Math 2210Q sections 10 and 13 Fall 2019
Applied Linear Algebra

Instructor: Ambar Sengupta
E-mail: Please email through HuskyCT
Office: MONT 220
Office Hours: By appointment.

Educational Resources: The book *Linear Algebra and Its Applications* will be used as a reference. We will also use online resources and material posted through HuskyCT.

Course Description:
Linear Algebra is a fundamental topic in mathematics with widespread applications, from quantum mechanics to economics and data science. We will study vector spaces and linear transformations, using which systems of equations can be analyzed and solved. Both the theoretical ideas and practical technical tools will be studied.

Prerequisites: The essential prerequisite is algebra.

Homework/Quizzes/Assignments: We expect to have weekly assignments/quizzes, some which will be online. Late homework may not be graded.

Performance evaluation: Your grade will be determined from your performance in the online and in-class quizzes, assignments, and examinations. There will be no final examination.

Grade structuring:

Quizzes/Assignments	approximately once a week	70%
Exam 1	9/19	10%
Exam 2	10/15	10%
Exam 3	11/19	10%

Grades:
The following table is a tentative guide to the grading scheme.

Grade	Percentage Score
A	100-93.00
A-	92.99-90.00
B+	89.99-87.00
B	86.99-83.00
B-	82.99-80.00
C+	79.99-77.00
C	76.99-73.00
C-	72.99-70.00
D+	69.99-67.00
D	66.99-63.00
D-	62.99-60.00
F	59.99-0

Academic Integrity:

Integrity is a crucial part of the academic experience. You must observe the University's Academic Integrity Policy as found in the Student Handbook. Cheating can result in one or more of the following: a score of zero on the assignment; a grade of F in the course; expulsion from the university and/or any subsidiary programs.

Important university policies: `http://provost.uconn.edu/syllabi-references/`

Tentative Schedule:

The following table shows a very rough **tentative** plan/schedule of topics, just to get a general idea. We will not always follow the textbook, so please don't interpret this table too literally.

Week	**Date**	**Topic**
1	8/27	Linear Equations and Systems, 1.1
	8/29	Vectors, Matrices, Row Reduction, Echelon Forms, 1.2 , 1.3
2	9/3	Matrix Equations, 1.4
	9/5	Solving systems, 1.5
3	9/10	Linear independence, Linear maps, 1.7, 1.8
	9/12	Matrix of a Linear Transformation, 1.9
4	9/17	Matrix Operations and Inverses, 2.1
	9/19	**Exam 1**
5	9/24	Trace and Determinant, 3.1, 3.2
	9/26	Determinant properties, Volume, 3.3
	10/1	Inverse of a Matrix
	10/3	Topics
6	10/8	Vector spaces and subspaces, 4.1
	10/10	Kernel and Range, 4.2
7	10/15	**Exam 2**
	10/17	Linear independence, basis, 4.3
8	10/22	Dimension, Rank, 4.6, 4.7
	10/24	Eigenvectors and eigenvalues, 5.1
9	10/29	Characteristic polynomial, 5.2
	10/31	
10	11/5	Diagonalization, 5.3
	11/7	Orthogonal projections, 6.3
11	11/12	Gram-Schmidt process, 6.4
	11/14	Topics
12	11/19	**Exam 3**
	11/21	Topics
	12/3	Topics
	12/5	Graded in-class activity