Introduction to Linear Algebra MA 260-1A Spring 2026

Instructor: Dr. Gunter Stolz
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Office hours: Send email to stolz@uab.edu to set up an appointment on Zoom (preferred) or in person. Provide a couple of possible times.
Class Meetings: Monday, Wednesday and Friday 8:00am to 8:50am, HHB 221

Important dates:

First day of class Monday, January 12

Martin Luther King-Holiday, January 19, no class

Last day to add/drop (without paying full tuition and fees) January 20

Extended Drop Period (without paying tuition, student is responsible for fee) Jan 21 to Feb 25

Test 1: Friday, February 6

Test 2: Friday, March 6

Spring Break: March 9-15

Last Day to Drop course with a Grade of W March 27

Test 3: Friday, April 10

Last day of class Friday, April 24

Final exam: Monday, April 27, 8:00am to 10:30am, HHB 221

Textbook Howard Anton, Chris Rorres and Anton Kaul, Elementary Linear Algebra, Applications Version, 12th edition, Wiley, ISBN-13: 978-1119282365. The electronic version of the book is already uploaded to your Canvas page under "First Day Access". More information is available at

https://www.uab.edu/elearning/academic-technologies/first-day-access

Here you can also find information about opting out of First Day Access.

Learning Outcomes:

- Students will learn about **Systems of Linear Equations** and how to use **matrices** as a tool in solving them, Sections 1.1 to 1.9

- **Determinants** will be studied, in particular their relation to inverting matrices. Sections 2.1 to 2.3
- **Euclidean Vector Spaces** R^n for general n will be introduced, Sections 3.1 to 3.3
- The concept of **General Vector Spaces** will be introduced, Sections 4.1 to 4.9
- Students will learn how to calculate **Eigenvalues and Eigenvectors** of square matrices, Sections 5.1 and 5.2
- **Inner Product Spaces** and their relation to orthogonality will be introduced, Sections 6.1 to 6.3
- Students will learn how to **diagonalize** symmetric matrices, Sections 7.1 and 7.2
- Applications of Linear Algebra in other fields of science will be discussed (as much as time permits):
  - Dynamical Systems and Markov Chains (Section 5.5)
  - Least Squares Solutions, Straight Line Fit, Linear Regression (Sections 6.4, 6.5)
  - Applications to Genetics (Section 10.14)
  - Internet Search Engines (Section 10.19)

Grading policy: Your course grade will be determined from the tests, final exam and attendance with the weights

- Homework (13 %)
- Attendance (7 %)
- Test 1, Test 2 and Test 3 (16 % each)
- Final Exam (32 %)

Your letter grade will be determined by:

$$A = 90 - 100,\ B = 75 - 89.9,\ C = 60 - 74.9,\ D = 45 - 59.9$$

Attendance: Attendance in at least 35 of the 38 class meetings (not counting MLK Day and test days) is mandatory. Each attendance will earn you 0.2 points credit, for a total of up to 7 points for the course.

The instructor will follow the indicated sections of the book (but occasionally include different or additional examples), so if you have to miss a class, study the book and the beamer/power point slides used in class thoroughly. The latter will be posted in Canvas under 'Files'. Also, ask a fellow student for what was covered in class,

Homework:

- Weekly homework sets will be chosen from the book and posted as assignments on CANVAS. They will usually be due within one week. Answers to the homework problems, **including full solutions**, need to be turned in on the due date by 11:59pm via Canvas.
- Each graded HW set receives 0, 0.5 or 1 point credit. There will be a total of 13 homework sets, which will accumulate to a maximum score of 13 points, as reflected in the grading policy.
- No late homework is accepted.

Tests and Final:

- **In-Class Tests.** Three 50-minute tests will be given. Test dates are tentative. At least one week notice will be given for the exact test dates and for the sections of the book to be covered.

  If a test is missed due to a serious verifiable circumstance or official university business, the test grade will be replaced with the properly re-scaled final exam score. You have to provide written evidence for having to miss the test and advise the instructor of such circumstances at the earliest possibility.

- **Final exam.**

  Monday, April 27, 8:00am to 10:30am.

  The Final Exam is comprehensive.

- **Tests and Final.** All tests and the final exam are open book and open notes. Sample tests will be provided beforehand. You may use a calculator, and most likely you will need one, so bring one with you. You may also use a phone, laptop or a tablet without internet connection (Wi-Fi switched off, airplane mode).

  In particular, the use of **AI tools** in tests and the final exam is strictly prohibited. Violation of this policy will lead to exclusion from the test or exam and a zero sore.

Announcements:

Official course announcements will be made via Canvas.

Academic Misconduct:

UAB Faculty expects all members of its academic community to function according to the highest ethical and professional standards. Academic dishonesty and misconduct includes, but is not limited to, acts of abetting, cheating, plagiarism, fabrication, and misrepresentation. Students are expected to honor the UAB Academic Code of Conduct as detailed in the most current UAB Policies Guide. Please consult these resources for additional information regarding the specific procedures to be undertaken when a student violates the UAB Academic Code of Conduct.

- https://www.uab.edu/students/one-stop/policies/academic-honor-code
- https://www.uab.edu/engineering/home/students/code-of-conduct#academic

DSS Accessibility Statement:

UAB is committed to providing an accessible learning experience for all students. If you are a student with a disability that qualifies under Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act, and you require accommodations, please contact Disability Support Services for information on accommodations, registration and procedures. Requests for reasonable accommodations involve an interactive process and consist of a collaborative effort among the student, DSS, faculty and staff. If you are registered with Disability Support Services, please contact DSS to discuss accommodations that may be necessary in this course. If you have a disability but have not contacted Disability Support Services, please call 934-4205 or visit http://www.uab.edu/dss or Hill Student Center Suite 409.

Title IX Statement:

The University of Alabama at Birmingham is committed to providing an environment that is free from sexual misconduct, which includes gender-based assault, harassment, exploitation, dating and domestic violence, stalking, as well as discrimination based on sex, sexual orientation, gender identity, and gender expression. If you have experienced any of the aforementioned conduct we encourage you to report the incident. UAB provides several avenues for reporting. For more information about Title IX, policy, reporting, protections, resources and supports, please visit http://www.uab.edu/titleix for UAB's Title IX Policy, UAB's Equal Opportunity, Anti-Harassment Policy and Duty to Report and Non-Retaliation Policy.