

MATH 1554 Syllabus

Linear Algebra, QH and QHS, 4 Credit Hours

Fall 2026

Instructor Information

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General Course Information

Description

The primary goal of Math 1554 is to prepare students to succeed in upper level courses that require linear algebra as a pre-requisite.

To this end our course is designed to:

- prepare students to apply fundamental concepts of linear algebra to understand systems that arise in applications, and
- help students refine their learning strategies to help them succeed in college level courses.

This course helps students make a **transition** between high school and college. We achieve this goal through course activities that ask students to reflect on their learning strategies, and review course and institute policies and procedures. Students are also supported through this transition by encouraging them to ask questions our online forum, during studio sessions, during office hours, and with their peers. All of these strategies are valuable methods that are transferable to higher-level courses.

Course Learning Outcomes

The learning objectives for this course are as follows.

1. Construct, or give examples of, mathematical expressions that involve vectors, matrices, and linear systems of linear equations. For example: construct an invertible matrix with four columns that is not diagonalizable.
2. Evaluate mathematical expressions to compute quantities that deal with linear systems and eigenvalue problems. Examples: compute the singular value

decomposition of a given matrix, or construct the LU decomposition of a rectangular matrix.

3. Analyze mathematical statements and expressions. For example: assess whether a given statement is accurate, or describe solutions of systems in terms of existence and uniqueness.
4. Write logical progressions of abstract mathematical arguments. For example, to explain why a square matrix with linearly independent columns is invertible.
5. Apply linear algebra concepts to model, solve, and analyze real-world situations.
6. Refine learning and study strategies for college level courses.

Regarding the last item: for most students in this class, MATH 1554 is their first college level mathematics course. Students may find that to reach their individual learning goals, they must adapt their study strategies and become familiar with a set of expectations and policies that are different than what they may have been used to. There are activities that are designed to help students make this transition, some of which involve reflection on learning strategies, identifying course and institute policies related to this class.

Required Course Materials

None.

Grading Policy:

Final grades are calculated using the following grade weightings.

Weight	Assessment
2%	Participation
3%	Written Assignments
5%	Module Tests
15%	Homework
45%	Exams
30%	Final Exam

Weightings for Exams

- The Exam score is calculated using the weighting listed below.
 - 20% for your exam with the highest score

- 15% for your exam with the middle score
- 10% for your exam with the lowest score
- Example: suppose you scored 77% on the first exam, 88% on exam 2, and 98% on exam 3. Then your overall exam score out of 100% would be calculated as $(77 \times 0.10 + 88 \times 0.15 + 98 \times 0.20) / 45 \times 100\% = 90\%$.
- Unfortunately Canvas cannot handle differently weighted exams. The Canvas grade book will be set up so that each exam is worth 15%. An exam score will be calculated manually for each student a few business days after the third exam is graded and returned.

Weightings for Final Exam

- The Final Exam is two parts. Exam score is calculated using the weighting listed below.
 - 20% for your exam with the higher score
 - 10% for your exam with the lower score
- For example, if you scored 90% on one of the two parts of the final exam, and 72% on the other part. Then your overall final exam score out of 100% would be calculated as $(90 \times 0.2 + 72 \times 0.1) / 30 \times 100\% = 84\%$.
- The Canvas grade book will be set up so that each exam is worth 15%. Exam scores are calculated manually for each student after the final exam is graded and returned. Probably this is the Friday before final grades are due to the GT Registrar.

Course Policies

Attendance and/or Participation

- Studio sessions are facilitated by the instructor and TAs and are held Mondays and Wednesdays, 8:25 am to 9:15 am.
- All sessions are recorded and links to recordings typically appear in Canvas within 48 hours after the session is held.
- Studio session attendance is not mandatory.
- We expect all students to either attend the sessions or view their recordings.

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review [Georgia Tech's Honor Code](#) and the student [Code of Conduct](#).

Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Core IMPACTS

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

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, [contact the Office of Disability Services](#) (404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. [The Student-Faculty Expectations](#) articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Pre- &/or Co-Requisites

Math SAT Section Score (new SAT) of 620 or ACT 26 or ACT equivalent 600 or MATH 1113 Precalculus or 15X2 or 1X52 or MATH 1552 Integral Calculus.

Extra Credit Opportunities

- Opportunities for extra credit will be made available throughout the semester.
- Access dates, due dates, and further details will be given elsewhere on pages within Canvas.
- Extra credit activities can add no more than 1% to your final grade before it is converted to a letter grade.

Collaboration

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards.

For information on Georgia Tech's Academic Honor Code, please visit <https://policylibrary.gatech.edu/student-life/academic-honor-code> [Links to an external site.](#)

Any student suspected of cheating or plagiarizing on any course activity will be either reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations if any, and/or addressed in a Faculty Conference Resolution between the course instructor and the student.

In either case, evidence of cheating or other violations of the Georgia Tech Honor Code may be submitted directly to the Office of Student Integrity (OSI) and to the student's designated facilitator at their high school.

Details on the Faculty Conference Resolution process are here:

<https://osi.gatech.edu/content/faculty-conference-resolution>

Cheating includes, but is not limited to the following.

- Copying directly from **any** source during a closed-book exam, including friends, classmates, or a solutions manual.
- Allowing another person to format the work that you submitted for course credit.
- Taking a test using someone else's name, or having someone else take a test in your name.
- Asking for a re-grade of a paper that has been altered from its original form.

Any Member of the GT Community Can Submit an Incident Referral

- Students who would like to report an incident can at any time fill out an Academic Incident Referral form at: <https://osi.gatech.edu>. [Links to an external site.](#)
- Teaching assistants, instructors, staff, or **any** member of the GT community can also at any time fill out an Academic Incident Referral form.
- Questions that anyone may have about the referral form can be directed to OSI (their contact info is in the instructions at the top of the form).

Student Use of Mobile Devices in the Classroom

NA

Campus Resources for Students

Undergraduate Student Academic Success Resources:

- Academic Support: Academic Success and Advising (a unit in the Office of Undergraduate Education & Student Success) provides free support for your courses. Students can attend scheduled supplemental review (PLUS) sessions, stop by Drop-In Tutoring, or schedule a one-on-one appointment through Knack. To explore what options work best for you, please visit us online at success.gatech.edu/tutoring, email us at tutoring@gatech.edu, or come see us at Clough Undergraduate Learning Commons, Suite 283.

Student Well-Being:

At Georgia Tech, we are concerned about your overall physical, social, and mental well-being. A [comprehensive list](#) of wellness related resources has been compiled and maintained by the Office of the Vice President for Student Engagement and Well-being ([student-resource-guide \(gatech.edu\)](#))

Additional Syllabus Components

- Items in this syllabus are subject to change prior to the first day of lecture.
- Additional course policies will be made available in Canvas on or before the first day of lecture.