# MATH 2641 – Linear Algebra

## Summer Semester, 2026

**Course:** MATH 2641 – Linear Algebra; **CRN**: 53478
**Textbook:** *Linear Algebra and its Applications*, 6th ed., by David Lay *et al*,
Pearson publishing, ISBN 0135496705
Online Access: Click ANY assignment in the MLM assignment tab in iCollege
(will be set up closer to start of semester, cannot be accessed yet)

**Course description**: Linear Algebra I. Theory and applications of matrix algebra, vector spaces, and linear transformations. Topics include linear equations and matrices, invertible matrices, determinants, vector spaces, subspaces, bases, eigenvalues and eigenvectors.

**Prerequisite:** Grade of C or higher in MATH 2212
**Days & Time: 1:50-4:20pm, Mondays & Wednesdays** **Room:** online (Zoom)
**Instructor:** Yongwei Yao
**Office:** 1431 Park Place
**Office Hours:** 10:30am-12:30pm, Tuesdays & Thursdays, on Zoom (or by appointment)
**Office Phone:** 404-413-6454 **Department Phone:** 404-413-6400
**E-mail:** yyao@gsu.edu

**Course evaluation:** Your course grade will be determined as follows:

a. **Tests (45% or 15% each).** There will be three tests – closed-books, closed-notes. Each test will contribute 15% to your course grade.

b. **Online Homeworks (15%).** Online homeworks will be made available on the MyLabMath website (see above) throughout the semester. The lowest 3 will be dropped, and the average of the remaining homework grades will contribute 15% to your course grade. All homeworks can be worked on late until the last day of class, July 27$^{th}$, although you will have a 20% penalty on all questions submitted after the due date.

c. **Online Quizzes (15%).** There will be various Online quizzes assigned throughout the semester ALSO administered through MyLabMath. The lowest quiz will be dropped, and the average of the remaining assignments will contribute 15% to your course grade. Unlike homeworks, quizzes can NOT be submitted late, and there will be no extensions for quizzes.

d. **Final Exam (25%).** The comprehensive final exam is scheduled for **Monday, 08/03/2026, 13:30-16:00pm (on Zoom).** Except for its duration, the format and policies for the final exam are the same as for the tests. If your Final Exam score is higher than your lowest test score, it will be used to replace the lowest test score in the determination of your final grade.

**Example of Final Grade Computation:**

Test Grades: T1 = 88, T2 = 72, T3 = 68; Final Exam: 78;

Homework average = 95; Quiz average = 90;

Final Grade: 0.15*(88+72+**78**) + 0.15*(95) + 0.15*90 + 0.25*78 = 82.95, which rounds to 83, which is a B.

(Note the replaced grade for Test 3.)

**Letter grades** will be awarded as follows:

97%-100% → A+

93%-96% → A

90%-92% → A-

87%-89% → B+

83%-86% → B

80%-82% → B-

77%-79% → C+

70%-76% → C

60%-69% → D

Below 60% → F

***Note: The replacement of the lowest midterm grade with final exam grade (if it is higher) will be done during the calculation of final grades. The grade replacement will not appear in iCollege. Grades in iCollege will reflect the grades earned throughout the semester.

**Student Learning Outcomes:**

After successfully completing the course, you will have a good understanding of the following topics and their applications:

- Systems of linear equations
- Row reduction and echelon forms
- Matrix operations, including inverses
- Block matrices
- Linear dependence and independence
- Subspaces and bases and dimensions
- Determinants and their properties
- Vector spaces and subspaces
- Eigenvalues and eigenvectors
- Symmetric matrices

- Linear transformations

**Faculty initiated withdrawals:** Under certain specific circumstances, you may be forcibly withdrawn from the course for lack of attendance. Failure to meet EITHER of the following requirements will be considered as lack of attendance:

1. If you do not attend any of the class periods during the first week of the semester, you will be administratively withdrawn from the class for non-attendance.
2. If you do not register for MyLabMath during the first two weeks of the semester, you will be administratively withdrawn from the class for non-attendance.

**Goals of the class**: To provide students with a solid background in linear algebra and basic matrix theory, including applications.

**Cheating/Plagiarism:** Cheating/plagiarism will not be tolerated on any work. A first occurrence will result in a grade of 0 on the assignment for all concerned parties as well as an Academic Dishonesty form being filed with the Dean of Students. A second occurrence will result in a grade of F for the course for the concerned parties and a second Academic Dishonesty form being filed.

**Inclement Weather Policy:** If the University is closed due to inclement weather, any exam that may have been scheduled for that date will be administered on the next available class date. If an assignment is due that day (or if you are scheduled for an exam), it will be due the next class.

**Attendance and Conduct Policy:** Attendance and participation are fundamental elements of our classes, thus it is expected that you will attend our scheduled class sessions each week, for the entire time and actively participate.
GSU has a process for students seeking EXTENDED excused absences through the Dean of Students Office for absences of a week or more. Students submit documentation to https://deanofstudents.gsu.edu/student-assistance/professor-absence-notification/. Professors will then be notified by the Dean of Students of any excused absence without the need to manage medical information individually. A maximum of one week can be excused in this way.

**Withdrawal Policy:** If you withdraw from this class on or before the Withdrawal of the semester (**Monday, July 13th**), you will receive a WP regardless of your performance. The computer will then turn this into a W or a WF depending on how many cumulative withdrawals you have in the University. Voluntary withdrawals after the $13^{th}$ are no longer allowed.

**Evaluations:** Your constructive assessment of this course plays an indispensable role in shaping education at Georgia State. Upon completing the course, please take time to fill out the online course evaluation.

**Accommodation:** Students who wish to request an accommodation may do so by registering with the Access and Accommodation Center (AACE). Students may only be accommodated if the instructor receives an email with the notification of approved accommodations from AACE. Note: Accommodations are not retroactive and will be applicable following the date in which they are received.

**Unauthorized Public Posting and Distribution Policy**: The selling, sharing, publishing, presenting, or distributing of instructor-prepared course lecture notes, videos, audio recordings, or any other instructor-produced materials from any course for any commercial purpose is strictly prohibited unless explicit written permission is granted in advance by the course instructor. This includes posting any materials on websites such as Chegg, Course Hero, OneClass, Stuvia, StuDocu and other similar sites. Unauthorized sale or commercial distribution of such material is a violation of the instructor's intellectual property and the privacy rights of students attending the class, and is prohibited. Failure to abide by these limitations constitutes a violation of the Policy on Academic Honesty and will be treated accordingly.

THIS SYLLABUS PROVIDES A GENERAL PLAN FOR THE COURSE,
DEVIATIONS MAY BE NECESSARY

NOTE: This schedule represents a general plan for the course, but deviations may be necessary

| Week | Dates | Sections |
|---|---|---|
| 1 | Jun 8 | Intro, 1.1, 1.2<br>1.2, 1.3 |
| 2 | Jun 10 | 1.4<br>1.5, 1.6* |
| 3 | Jun 15 | 1.7, 1.8 |
| 4 | Jun 17 | 1.9<br>*Test 1 Review (time permitting)* |
| 5 | Jun 22 | **Test 1 on 06/22, in class (3:05-4:20pm)**<br>2.1 |
| 6 | Jun 24 | 2.2<br>2.3, 2.4 |
| 7 | Jun 29 | 2.8<br>2.9 |
| 8 | Jul 1 | 3.1,3.2<br>*Test 2 Review (time permitting)* |
| 9 | Jul 6 | **Test 2 on 07/06, in class (3:05-4:20pm)**<br>4.1, 4.2 |
| 10 | Jul 8 | 4.3<br>4.4 |
| 11 | Jul 13 | 4.5<br>4.6 |
| 12 | Jul 15 | *Test 3 Review (time permitting)*<br>**Test 3 on 07/15, in class (3:05-4:20pm)** |
| 13 | Jul 20 | 5.1, 5.2<br>5.2, 5.3 |
| 14 | Jul 22 | 5.3, 5.4<br>Final exam review (time permitting) |
| | **Aug 03** | **Final exam on 08/03, 1:30-4:00pm, Zoom** |

*1.6 is considered optional, only cover it if you have time.