COURSE DESCRIPTION
ALGEBRA I: LINEAR
MA 434-2C
FALL 2024

DEPARTMENT OF MATHEMATICS
UNIVERSITY OF ALABAMA AT BIRMINGHAM

Course Instructor: Dr. Carmeliza Navasca
Pronouns: she/her/hers
E-mail: cnavasca@uab.edu
Office: University Hall 4010
Phone: (205) 934-2154
Preferred Methods of Contact: Email is the preferred method of contact if you have questions. Please expect a response within 24 hours on weekdays and a slower response on weekends (OR Emails received after 5 pm on Friday will be returned Monday morning). Office hours will be in person in UH 4010. Virtual office hours will be hosted through Zoom by appointment only.
Office Hours: TBA

Course Info

Meeting times: TR, 11:00 AM -12:15 PM
Meeting location: HHB 221
Required Textbook: *LINEAR ALGEBRA,* 5th Edition by Stephen Friedberg, Arnold Insel and Lawrence Spence, 2019

Important Dates

First day of our class: August 27, 2024
Labor Holiday: September 2, 2024
Last day to drop without paying full tuition: September 3, 2024
Fall/Thanksgiving Break: November 25 – December 1, 2024
Last day of our class: December 5, 2024
Quiz Dates: September 13, 2024, October 25, 2024 and November 15, 2024
Midterm Date: October 7, 2024
Final Exam Date: Tuesday, December 10, 2024

Course Policies

- Please make sure that you are able to receive e-mail through your Blazer-ID account.
- If your are contacted by the Early Alert Program, you should consider taking advantage of the services it offers.
- If you wish to request a disability accommodation please contact DSS at 934-4205 or at *dss@uab.edu*.

Date: August 20, 2024.

Course Description

Abstract vector spaces. Linear transformations: ranges and null spaces; matrix representation; invertibility and isomorphism; the change of coordinate matrix; transformation of a matrix of a linear map under a change of basis. Elementary matrix operations and elementary matrices; column and row spaces of a matrix; rank. Theory of systems of linear equations. Inner product spaces: inner products and norms; orthogonal bases; Gram-Schmidt orthogonalization process and orthogonal complements; self-adjoint operators; spectral theorem. Generalized eigenvectors; Jordan form. Applications.

Learning Outcomes

Upon successful completion of the course, a student will have a solid background on the fundamental principles of linear algebra, i.e., vector spaces, linear transformation, spectral decomposition, Jordan decomposition and solving linear systems.

Class Management via Canvas

- Homework problems will be posted in canvas (`http://www.uab.edu/online/canvas`). Other class materials (class announcements, codes, grades and etc.) will be posted in canvas. Students should log in to canvas at least once a day! (I prefer to receive emails via canvas.)
- Homework assignments, projects and activities will only be collected on canvas.

Assessment Procedures

- Student achievement will be assessed by the following measures:
  - **Weekly class activity/Participation** Class activity will be due weekly. There will be no extension of deadlines for any reason. Class activity/Participation contributes 15% to the course average.
  - **Weekly homework.** Homework will be due weekly. There will be no extension of deadlines for any reason. Homework contributes 20% to the course average.
  - **Project.** The project contributes 10% to the course average.
  - **Quiz.** The quizzes contribute 5% to the course average. There will be no make-up quizzes.
  - **Midterm exam.** The midterm exam contributes 20% to the course average. There will be no make-up midterm exam.
  - **Final exam.** The final exam contributes 30% to the course average. There will be no make-up final exam.

  Grading Scheme: 35% class/homework, 5% quizzes, 20% midterm, 10% project, 30% final

- Your final grade is determined according to the following table:

Course performance:	88-100	75-87	62-74	50-61	below 50
Final Grade:	A	B	C	D	F

UAB Policies and Resources

- Non-Academic Student Code of Conduct (`https://www.uab.edu/students/conduct/`)

- DSS Accessibility Statement
  Accessible Learning: 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(205) 934-4205, visit (`https://www.uab.edu/students/disability/`), or their office located in Hill Student Center Suite 409.

- Title IX Statement
  In accordance with Title IX, the University of Alabama at Birmingham does not discriminate on the basis of gender in any of its programs or services. The University is committed to providing an environment free from discrimination based on gender and expects individuals who live, work, teach, and study within this community to contribute positively to the environment and to refrain from behaviors that threaten the freedom or respect that every member of our community deserves. For more information about Title IX, policy, reporting, protections, resources, and supports, please visit the UAB Title IX webpage (`https://www.uab.edu/titleix/`).

Academic Honor Code

The purpose of the University of Alabama at Birmingham ("University") student conduct process is to support the vision, mission, and shared values of the University and the tenets of the University's creed, The Blazer Way. Through a student-focused and learning-centered lens, the process strives to uphold individual and community standards; foster an environment of personal accountability for decisions; promote personal growth and development of life skills; and care for the well-being, health, safety, and property of all members of the University community.

The Student Conduct Code ("Code", `https://www.uab.edu/students/accountability/policies/student-conduct-code`) describes the standards of behavior for all students and student organizations and outlines students' rights and the process for adjudicating alleged violations. It is set forth in writing in order to give general notice of non-academic prohibited conduct. The Code should be read broadly and is not designed to define non-academic conduct in exhaustive terms. All students and student organizations are expected to conduct themselves in accordance with the Code. The current version of the Code, which may be revised periodically, is available from the Office of Community Standards & Student Accountability.

Shared Values Statement

Collaboration, integrity, respect, and excellence are core values of our institution and affirm what it means to be a UAB community member. A key foundation of UAB is diversity. At UAB, everybody counts every day. UAB is committed to fostering a respectful, accessible, and open campus environment. We value every member of our campus and the richly different perspectives, characteristics, and life experiences that contribute to UAB's unique environment. UAB values and cultivates access, engagement, and opportunity in our research, learning, clinical, and work

environments. CAS aims to create an open and welcoming environment and to support the success of all UAB community members.

Non-harassment, Non-hostile Work/Class Environment

The UAB's College of Arts and Sciences expects students to treat fellow students, their Course Instructors, other UAB faculty, and staff as adults and with respect. No form of hostile environment or harassment will be tolerated by any student or employee.