

Math 322 Linear (Matrix) Algebra and Its Applications

Algebra of matrices, the solutions of simultaneous linear equations, matrix factorizations, determinants, linear transformations, vector spaces over the reals, linear independence of vectors, basis of a vector space, eigenvectors, eigenvalues, characteristic equations, diagonalizations, Markov Chains, inner products, orthogonality, Gram-Schmidt process, and least-square problems.

Recommended Text:

Linear Algebra and Its Applications (3rd Edition)
by David C. Lay (Addison Wesley).

Recommended Sections of Book:

Chapter 1 Sections 1.1 - 1.5, 1.7 - 1.9

Chapter 2 Sections 2.1 - 2.3, 2.5

Chapter 3 Sections 3.1, 3.2

Chapter 4 Sections 4.1 - 4.7, 4.9

Chapter 5 Sections 5.1 - 5.3, 5.7

If time permits:

Chapter 6 Sections 6.1, 6.2, 6.4, 6.5

Math 322

Fall 2007

Linear Algebra and Its Applications

3rd ed., David C. Lay (Addison-Wesley)

Problem Assignments

- Section 1.1 (1,3,4,5,7,11,13,15,23,24,25)
1.2 (1,3,7,9,11,17,19,21,23,25,27)
1.3 (1,3,5,9,11,13,15,17,21,23,24)
1.4 (1,3,5,7,9,12,14,15,21,23,24,25)
1.5 (1,3,5,9,15,16,19,23,24,25,26)
1.7 (1,3,5,7,9,11,13,15,17,21,22)
1.8 (1,3,5,9,11,13,17,19,20,21,22,24,29)
1.9 (1,3,5,7,9,17,23,24,29,30,35)

2.1 (1,2,3,4,5,6,9,10,11,13,15,16,23,27,30)
2.2 (1,3,5,7,9,10,11,13,22,29,31,33)
2.3 (1,3,5,6,7,11,12,13,17,24,36,37)
2.5 (1,3,5,6,7,9,11,15,17,24)
2.8 (1,2,5,6,7,9,10,15,16,21,23,24,25,27)
2.9 (1,2,3,5,7,9,11,13,15,17,18,19)

3.1 (1,3,5,7,9,11,15,19,21,22,23,25,27)
3.2 (1,3,4,5,7,11,15,17,21,24,25,29,31,32)

4.1 (1,3,5,6,7,8,9,10,13,14,23,24,35,36)
4.2 (1,3,5,7,13,15,17,23,25,26,29,30,31,33,34,35)
4.3 (1,3,5,9,10,12,13,15,19,21,22,23,29,31,32,33)
4.4 (1,3,4,5,7,9,10,11,13,14,15,16,17,18,21,22,27,29)
4.5 (1,3,7,10,11,13,15,16,17,19,20,21,25,29)
4.6 (1,2,3,4,5,7,9,13,17,18)
4.7 (1,3,5,7,9,11,12,13,14)
4.9 (1,3,4,5,7,11)

5.1 (1,2,3,5,7,9,11,13,17,19,21,22,25,27)
5.2 (1,3,5,9,11,19,21,22,25)
5.3 (1,2,3,5,7,11,17,21,22,24,27,28)