SES #	TOPICS	KEY DATES
1	The geometry of linear equations	
2	Elimination with matrices	
3	Matrix operations and inverses	
4	*LU* and *LDU* factorization	
5	Transposes and permutations	Problem set 1 due
6	Vector spaces and subspaces	
7	The nullspace: Solving Ax = 0	
8	Rectangular *PA* = *LU* and Ax = b	Problem set 2 due
9	Row reduced echelon form	
10	Basis and dimension	
11	The four fundamental subspaces	Problem set 3 due
12	Exam 1: Chapters 1 to 3.4	
13	Graphs and networks	
14	Orthogonality	Problem set 4 due
15	Projections and subspaces	
16	Least squares approximations	
17	Gram-Schmidt and *A* = *QR*	Problem set 5 due
18	Properties of determinants	
19	Formulas for determinants	
20	Applications of determinants	Problem set 6 due
21	Eigenvalues and eigenvectors	
22	Diagonalization	
23	Markov matrices	Problem set 7 due

24	*Review for exam 2*	
25	Exam 2: Chapters 1-5, 6.1-6.2, 8.2	
26	Differential equations	
27	Symmetric matrices	
28	Positive definite matrices	
29	Matrices in engineering	Problem set 8 due
30	Similar matrices	
31	Singular value decomposition	Problem set 9 due
32	Fourier series, FFT, complex matrices	
33	Linear transformations	
34	Choice of basis	Problem set 10 due
35	Linear programming	
36	*Course review*	
37	Exam 3: Chapters 1-8 (8.1, 2, 3, 5)	
38	Numerical linear algebra	
39	Computational science	
40	Final exam	