Lecture	Main subject (Title)	Sections Lay	Pre-lecture exercises	Lecture exercises (what is not finished during the lecture is homework)	Post-lecture exercises	Extra post-lecture exercises (challenging)
1	Introduction and linear equations	1.1, 1.2 (up to "Solutions of Linear Systems")	1.1: 2, 3	1.1: 1, 9 ,13 1.2: 3, 13	1.1: 6, 7, 13, 15, 17, 21, 22 1.2: 2, 3, 9, 14	1.1: 25
2	Vector equations and spans	1.2 (from "Solutions of Linear Systems"), 1.3	1.3: 3, 6	1.2: 11, 16, 17, 30 1.3: 5, 13	1.2: 12, 15, 22, 23, 26 1.3: 9, 11, 15, 17, 24, 26	
3	Matrix-vector product and solution sets	1.4, 1.5	1.4: 3, 7	1.4: 15, 21 1.5: 5, 11, 34	1.4: 6, 9, 11, 17, 19, 22, 24 1.5: 1, 11, 13, 15, 23, 26, 30	1.5: 33, 35
4	Linear independence and transformations	1.7, 1.8	1.7: 1, 2, 3	1.7: 5, 11, 21 1.8: 2, 5, 15, 20, 24	1.7: 7, 13, 17, 23, 25, 31, 35 1.8: 6, 8, 11, 13, 14	
5	Matrix of linear transformations	1.9	1.8: 2, 3	1.9: 7, 15, 17	1.8: 17, 21, 31, 36 1.9: 2, 4, 8, 12, 17, 20, 23, 29	
6	Matrix operations	2.1	2.1: 1, 5	2.1: 10, 11, 21, 23, 27	2.1: 5, 7, 9, 13, 15, 27	
7	Inverse matrices	2.2, 2.3	2.2: 3, 6	2.2: 1, 5, 31 2.3: 3, 15, 27	2.2: 7, 9, 13, 17, 33, 35, 37 2.3: 6, 7, 11, 17, 21, 23, 34	2.3: 31
8	Subspaces	2.8, 2.9 (up to "Rank and the Invertible Matrix Theorem")	2.8: 1, 3, 5	2.8: 7, 17, 25 2.9: 5, 9	2.8: 5, 9, 11, 13, 19, 21, 25, 29, 31, 34 2.9: 8, 11, 13, 15	
9	Coordinates and LU factorization	2.9 (from "Rank and the Invertible Matrix Theorem"), 2.5	2.9: 1, 5	2.9: 20 2.5: 3, 9	2.9: 17, 23, 24 2.5: 6, 13, 15, 19	2.9: 27 2.5: 25
10	Determinants part 1	3.1, 3.2 (up to and including Theorem 4)	3.1: 1,5	3.1: 7, 13, 27, 37 3.2: 9, 13, 21	3.1: 3, 9, 14, 20, 23, 32, 39 3.2: 3, 7, 12	3.1: 41
11	Determinants part 2	3.2 (from "Column operations"), 3.3	3.3: 3,5	3.2: 29, 34 3.3: 1, 19, 29,11	3.2: 19, 25, 27, 32, 35 3.3: 7, 21, 23, 27	3.3: 18, 30, 32
12	Eigenvalues and Eigenvectors	5.1	5.1: 1, 5	5.1: 6, 15, 20	5.1: 3, 8, 16, 17, 19, 21, 22, 27	5.1: 26, 29
13	Characteristic equation and similarity	5.2	5.2: 1, 9	5.2: 7, 11, 18	5.2: 3, 10, 17, 21, 22, 25	5.2: 19, 23, 27
14	Diagonalization	5.3	5.3: 2, 7	5.3: 5, 9, 17, 23	5.3: 1, 6, 11, 18, 21, 22, 27	5.3: 28, 30, 31, 32
15	Change of basis	4.4, 5.4	4.4: 9, 21	4.4: 10, 18 5.4: 11, 15, 23	4.4: 7, 11, 12, 16, 17, 22 5.4: 12, 13, 17, 18, 20, 22	5.4: 21, 24, 25
16	Complex eigenvalues	5.5	5.5: 1, 2, 6	5.5: 3, 9, 15	5.5: 5, 7, 13, 15, 21, 26	5.5: 23, 24
17	Inner product and orthogonality	6.1	6.1: 10, 13, 15	6.1: 11, 18, 23	6.1: 9, 14, 17, 19, 20, 26	6.1: 25, 31
18	Orthogonal set, basis and matrix	6.2	6.2: 6, 8	6.2: 10, 13, 23	6.2: 5, 12, 15, 21, 24, 29	6.2: 26, 33, 34
19	Orthogonal projections	6.3	6.3: 1, 3	6.3: 2, 7, 11, 17	6.3: 4, 9, 15, 18, 19, 21, 22	6.3: 23, 24
20	The Gram-Schmidt process	6.4	6.4: 4, 7	6.4: 3, 9, 15	6.4: 2, 12, 14, 15, 17 5.2: 23	6.4: 18, 19, 20, 22, 23
21	Least-squares problems	6.5, 6.6	6.5: 1, 3	6.5: 2, 5, 15 6.6: 1, 4	6.5: 4, 6, 12, 16, 17, 18 6.6: 2, 3, 14	6.5: 19, 21, 22, 25 6.6: 15, 16