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Last update:  Tue Sep  5 10:52:43 MDT 2006
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               Math. 464/514, Fall'06 - Homework Assignments
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 Assignments based on G. Strang, LINEAR ALGEBRA AND ITS APPLICATIONS,
                      4th edition, ISBN 0-03-010567-6
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 1( 8/22) Sec. 1.2-1.4 Geometry and Gaussian elimination
 2( 8/24) Sec. 1.5 Elementary triangular factors
    Set 1 (due 8/31): p.9, 1.2(1,3,8,9), p.15, 1.3(11, 24, 30), p.26, 1.4(4,24)
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 3( 8/29) Sec. 1.6 Inverses
 4( 8/31) Sec. 2.1 Vector Spaces
          Sec. 2.2 mXn systems
    Set 2 (due 9/ 7):  p.39, 1.5(4,9,11,13,18),
                       p.52, 1.6(10,11),
                       P.65, 1.R(4,5,12,13,18)
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 5( 9/ 5) Sec. 2.3 Linear Independence, Basis, Dimension
 6( 9/ 7) Sec. 2.4 Fundamental subspaces
    Set 3 (due 9/14): p.69, 2.1(2,7,8)
                      p.77, 2.2(4,5,7,8)
                      p.87, 2.3(2,6,8,10)
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      Evolving below: old syllabus
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 Assignments based on G. Strang, LINEAR ALGEBRA AND ITS APPLICATIONS, 3rd Ed.
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 7( 9/12) Sec. 2.5 Network and Graph Theory
 8( 9/14) Sec. 3.1 Orthogonal subspaces
          Sec. 3.2 Inner products
    Set 4 (due 9/21): p. 99, 2.4(1,3,5,6,17,19)
                      p. 142, 3.1(7,9,12,16)
                      p. 150, 3.2(8,11)
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 9( 9/19) Sec. 3.3 Projection and Least Squares
10( 9/21)          ""   ""  ""              ; The Pseudoinverse
    Set 5 (due 9/28): p. 162, 3.3(3,6,11,12,15,18,19,20,24,25,26)
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11( 9/26) Sec. 3.4 Orthogonalization and the Gram-Schmidt process
12( 9/28) Sec. 3.6 Review of Factorizations.
    Set 6 (due 10/5):p. 180, 3.4(2,4,5,6,9,13,15,18,25)
                     p. 205, 3.6(8,17,20,22)
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13(10/ 3) QR
14(10/ 5) Review
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15(10/10) MIDTERM EXAM (Chapters 1-3)

**(10/12-13)  Fall Break
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16(10/17) Sec. 5.1 Eigenvalues and Eigenvectors
17(10/19) Sec. 5.2 Diagonal forms
          Sec. 5.3 Difference equations and A^k
    Set 7 (due 10/26) p. 251, 5.1(5,11,18)
                      p. 260, 5.2(4,6,8,10,13)
                      p. 272, 5.3(3,5,13,16)
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18(10/24) Sec. 5.4 Differential equations and exp(At)
                   Some results on determinants.
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19(10/26) Sec. 5.5 Complex Matrices
    Set 8 (due 11/ 2) p. 286, 5.4(1,4,5,14)
                      p. 301, 5.5(7,8,11,19)
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20(10/31) Complex matrices.
          Sec. 5.6 Similarity
21(11/ 2) Sec. 5.6 Similarity
          The Singular Value Decomposition
    Set 9 (due 11/9)p. 315, 5.6(4,7,24,25)
                  notes: (p.339,Ex.10.20),(p.340,Ex.10.21)
                     p.451, App.A (2,3,4,5)
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22(11/ 7) More on SVD
23(11/ 9) Sec. B  Generalized eigenspaces and the Jordan canonical form.
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24(11/14) More on generalized eigenspaces.

25(11/16) Sec. 6.1 Extrema and Quadratic Forms
          Sec. 6.2 Positive Definite Matrices
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26(11/21) Sec. 6.3 The law of Inertia
    Set 10 (due 11/30) p.328, 6.1(4,7), p.337,6.2(7,9,11,15,19)
                       p.345, 6.3(1,3,5,11), p.383, 6.4(8,11,6)

**(11/23-24) Thanksgiving Break
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 UNDER CONSTRUCTION below this point!...
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27(11/28) Sec. 6.4 The Rayleigh quotient
          Conditioning and other issues of matrix computations.
28(11/30) Sec. 8.1 Linear inequalities.  The simplex method.
      Set 12(mini: due 12/5)
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29(12/ 5) The theory of duality.
30(12/ 7) Network Models;  Game Theory.
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----------- Final Examination (Tuesday 12/14,  7:30-9:30 in DSH331)
                  (Open book)
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