

# FARMINGDALE STATE COLLEGE

## STATE UNIVERSITY OF NEW YORK

### Course Outline Spring 2024

### MTH 245 – Linear Algebra

Instructor: Dr. Loucas Chrysafi

Office Hours: Mon: 3-4pm, Tue: 10-11am, Wed: 9-10am, Thu: 9-11am

**Office:** Whitman 184

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Text: Linear Algebra and its Applications

Authors: Lay, Lay and McDonald (free PDF online)

### COURSE DESCRIPTION:

A study of the basic properties of vectors and vector spaces; linear transformations and matrices; matrix representations of transformations; Eigenvalues and Eigenvectors of linear transformations; similarity of matrices, selected applications.

### Course Learning Outcomes

At the conclusion of this course, the student should be able to:

- Demonstrate mastery of finite vector spaces and linear transformations
- Apply linear algebra to solve real world problems

- Demonstrate proficiency of matrix algebra
- Use technology to solve problems involving linear algebra
- Use eigenvalues and eigenvectors to model real phenomena

**Topics:**

- Linear Equations and Systems
- Solving Systems of Linear Equations
- Vector and Matrix Operations
- Spanning, Vector Equation and Matrix Equation
- Homogeneous Systems and Independence
- Dynamical Systems of Linear Equations
- Linear Transformations
- Applications of Linear Transformations
- Inverses
- Determinants
- Bases, Column Space and Null Space
- Coordinate Systems
- Eigenvalues and Eigenvectors
- Diagonalization
- Applications of Eigenvalues and Eigenvectors

## GRADING GUIDELINES

- A **cumulative** final exam will be on **Thursday May 9**, 4-6:40pm and counts **60%** of your grade.
- The highest score of two exams, **February 29** & **April 18**, will count **40%** of your grade.
- Bonus points towards the final exam may be earned by eligible students. Details to be provided in class.

## NO MAKE-UP EXAMS

### Students with Disabilities:

Students seeking accommodations due to disabilities are encouraged to talk to me privately and contact the Office of Support Services for Students with Disabilities at (934)420-2411 or (934) 420-2413 to establish eligibility.

### Academic Integrity Policy

Because intellectual honesty is a cornerstone of all academic and scholarly work, each member of the Farmingdale State College campus community is expected to maintain academic integrity. Farmingdale State College has developed regulations concerning academic dishonesty and integrity to protect all students and to maintain an ethical academic environment. For more information, click

<http://www.farmingdale.edu/administration/provost/pdf/academic-integrity.pdf>)

## Important Information

Campus Mental Health Services (CMHS) provides both short- and long-term treatment for anxiety, mood disorders, acute and chronic stress disorders, and other emotional or behavioral problems that may adversely impact students' functioning. Additionally, CMHS is available 24/7 for students who may be in crisis. You are encouraged to contact CMHS either at (934) 420-2006 or at [cmhs@farmingdale.edu](mailto:cmhs@farmingdale.edu) if you are having difficulties in the above areas. We are also available for consultation to help you determine whether or not services may be helpful.

## Farmingdale Grading System

The college uses the following breakdown for reporting final grades.

A	Minimum of 93
A-	Minimum of 90
B+	Minimum of 87
B	Minimum of 83
B-	Minimum of 80
C+	Minimum of 77
C	Minimum of 73
C-	Minimum of 70
D+	Minimum of 67
D	Minimum of 60
F	Below 60