

Syllabus for APMA 308, Spring 2008

Week (Date)	Reading and Problem Assignments
1 (Jan 16 - 18)	Section 1.1 Matrices and System of Linear Equations Section 7.1 Gaussian Elimination
2 (Jan 21 - 25) Jan 21- Martin Luther king day	Section 1.2 Gauss-Jordan Elimination Section 1.3 The Vector Space $\mathbf{R}^n$ → Hmwk # 1 and Web Work # 1 Due Jan 24
3 (Jan 28 – Feb 1)	Section 1.4 Basis and Dimension Section 1.5 Dot Product, Norm, Angle, and Distance Section 1.6 Curve Fitting, Electrical Network, and Traffic Flow → Hmwk # 2 Due Jan 28
4 (Feb 4 – 8)	Section 2.1 Addition , Scalar Multiplication, and Multiplication of Matrices Section 2.2 Properties of Matrix Operations Section 2.3 Symmetric Matrices and Seriation in Archaeology → Hmwk # 3 and Web Work #2 Due Feb 4
5 (Feb 11 – 15)	Section 2.4 The Inverse of a Matrix and Cryptography Section 2.5 Matrix Transformation, Rotation, and Dilation Section 7.2 The Method of LU Decomposition → Hmwk # 4 and Web Work # 3 Due Feb 11
6 (Feb 18 – 22)	Section 2.6 Linear Transformation, Graphics, and Fractals Section 2.8 Markov Chains, Population Movements, and Genetics Section 2.9 A communication Model and Group Relationships → Hmwk # 5 and Web Work # 4 Due Feb 18 (Reviews on Sunday and Monday Feb 24 and 25, 7-9 PM)
7 (Feb 25 – 29)	Section 3.1 Introduction to Determinant Section 3.2 Properties of Determinant Section 3.3 Determinants, Matrix Inverses, and System of Linear Equations → Hmwk # 6 Due Feb 25 Test # 1: 26 Feb 2008, Tuesday, 7-9 PM

8 (Mar 10 - 14) Mar 3-7 Spring Break	Section 3.4 Eigenvalues and Eigenvectors Section 3.5 Google, Demography, and Weather Prediction Section 5.3 Diagonalization of Matrices → Hmwk # 7 and Web Work # 5 Due March 10
9 (Mar 17 -21)	Section 5.4 Quadratic Forms, Difference Equations Section 4.1 General Vector Spaces and Subspaces Section 4.2 Linear Combination → Hmwk # 8 and Web Work # 6 Due March 17
10 (Mar 24 - 28)	Section 4.3 Linear Dependence and Independence Section 4.4 Properties of Bases Section 4.5 Rank → Hmwk # 9 and Web Work # 7 Due March 24
11 (Mar 31 – Apr 4)	Section 4.6 Orthonormal Vectors and Projections Section 6.4 Least Square Section 4.7 Kernel, Range and the Rank/Nullity Theorem → Hmwk # 10 and Web Work # 8 Due March 31 (Reviews on Sunday and Monday, April 6 and 7, 7-9 PM)
12 (Apr 7 – 11)	Section 4.8 One-to-One Transformations and Inverse Transformation Section 4.9 Transformations and System of Linear Equations → Hmwk # 11 and Web Work # 9 Due April 7 Test # 2: 8 April 2008, Tuesday, 7-9 PM
13 (Apr 14 - 18)	Section 5.1 Coordinate Vectors Section 5.2 Matrix Representation of Linear Transformation Section 6.1 Inner Product Spaces → Hmwk # 12 Due April 14
14 (Apr 21 – 25)	Section 6.3 Approximation of Functions and Coding Theory Section 7.3 Practical Difficulties in Solving Systems of Equations Make up class / revision → Hmwk # 13 and Web Work # 10 Due April 21
15 (Apr 28 – 29) Classes end on Apr 29	Make up/overview (Reviews on Tuesday and Wednesday, April 29 and 30, 7-9 PM)
	Final Exam: 1 May 2008, Thursday, 7-10 PM