Math 630, Spring 2009, Tentative Schedule:

Date	Section/Topic
M 1/26/09	First Day Handout; §1.1, 1.2 – Matrix Multiplication, Systems of Linear Equations
W 1/28/09	§1.4 – Cholesky Decomposition
M 2/2/09	§1.7 – Gaussian Elimination and the LU Decomposition
W 2/4/09	§1.8 – Gaussian Elimination with Pivoting
M 2/9/09	§2.1 – Vector and Matrix Norms
W 2/11/09	§2.2 – Condition Numbers
M 2/16/09	§2.3, 2.5 – Perturbing the Coefficient Matrix, Backward Stability
W 2/18/09	§2.7 – Backward Error Analysis of Gaussian Elimination
M 2/23/09	§3.1 – Discrete Least Squares Problem
W 2/25/09	§3.2 – Orthogonal Matrices, Rotators, and Reflectors
M 3/2/09	§3.4 – Gram-Schmidt Process
W 3/4/09	§3.3 – Solution of the Least Squares Problem
M 3/9/09	§4.1, 4.2 – Applications of the Singular Value Decomposition
W 3/11/09	**Midterm Exam (Chapters 1–4)**
M 3/16/09	**Spring Break**
W 3/18/09	**Spring Break**
M 3/23/09	4.3 – The SVD and Least Squares Problem
W 3/25/09	§5.1 – Systems of Differential Equations

Date	Section/Topic
M 3/30/09	§5.3 – The Power Method
W 4/1/09	§5.5 – Reduction to Hessenberg and Tridiagonal Forms
M 4/6/09	§5.6 – The QR Algorithm
W 4/8/09	§5.8 – Use of QR Algorithm to Calculate Eigenvectors
M 4/13/09	§6.3 – Eigenvalues of Large, Sparse Matrices (Lanczos/ Arnoldi)
W 4/15/09	§7.1 – A Model Problem
M 4/20/09	§7.2 – The Classical Iterative Methods
W 4/22/09	§7.3 – Convergence of Iterative Methods
M 4/27/09	§7.6 – The Conjugate Gradient Method
W 4/29/09	§7.7 – Derivation of the CG Algorithm
M 5/4/09	§7.8 – Convergence of the CG Algorithm
W 5/6/09	§7.5 – Preconditioners
M 5/11/09	Review
M 5/18/09	**Final Exam**