



# Linear Algebra

MAT 210 – Wesleyan College

Syllabus

Summer 2024, July 1 - August 2

## Professor Contact Information

**Professor:** TBA

**Office Hours:** by appointment

**Contact Information:** TBA

**Text/ISBN:** *Linear Algebra and Its Applications*, 6th Edition, David C. Lay. ISBN: 9780135851159

\*You will need to purchase an access code for MyMathLab. This comes with an e-book, so it is optional to purchase the physical textbook.

## Policies and Procedures

### Course Goals

To introduce the elements of linear algebra. To apply the theory of matrices to solve appropriate problems, including systems of linear equations.

### Prerequisites

MAT 205 Calculus I

### Credit Hours

3

### Participation and Grading

Your grade in this course will be determined by your performance in the following categories:

Assignments	Percentage
Participation	5%
Homework (MyMathLab)	10%
Quizzes (Top 8 out of 9)	20%
Exam 1 (Weeks 1 and 2)	20%
Exam 2 (Weeks 3 and 4)	20%
Final Exam (Cumulative)	25%
<b>Total</b>	<b>100%</b>



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### **Grading Scale:**

The grading scale in the class will be as follows:

A=90-100%

B=80-89%

C=70-79%

D=60-69%

F=59% And Below

### **Academic Integrity**

Wesleyan's College expects student to show integrity in all their work. Cheating, plagiarism, unauthorized collaboration, inventing or falsifying information, turning in work for more than one class without authorization, or helping someone else are all violations of the Honor Code and are not tolerated. Any of these forms of cheating will not be tolerated and will be grounds for a grade of zero on the exam or assignment and a grade of F for the course, in addition to any penalties imposed by the Provost.

### **Civility in the Academic Community**

Students, faculty, and staff are expected to treat one another with respect in all interactions. In the classroom, rude, disruptive and/or disrespectful behaviors as determined by a faculty member interfere with other students' rights and with the instructor's ability to teach. Therefore, any student exhibiting unacceptable behaviors during a class will be asked to leave and will be counted absent for that class period. Failure to cooperate with this process will result in disciplinary action that may include withdrawal from the class or dismissal from the College. Violations will be reported to the Provost's Office.

### **Disabilities Statement**

Wesleyan College is committed to equal education, full participation and access to facilities for all students. Any student who requires reasonable academic accommodations, use of auxiliary aids or facility access for a class must first register with Disability Resources by contacting Jill Amos, Director of Disability and Advocacy Services, [jamos@wesleyancollege.edu](mailto:jamos@wesleyancollege.edu) or (478) 757-5219. If reasonable accommodations are established, students should request Accommodation Letters from Disability Resources then schedule an appointment to meet with the professor to determine how the accommodations will be implemented for each class as early in the semester as possible. Accommodations require advance notice to implement and will not be retroactively administered for the semester. Accommodations that decrease the integrity of a course will not be approved.

### **Potential Changes to Course Schedule**

The following week-to-week schedule is a general plan for the course. Deviations may be necessary and will be announced in advance via announcement and/or e-mail. Students should check their course site announcements and emails at least once every twenty-four hours throughout the term to watch for updates regarding this course.

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## Course Schedule

Week	Section
1	1.1: Systems of Linear Equations
	1.2: Row Reduction and Echelon Forms
	1.3: Vector Equations
	1.4: The Matrix Equation $Ax = b$
	1.5: Solution Sets of Linear Systems
	1.7: Linear Independence
	1.8: Introduction to Linear Transformations
	1.9: The Matrix of a Linear Transformation
2	2.1: Matrix Operations
	2.2: The Inverse of a Matrix
	2.3: Characteristics of Invertible Matrices
	2.5: Matrix Factorizations
	2.8: Subspaces of $\mathbb{R}^n$
	2.9: Dimension and Rank
	3.1: Introduction to Determinants
	3.2: Properties of Determinants
	3.3: Cramer's Rule, Area, and Linear Transformations
	<b>Exam 1 (Weeks 1 - 2)</b>
3	4.1: Vector Spaces and Subspaces
	4.2: Null Spaces, Column Spaces, and Linear Transformations
	4.3: Linearly Independent Sets; Bases
	4.5: The Dimensions of a Vector Space
	4.6: Rank
	4.7: Change of Bases
4	5.1: Eigenvectors and Eigenvalues
	5.2: The Characteristic Equation
	5.3: Diagonalization
	5.4: Eigenvectors and Linear Transformations
	5.5: Complex Eigenvalues
	<b>Exam 2 (Weeks 3 - 4)</b>
5	6.1: Inner Product, Length, & Orthogonality
	6.2: Orthogonal Sets
	6.3: Orthogonal Projections
	6.4: The Gram-Schmidt Process
	<b>Final Exam (Cumulative)</b>