Notes on Exam 2, Math 544, Summer 2007

1. Exam 2 is Tuesday, June 19, and it covers sections 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 3.2, and 3.3.

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

3. Be able to state and use the result about the linear dependence of p vectors in m-space. (I call this the Short Fat 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, 8, 9, 10.
   02: 1, 2, 3, 4, 5, 6, 8, 10.
   03 (Spring): 1, 2, 3, 4, 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
   (b) Exam 2's:
   97: 1, 2, 3, 4, 5, 6, 7, 8.
   98: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.
   01: 1, 2, 7, 8, 9, 10.
   02: 1, 7.
   03: (Spring): 1, 2, 3, 4abcde, 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.
   05 (Summer): 1, 2, 3, 4, 5, 6, 7.

05 (Fall): all.
06 (Summer): 3ab, 4, 5, 9.
06 (Fall): all

(c) Exam 3's:
97: 4, 5, 6, 7, 8.
98: 1, 2, 5, 6, 7, 9.
01: 3, 4, 5, 10.
02: 2, 3, 6, 10.
03 (Spring): 1, 2, 7ab, 8.
03 (Summer): 1, 2, 3, 5, 6, 7, 8.
04: 2, 4, 7, 8,
05 (Summer): 4, 6, 7.
05 (Fall): 4, 9, 10.
06 (Fall): 1, 3, 4.

(d) Exam 4's:
98: 2, 4, 5, 7.
01: 2, 3.
03: (Spring): 8.
03: (Summer): 6.
05 (Summer): 2.

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