Notes on Exam 4, Math 544, Fall 2006

1. Exam 4 is Tuesday, November 21 and it covers sections 3.4 – 3.7, 4.1 – 4.4.

2. Be able to define "basis", "dimension", "linear transformation", "eigenvalue", "eigenvector", and "orthogonal set".

3. Be able to state and use four theorems about dimension.

4. Be able to state and use the Non-singular Matrix Theorem. (I have also called this the Invertible Matrix Theorem.) This result consists of a huge number of equivalent statements.

5. The material on the old exams which is covered on your exam 4:
   (a) Exam 1's:
   02: 7, 8, 9, 10.
   Spring 03: 6, 10.
   Summer 05: 6.
   Summer 06: 5, 7.
   (b) Exam 2's:
   97: 3, 9, 10.
   98: 3, 10.
   01: 3, 4, 5, 6, 8.
   02: 2, 3, 4, 5, 6, 10.
   Spring 03: 3, 6.
   Summer 03: 3, 6, 7, 8.
   04: 4, 5, 8.
   summer 05: 4, 7.
   fall 05: 7b.
   Summer 06: 1, 2, 3, 6, 7, 8, 9.
   fall 06: 6, 7.
   (c) Exam 3's:
   97: 2, 3.
   98: 3, 4.
   01: 6, 7, 8, 9.
   02: 1, 5, 7, 8, 9.
   Spring 03: 3, 4, 5, 6, 9.
   Summer 03: 4, 9.
   04: 1, 3, 9.
   summer 05: 1, 2, 5.

fall 05: 1, 2, 3, 5, 6, 7, 8.
fall 06: 2, 3, 5, 6, 7.

(d) Exam 4's:
97: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.
98: 1, 3, 6, 8, 9.
01: 1, 5, 10.
02: 1, 2, 3, 4, 5, 6, 8, 9.
Spring 03: 2, 3, 4, 5, 6, 7.
Summer 03: 1, 2, 3, 4, 5, 7, 8, 9.
04: 1, 6.
summer 05: 1, 3, 4, 5, 6.
fall 05: 1, 2, 3, 4, 5, 6, 10.

(e) Final Exams:
97: 1, 2, 6, 7, 8, 12, 17.
98: 1, 3, 7, 9, 10, 12, 13, 15, 16, 17.
01: 1, 5, 7, 9, 10abcd, 11, 14.
02: 1, 4, 8, 9, 11, 13, 17, 18.
Spring 03: 8, 9, 13, 14, 15, 18, 20.
Summer 03: 1, 2, 5, 7, 8, 9, 10, 13, 14, 16, 17defgh.
04: 1cdefg, 2, 5, 7, 8, 9, 14.
summer 05: 1cdefg, 2, 3, 4, 5, 6, 11.
fall 05: 1cdefg, 2, 3, 4, 7, 9, 10, 13, 14, 15, 16.
Summer 06: 3defgh, 4, 6, 7, 8.