAR\)](#) Can assist with interview clothing, food, and housing needs.

[Stamps Health Services](#): 404-894-1420; Primary care, pharmacy, women's health, psychiatry, immunization and allergy, health promotion, and nutrition

[OMED: Educational Services](#)

[Women's Resource Center](#)

[LGBTQIA Resource Center](#): 404-385-4780

[Veteran's Resource Center](#): 404-385-2067

[Academic advisors](#) for your major

[Academic coaching](#)

Georgia Tech Police: 404-894-2500

## Statement for Inclusivity

As members of the Georgia Tech community, we are committed to creating a learning environment in which all of our students feel safe and included. Because we are individuals with varying needs, we are reliant on your feedback to achieve this goal. To that end, we invite you to enter into dialogue with us about the things we can stop, start, and continue doing to make the classroom an environment in which every student feels valued and can engage actively in our learning community.

### Note on class modes and the COVID-19 pandemic

The instructors and TAs hope to provide an in-class experience for students as much as possible this semester. However, at times, it may be necessary for classes to move online due to a rise in COVID-19 cases on campus, or illness/isolation of the instructor or TA. We will notify students as soon as possible if any classes will meet online. We also strongly encourage students who are sick to stay home, so that we can safely continue to offer as many in-person events as possible.

MyMathLab: Those who wish to view our **optional** secondary textbook online may do so by enrolling in our MML course linked to Canvas. If you wish to get MML access, Please login to your Canvas account, then go to the “Access Pearson” tool on the left-hand menu. From that page, you can log in to, or create, your MyMathLab account to access our course. You should not need to enter a course ID.

- If you purchased a MyMathLab code for our combined textbooks in the past 18 months, then you do not need to purchase or request a new code. Login to your MyMathLab account through Canvas to add to our course.
- If you do not have a MyMathLab account using the Thomas or Lay textbooks, or if your account is over 18 months old, you will need to purchase a new code for our course if you wish to access the optional textbook. For this, please refer to the registration document [here](#).
- Please note that purchase options for this custom code include both a 24-month and an 18-week option. If you are planning to take at least two courses that utilize this code, we recommend the 24-month option. If you only need one of these courses, then the 18-week option may be more economical. Courses utilizing this combined text are Math 1550, Math 1551, Math 1552, Math 1554, Math 2550, and Math 2551.

MyMathLab comes with an entire electronic version of the textbook; it is your choice if you would also like to own the textbook in print. You may purchase a MyMathLab code either from the bookstore or on-line while registering at <http://www.mymathlab.com>. PLEASE NOTE: GEORGIA TECH HAS A SPECIAL CODE PACKAGE THAT INCLUDES BOTH TEXTBOOKS. THIS CODE CAN ONLY BE PURCHASED THROUGH THE CAMPUS BOOKSTORES OR DIRECTLY FROM PEARSON. CODES PURCHASED BY OTHER VENDORS WILL NOT WORK! If you have issues with access codes, please contact the vendor that you used to purchase the code; either the campus bookstore or Pearson ([askpearsonsupport.com](mailto:askpearsonsupport.com)).

## Missing Grades and Hard Copies of Exams

On Canvas, if your grade is not reported, that means we do not have a submission from you for that assignment. It is every student's obligation to check Canvas regularly and report grading errors promptly to their instructor.

This is especially important with regard to our midterm exams. Once the regrade request period for a midterm exam has passed, we may destroy the physical copies of the midterms, so all that will remain is the digital copy on Gradescope. With this in mind, it is the student's responsibility to take a close look **before the regrade request deadline** to ensure that their exam is present in Gradescope and to check that there was not a scanning issue that affected how a problem was graded.

## Regrade Requests

Exam grading is an important component of the course, and we take it very seriously. However, we are human and may make mistakes during exam grading. After each midterm is released on Gradescope, we have a regrade request period. Please keep in mind the following.

1. Regrade requests must be made through the appropriate form in Gradescope. We cannot consider regrade requests made in any other fashion. Any regrade requests made after the deadline may be rejected without consideration.
2. The regrade request period will be at least 72 hours, in order to ensure every student has the opportunity to take a close look at their graded exam.
3. When making a regrade request, the student must state specifically what they believe was misgraded in the problem. It is inappropriate to submit a request such as "I think I deserve more credit" without additional explanation.
4. **It is possible for a student's grade to decrease as the result of a regrade request.** Occasionally, a regrade request has led a grader to realize they had originally made a grading error in the student's favor. Fixing this error resulted in a decrease in the student's score.
5. Regrade requests may lead the grader to regrade the full problem in question, not just a specific part. For example, a regrade request made for part (a) of a problem may lead the grader to realize that they had accidentally hit the wrong rubric button and had meant to subtract points in part (b). As another example, we have seen cases where a student had a legitimate regrade request for part (a) of a problem, but the request led us to notice that the grader had made an egregious error in the student's favor in part (b) of the problem. The end result was a net decrease in the student's score.
6. Students are responsible for reading the solutions key very carefully before sending a regrade request. It is inappropriate to submit a regrade request that asks how to do the problem or why your answer was wrong.