640:350:01: Linear Algebra
Course Syllabus (Tentative)

MTH2, SEC-220

Spring Semester 2009

Instructor: Zheng-Chao Han
Text: *S. H. Friedberg, A. J.Insel & L. E. Spence*, **Linear Algebra**, (4th edition); Prentice-Hall Inc. 2003; (ISBN# 0-13-008451-4).

Rough Schedule (Some changes are expected to occur as the class progresses. Please check the course webpage often for updated information.)

Lecture	**Reading**	**Topic**
1	1.1, 1.2, 1.3	Vector Spaces, Subspaces
2	1.4	Linear Combinations and Systems of Linear Equations
3	1.5	Linear Dependence and Linear Independence
4	1.6	Bases and Dimension
5	1.6, 2.1	Linear Transformations, Null Spaces, and Ranges
6	2.1, 2.2	The Matrix Representation of a Linear Transformation
7	2.2, 2.3	Composition of Linear Transformations and Matrix Multiplication
8	2.4	Invertibility and Isomorphisms
9	2.5	The Change of Coordinate Matrix
10		Catch up and review
11	First Midterm	
12	3.1 – 3.4	Summary review of chapter 3
13	3.1 – 3.4	Summary review of chapter 3
14	4.1 – 4.4	Summary review of chapter 4
15	4.1 – 4.4	Summary review of chapter 4
16	5.1, 5.2	Eigenvalues and Eigenvectors, Diagonalizability
17	5.3	Matrix Limits and Markov Chains (only Theorem 5.14)
18	5.4	Invariant Subspaces and the Cayley-Hamilton Theorem
19	7.1	Jordan Canonical Form I
20	7.1, 7.2	Jordan Canonical Form II
21		Catch up and review
22	Second Midterm	
23	6.1, 6.2	Inner Products and Norms, The Gram-Schmidt Orthogonalization Process and Orthogonal Complements
24	6.3, 6.4	The Adjoint of a Linear Operator, Normal and Self-Adjoint Operators
25	6.4, 6.5	Unitary and Orthogonal Operators and Their Matrices
26	6.5, 6.6	Orthogonal Projections and the Spectral Theorem
27	6.6	Catch up
28	Review	