# COURSE DESCRIPTION
# INTRO TO LINEAR ALGEBRA
# MA 260-2B
# FALL 2021

DEPARTMENT OF MATHEMATICS
UNIVERSITY OF ALABAMA AT BIRMINGHAM

**Course Instructor:** Dr. Carmeliza Navasca
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**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). Include course number in the subject line of your email for a faster response. I am available to meet with you virtually via Zoom by appointment during my virtual office hours (see below for my scheduled virtual office hours).
**Office Hours:** TBA

## Course Info

**Meeting times:** Tue/Thu, 9:30-10:45 AM
**Meeting location:** HHB 221
**Required Textbook:** *Elementary Linear Algebra, Applications Version* 12th Edition by Howard Anton and Chris Rorres, 2014, Sections: 1.1-1.8, 2.1-2.3, 3.1-3.3, 4.1-4.6, 5.1-5.2, 7.1-7.2

## Important Dates

**First day of our class:** August 24, 2021
**Labor Day Holiday:** September 6, 2021
**Last day to drop without paying full tuition:** August 30, 2021
**Fall and Thanksgiving Break:** November 22–November 28, 2021
**Last day of our class:** December 2, 2021
**Midterm Dates:** October 5, 2021 and November 16, 2021
**Final Exam Date: Thursday**, December 9, 2021

## 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 24, 2021.

## Course Description

linear systems, gaussian elimination, determinants, vector spaces, eigenvalues and eigenvectors, diagonalization, singular value decomposition, and applications in image compression, graph theory, population dynamics and computer graphics

## Course Content

- Linear Equations: Gaussian Elimination
- Matrices: Matrix Operations and Properties, Invertible Matrices and Inverses
- Determinants: Cofactor Expansion, row Reduction, Cramers Rule
- Euclidean Vector Spaces: Vectors, Norm, Dot Product and Distance, Orthogonality
- General Vector Space: Real Vector Spaces, Subspaces, Linear Independence, Basis, Dimension
- Eigenvalues and Eigenvectors
- Diagonalization: Symmetric Matrices, Orthogonal Diagonalization
- Selected Additional Topics: Singular Value Decomposition and Applications in Image Analysis, Graph Theory, Biology

## 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.** Class activity will be due weekly. There will be no extension of deadlines for any reason. Class activity contributes 5% 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
  - **Midterm exam.** There will be two midterm exam. Each midterm exam contributes 17.5% to the course average.
  - **Final exam.** The final exam contributes 30% to the course average.

  Grading Scheme: 25% class activity/hw, 35% midterm exams, 10% project, 30% final exam

- 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 |

## Masking Requirements

Mask-wearing has proven to be one of the most successful mitigation strategies used to combat spread of the various variants of the COVID-19 virus. UAB requires face coverings indoors on campusregardless of vaccine status. Students who do not follow this requirement can be reported to Student Conduct.

Students will be asked to wear a face covering and if the student is noncompliant, the student will be asked to leave the classroom/lab. As a last resort, class will be dismissed if a student refuses to wear a face covering.

We strongly urge you to be fully vaccinated. Here is information on the safety of vaccines and on how to get vaccinated at UAB (`https://www.uab.edu/uabunited/covid-19-vaccine`). There you will find incentives for getting vaccinated.

## Academic Honor Code

The University of Alabama at Birmingham expects all members of its academic community to function according to the highest ethical and professional standards.

Academic misconduct undermines the purpose of education. Such behavior is a serious violation of the trust that must exist among faculty and students for a university to nurture intellectual growth and development. Academic dishonesty and misconduct includes, but is not limited to, acts of abetting, cheating, plagiarism, fabrication, and misrepresentation.

It will be important that you review and become familiar with the Universitys Academic Integrity Code (`https://www.uab.edu/faculty/resources/academic-integrity-code`)

## Non-harassment, Hostile Work/Class Environment

The UAB 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.