

640:250 Introduction to Linear Algebra (Sections C1 and 04)

Text: Spence, Insel & Friedberg *Elementary Linear Algebra: A Matrix Approach, 2nd Edition*
 ISBN # 978-0-13-187141-0, Prentice-Hall, Upper Saddle River, NJ 07458

Syllabus

Date	Lecture	Assignment	Reading	Topics
23-Jan	1		1.1 ,1.2	Matrices, Vectors and Linear Combinations
28-Jan	2		1.3	Systems of Linear Equations
30-Jan	3	HQ1	1.4	Gaussian Elimination
4-Feb	4	ML1	1.6	Span of a Set of Vectors
6-Feb	5	HQ2	1.7	Linear Dependence and Linear Independence
11-Feb	6		2.1	Matrix Algebra
13-Feb	7	HQ3	2.3 App. E	Invertibility, Uniqueness of RREF
18-Feb	8	ML2	2.4, 2.5	Inverse, Block Multiplication
20-Feb	9	HQ4	2.6	<i>LU</i> Decomposition of a Matrix
25-Feb	10		3.1	Determinants; Cofactor Expansions
27-Feb	11	HQ5	3.2	Properties of Determinants
3-Mar	12			Midterm 1
5-Mar	13	HQ6	4.1	Subspaces
10-Mar	14	ML3	4.2	Basis and Dimension
12-Mar	15	HQ7	4.3	Column Space and Null Space of a Matrix
17-Mar				Spring break
19-Mar				Spring break
24-Mar	16		5.1	Eigenvalues and Eigenvectors
26-Mar	17	HQ8	5.2	Characteristic Polynomial
31-Mar	18	ML4	5.3	Diagonalization of a Matrix
2-Apr	19	HQ9	5.5	Examples of Diagonalization
7-Apr	20			Midterm 2
9-Apr	21	HQ10	6.1	Geometry of Vectors; Projection onto a Line
14-Apr	22	ML5	6.2	Orthogonal Sets of Vectors
16-Apr	23	HQ11	6.3	Orthogonal Projection; Orthogonal Complements
21-Apr	24		6.4	Least Squares; Normal Equations
23-Apr	25	HQ12	6.5	Orthogonal Matrices
28-Apr	26	ML6	6.6	Diagonalization of Quadratic Forms
30-Apr	27	HQ13	6.7	Singular Value Decomposition
5-May	28			Catch up and review
13-May		12-3 pm		C1 Final Exam
14-May		12-3 pm		04 Final Exam

(Assignment: HQ= Homework due + in-class Quiz, ML=Matlab due for sec C1)