Tentative syllabus MAT22A, Winter 2000. Section 1, Bruno Nachtergaele.

Text: B. Kolman, 6th edition, "Introductory linear algebra with applications"

Lecture number	Topic(s) note that some topics return	Section(s) in Kolman
1	Linear systems and matrices, 2x2 matrices as linear transformations of the plane, geometric interpretation of solutions of linear systems	1.1, 1.2 3.1, 3.3 1.1
2	R^1, R^2, R^3, R^n, linear maps and matrix of a linear map R^n to R^m, matrix multiplication, dot product	3.1, 3.2 1.3
3	Vector Sapces I Matrix operations dot product and properties	4.1 1.4 3.3
4	Solving linear systems, Gaussian elimination, Gauss-Jordan reduction	 1.5
5	LU factorization	9.3
6	The inverse of a matrix or linear transformation	1.6
7	The determinant	2.1
8	Cofactor expansion, Cramer’s rule	2.2
9	Vector Spaces II Subspaces, lines, planes, hyperplanes, linear span	4.1 4.2, 3.6
10	Linear independence,	4.3
11	Basis, dimension	4.4
12	Linear maps and transformations, null space, range matrix of linear map, standard matrix	3.3, 4.2
13	Homogeneous systems, nullity, rank	4.5
14	Nonhomogenous systems, review of linear systems	4.6
15	Applications and review	

16	Applications and review	
------midterm material ends here ---------		
17	Complex numbers, the complex plane	A.1
18	Complex numbers, Euler formula	additional notes
19	Coordinates and change of basis	4.7
20	Orthonormal basis in R^n, Gram-Schmidt	4.8
21	Orthogonal complements, direct sum, projections	4.9
22	Eigenvalues and eigenvectors	5.1
23	Diagonalization	5.1, 5.2
24	Linear transformations and their matrices	6.1, 6.2
25	Kernel and Range of linear transformations Change of basis	6.2 6.3
26	Orthogonal transformations	5.2 additional notes
27	Numerical diagonalization	9.5
28	Applications and review	
29	Applications and review	