

Ma322 Web Site Fall 2004

Suggested syllabus based on the Lay's book:

(Instructors may be using a different book or modified syllabus).

The text-book "Linear Algebra and its applications by David C. Lay".

Follow the syllabus suggested on page xvi of the instructors' edition. Specifically, cover the core sections:

1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7 (Quick introduction to the basic topics:

Solving linear equations using Gauss elimination, matrix form of the equations, nature of complete solution, linear independence, linear transformations).

2.1, 2.2, 2.3 (Matrix algebra including inverses).

4.1, 4.2, 4.3, 4.4, 4.5, 4.6 (Vector spaces, subspaces, linear independence and bases, dimension, coordinate vectors, rank of a matrix and its connection with various dimensions).

5.1, 5.2, 5.3 (Eigenvalues and eigenvectors, definition, properties, characteristic equation, connection with diagonalization).

6.1, 6.2, 6.3, 6.5 (Inner products, orthogonal sets and Gram-Schmidt process, applications to least squares).

7.1, 7.2 (Diagonalization of symmetric matrices and quadratic forms).

The above does not include determinants in Chapter 3, but some suitable treatment of determinants is highly recommended.

Add in at least 7 sections from the following:

1.8, 2.4, 2.5, 3.1, 3.2, 4.7, 5.4, 5.5, 6.4. (These are applications more advanced topics as well as omitted sections from above chapters. In general, suitable advanced topics of interest and utility to students should be included, as time permits.)

Further, choose suitable applications from Chapters 1,2,4,5.

Suggested exams: 2+final (none are uniform).

Other details of the grades should be determined and announced by individual instructors.
