Notes on Exam 2, Math 544, Summer 2012

1. Exam 2 is Wednesday Jume 6, and it covers sections 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, and 3.2.

2. Be able to define "linearly independent", "non-singular", "the inverse of a matrix", and "subspace of $\mathbb{R}^n$ ".

3. Be able to state and use the result about the linear dependence of p vectors in m-space. (I call this the Short-Wide Theorem).

4. Be able to state and use the Non-singular Matrix Theorem. This result NOW consists of FOUR equivalent statements. We proved the equivalence of three statements in section 1.7. We proved that a fourth statement is equivalent to the first three in section 1.9.

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

04: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.
05 (Summer): 1, 2, 4, 5, 6, 7.
05 (Fall): 1, 2, 3, 4, 5, 7, 8.
06 (Fall): 2, 3, 4, 5, 6, 7, 8.
07 (Summer): 1, 2, 4, 5, 6, 7, 8.
09 : 5, 6.
11 : all

(c) Exam 3's:
98: 1, 6, 7, 9.
01: 3, 4, 5, 10.
02: 3, 6.
03 (Spring): 8.
03 (Summer): 1, 7, 8.
04: 4.
05 (Summer): 6, 7.
05 (Fall): 9, 10.
06 (Fall): 1, 3, 4.
11 : 6.

(d) Exam 4's:
98: 4, 5, 7.
01: 4, 8.

(e) Final Exams:
97: 1 (You can list four conditions), 3, 9 (Notice that A and b are given above problem 6.), 14, 15.
98: 1 (You can list four conditions), 2, 4, 5, 6, 12, 14.
01: 1 (You can list four conditions), 4, 10ef, 13.
02: 1 (You can list four conditions), 3, 8 (just solve $Ax = b$), 15, 16.
03 (Spring): 10, 11, 16, 17, 18, 19.
03 (Summer): 11, 16, 17ab.
04: 1ab, 4, 8.
05 (Summer): 1ab, 5.
05 (Fall): 1ab, 6, 7 (You can list four conditions), 16.
06 (Summer): 2, 3abc, 7 (You can list four conditions).
06 (Fall): 1, 6a.
07 (Summer): 2.
09: 1, 2, 6, 7.
11 : 1, 2.