

Syllabus

Mat 242: Elementary Linear Algebra, Fall 2006

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Text: *Elementary Linear Algebra*, C. H. Edwards Jr., D. E. Penney.

Homework: Homework will be collected every week (on Mondays) and 3 to 5 of the problems will be graded. No late homework will be accepted.

Tests: No make-up test will be given unless a student has notified the instructor before the test is given. There will be three tests:

Test 1 - 09/27/06 Test 2 - 10/25/06 Test 3 - 11/27/06
All tests will be given in the Testing Center (PSA 21).

Final: The final exam is on December 13th, 10:00-11:50 am.

Grading: Your final grade will be computed as follows: 20% - homework and quizzes, 45% - tests (15% each), 35% -final.

Important: It should be understood that all the rules on the syllabus concerning grading are approximate, dates of tests and schedule of material covered is tentative and is subject to change.

Tentative schedule:

M 8/21 **1.1** Introduction to Linear Systems
W 8/23 **1.2** Matrices and Gaussian Elimination

M 8/28 **1.3** Gauss-Jordan Elimination
W 8/30 **1.4** Matrix Operations

W 9/6 **1.5** Inverses of Matrices

M 9/11 **2.1** 2 x 2 Determinants
W 9/13 **2.1** 2 x 2 Determinants

M 9/18 **2.2** Higher-Order Determinants
W 9/20 **2.2** Higher-Order Determinants

M 9/25 **Review Test 1**
W 9/27 **Test 1 (Testing Center) 2.3** Determinants and Elementary Row Operations

M 10/2 **2.4** Cramer's Rule and Inverse Matrices
W 10/4 **4.1** The Vector Space \mathbf{R}^n and Subspaces

M 10/9 **4.2** Linear Combinations and Linear Independence
W 10/11 **4.3** Bases for Vector Spaces

M 10/16 **4.4** Row and Column Spaces
W 10/18 **4.4** (*continued*)

M 10/23 Review Test 2
W 10/25 Test 2 (Testing Center) 4.4 (continued)

M 10/30 5.1 Orthogonal Vectors in \mathbf{R}^n
W 11/01 5.2 Orthogonal Projections and Least Squares Solutions

M 11/6 5.2 (continued)
W 11/8 5.4 Orthogonal Bases and the Gram-Schmidt Algorithm

M 11/13 6.1 Introduction
W 11/15 6.1 (continued)

M 11/20 6.2 Diagonalization of Matrices
W 11/22 Review Test 1

M 11/27 Test 3 (Testing Center) 6.2 (continued)
W 11/29 7.1 Matrix Transformations

M 12/04 7.2 Properties of Linear Transformations

List of problems:

1.1 1,2,6,24,25
1.2 11,14,15,17,19,24,25,27,28
1.3 11,16,19,21,24,29
1.4 3,7,8,9,19,22,23,28
1.5 3,6,11,20,23,27,30,32
2.1 1,2,7,8
2.2 1,2,3,5,10,15,17,25,26
2.3 3,6,13,19,24,25,26
2.4 1,6,9,11,12,24
4.1 1-23 odd,4,16,25-28
4.2 9,14,18,19,21,23,25,27
4.3 1-15 odd,10,20,25
4.4 1,6,11,13,14,17,25
5.1 3,13,16,20,21,23,24
5.2 1,5,7,10,15,17,21,22
5.4 1,5,6,11,17,20,25
6.1 1,2,14,19,23, 26,27,28,30
6.2 1,4,16,17, 22,23,25,26
7.1 1,4,9,11,14,15
7.2 1,3,5,8,11,16,19