

SES #	TOPICS	READINGS IN 4TH EDITION	READINGS IN 5TH EDITION
1	The geometry of linear equations	1.1-2.1	1.1-2.1
2	Elimination with matrices	2.2-2.3	2.2-2.3
3	Matrix operations and inverses	2.4-2.5	2.4-2.5
4	LU and LDU factorization	2.6	2.6
5	Transposes and permutations	2.7	2.7
6	Vector spaces and subspaces	3.1	3.1
7	The nullspace: Solving $Ax = 0$	3.2	3.2
8	Rectangular $PA = LU$ and $Ax = b$	3.3-3.4	3.3
9	Row reduced echelon form	3.3-3.4	3.3
10	Basis and dimension	3.5	3.4
11	The four fundamental subspaces	3.6	3.5
12	Exam 1: Chapters 1 to 3.4		
13	Graphs and networks	8.2	3.5, 10.1
14	Orthogonality	4.1	4.1
15	Projections and subspaces	4.2	4.2

16	Least squares approximations	4.3	4.3
17	Gram-Schmidt and $A = QR$	4.4	4.4
18	Properties of determinants	5.1	5.1
19	Formulas for determinants	5.2	5.2
20	Applications of determinants	5.3	5.3
21	Eigenvalues and eigenvectors	6.1	6.1
22	Diagonalization	6.2	6.2
23	Markov matrices	8.3	10.3
24	<i>Review for exam 2</i>		
25	Exam 2: Chapters 1-5, 6.1-6.2, 8.2		
26	Differential equations	6.3	6.3
27	Symmetric matrices	6.4	6.4
28	Positive definite matrices	6.5	6.5
29	Matrices in engineering	8.1	10.2
30	Similar matrices	6.6	6.2
31	Singular value decomposition	6.7	7.1-7.2
32	Fourier series, FFT, complex matrices	8.5, 10.2-10.3	10.5, 9.2-9.3
33	Linear transformations	7.1-7.2	8.1-8.2

34	Choice of basis	7.3	8.3
35	Linear programming	8.4	10.4
36	<i>Course review</i>		
37	Exam 3: Chapters 1-8 (8.1, 2, 3, 5)		
38	Numerical linear algebra	9.1-9.3	11.1-11.3
39	Computational science	See the Web site for 18.085	
40	Final exam		