Math 630, Spring 2012, Tentative Schedule:

Date	Section/Topic
M 1/30/12	First Day Handout; §1.1, 1.2 – Matrix Multiplication, Systems of Linear Equations
W 2/1/12	§1.4 – Cholesky Decomposition
M 2/6/12	§1.7 – Gaussian Elimination and the LU Decomposition
W 2/8/12	§1.8 – Gaussian Elimination with Pivoting
M 2/13/12	§2.1 – Vector and Matrix Norms
W 2/15/12	§2.2 – Condition Numbers
M 2/20/12	§2.3, 2.5 – Perturbing the Coefficient Matrix, Backward Stability
W 2/22/12	§2.7 – Backward Error Analysis of Gaussian Elimination
M 2/27/12	§3.1 – Discrete Least Squares Problem
W 2/29/12	§3.2 – Orthogonal Matrices, Rotators, and Reflectors
M 3/5/12	§3.4 – Gram-Schmidt Process
W 3/7/12	§3.3 – Solution of the Least Squares Problem
M 3/12/12	§4.1, 4.2 – Applications of the Singular Value Decomposition
W 3/14/12	**Midterm Exam (Chapters 1–4)**
M 3/19/12	**Spring Break**
W 3/21/12	**Spring Break**
M 3/26/12	4.3 – The SVD and Least Squares Problem
W 3/28/12	§5.1 – Systems of Differential Equations

Date	Section/Topic
M 4/2/12	§5.3 – The Power Method
W 4/4/12	§5.5 – Reduction to Hessenberg and Tridiagonal Forms
M 4/9/12	§5.6 – The QR Algorithm
W 4/11/12	§5.7 – Use of QR Algorithm to Calculate Eigenvectors
M 4/16/12	§6.4 – Eigenvalues of Large, Sparse Matrices (Lanczos/ Arnoldi)
W 4/18/12	§8.2 – The Classical Iterative Methods
M 4/23/12	§8.3 – Convergence of Iterative Methods
W 4/25/12	§8.7 – The Conjugate Gradient Method
M 4/30/12	§8.8 – Derivation of the CG Algorithm
W 5/2/12	§8.9 – Convergence of the CG Algorithm
M 5/7/12	§8.6 – Preconditioners
W 5/9/12	Review
M 5/14/12	**Final Exam**