Linear Algebra

Last Updated: Sun, 01/04/2026

Course prefix: MATH

Course number: 1554

Section: J

CRN (you may add up to five):
27157 32869 32870 24601

Instructor First Name: Cuyler

Instructor Last Name: Warnock (Course Coordinator)

Semester: Spring

Academic year: 2026

Course description:

Linear algebra through eigenvalues, eigenvectors, applications to linear systems, least squares, diagonalization, quadratic forms.

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 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. Identify course-related information, policies, and procedures that are contained in the syllabus and related course websites.

Required course materials:

Canvas access is required. Textbook purchase is optional.

Grading policy:

MQEW Score: 25%

Best Midterm: 20%

Middle Midterm: 20%

Worst Midterm: 15%

Final Exam: 20%

Your MQEW Score in the course is calculated as your total number of MQEW pts out of **70pts possible as a maximum**. There will be approximately 120pts available, so you only need to accumulate about half of the available MQEW pts to obtain a perfect MQEW Score and receive the full 25% MQEW portion of your course grade. There are four ways to accumulate MQEW pts: **M**yMathLab/WeBWorK homework assignments, In-studio **Q**uizzes, **E**xploration assignments, and Exam **W**rappers. There is also a Quiz 0 Syllabus Quiz which is open during the first two weeks of class and which is worth 6pts MQEW.

Any MQEW points that a student obtains over the semester over the 70pt cap will be converted to final exam bonus points at a conversion rate of 1pt MQEW = 0.05% Final Exam Average bonus. For example, if a student obtains 120pts MQEW for the semester then the student will receive an additional 2.5% Final Exam score bonus, which would be in addition to the CIOS bonus if this is also achieved by the class. This bonus also will not allow the Final Exam score to exceed a perfect score of 100%.

Students who are disruptive in class may receive a deduction on their total MQEW score (out of approximately 120pts available) to be assessed at the end of the semester, at the discretion of the instructor. Repeated offenses will be referred to OSI and the Dean of Students.

Attendance policy:

Students are expected to attend all lectures and studios unless feeling sick, and are expected to come prepared and actively participate in the class sessions. 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 and may result in your removal from the classroom and/or loss of participation points for that day.

Please show courtesy to your fellow classmates and instructor or teaching assistant by adhering to the following class rules:

- Turn off all laptops, cellular phones, and other electronic devices, unless you have a documented need to use such devices for note-taking, during class.
- Come to class on time and stay for the entire class period.

- Refrain from conversing with your fellow students.
- Put away any reading materials unrelated to the course.

Seating in our classrooms is limited. As space must be guaranteed for all registered students, please do not attend a lecture or studio section for which you are not registered. The instructors and TAs reserve the right to remove unregistered students from their classrooms.

Academic honesty/integrity statement:

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 http://osi.gatech.edu/content/honor-codeLinks to an external site.. Any student suspected of cheating or plagiarizing on any exam will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Any evidence of cheating or other violations of the Georgia Tech Honor Code will be submitted directly to the Dean of Students, resulting in a zero for the assignment and the forfeiture of any class bonus, and the zero can not be replaced with other points in the MQE category. Cheating includes, but is not limited to the following.

- Using a calculator, cell phone, books, or any form of notes on exams.
- Copying directly from **any** source during an exam, including friends, classmates, Reddit or another online forum, or a solutions manual.
- Allowing another person to copy your work, or posting your work to an online forum before grades are released/after everyone has taken the quiz/exam.
- 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.
- Using someone else's name to take tests for them, or asking someone else to use your identity for any graded or participation submission.

Core IMPACTS statement(s) (if applicable):

This is a Core IMPACTS course that is part of the Technology, Mathematics & Sciences 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