

**Textbook:** Elementary Linear Algebra, by H. Anton (10<sup>th</sup> Ed.), John Wiley & Sons, Inc.

Lesson	Topics
1	Introduction to Linear Systems
2	Gaussian Elimination
3	Matrix & its Operation
4	Inverse Matrix, Method for finding Inverse Matrix
5	Diagonal, Triangular & Symmetric Matrices
6	Determinants
7	Properties of Determinants
8	Cofactors & Cramer's Rule
9	Vectors in 2-Space, 3-Space, and n-Space
10	Norm, Dot Product, and distance
11	Angle & Orthogonality
12	Cross Product
13	Review #1
14	Test #1
15	Linear Vector Spaces
16	Subspaces
17	Basis & Dimension
18	Change of Basis
19	Row & Column Spaces
20	Rank & Nullity
21	Eigenvalues & Eigenvectors
22	Diagonalization
23	Complex Vector Spaces
24	Review #2
25	Test #2
26	Inner Product
27	Gram-Schmidt Process
28	Orthogonal Matrices
29	Orthogonal Diagonalization
30	Hermitian, Unitary, and Normal Matrices
31	General Linear Transformations, Isomorphism
32	Kernel & Range
33	Compositions and Inverse Linear Transformations
34	Geometry of Linear Operators
35	Review #3
36	Test #3
37	Applications to Banach Spaces
38	Review for Final Exam
39	Final Exam

**References:**

Linear Algebra With Applications, by O. Bretscher (2nd Ed.)

Linear Algebra, Ideas and Applications, by R. Penney