

DEPARTMENT OF MATHEMATICS SYLLABUS

Course # & Name: MAT 22A: Linear Algebra

Recommended Text(s) & Price: Introductory Linear Algebra: An Applied First Course, 8th Edition by Kolman/Hill (\$114.00)

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Lecture(s)	Sections	Comments/Topics
1	1.1 and 1.2	Linear System and Matrices
2	1.3 and 1.4	Dot product and Matrix Multiplication, Properties of Matrix Operations
3	1.5	Matrix Transformations
4	1.6	Solutions of Linear System of Equations (LAB 1 is due)
5	1.7	The Inverse of a Matrix and Elementary Matrices (LAB 2 is due)
6	1.8	LU decomposition
7	3.1	Definition and properties of Determinants
8	3.2	Cofactor expansion and application, elementary matrices and Determinants (handout) (LAB 3 is due)
9	4.1 and 4.2	Vectors in the Plane, n-vector
10	4.3	Introduction to Linear Transformations
11	6.1	Vector spaces (LAB 4 is due)
12	6.2	Subspaces
13	8.1	Eigenvalues and Eigenvectors
14	6.3	Linear Independence (LAB 5 is due)
15	6.4	Basis and Dimension
16	6.5	Homogeneous Systems
17	8.2	Diagonalization (LAB 6 is due)
18	6.8	Orthonormal Bases in \mathbb{R}^n
19	8.3	Diagonalization of Symmetric Matrices
20	6.6	The Rank of a Matrix and Application (LAB 7 is due)
21	10.1	Definition and Examples of Linear Transformations and Matrices
22	10.2	The Kernel and Range of a Linear Transformation
23	6.7	Coordinates and Change of Basis (LAB 8 is due)
24	10.3	The Matrix of a Linear Transformation
25	*6.9	Orthogonal Complements
26	*7.2	Least Squares (LAB 9 is due)

Additional Notes:

* Optional topics should be covered if time permits.