Study Guide for Midterm 2 - Math 544, Frank Thorne (thorne@math.sc.edu)

- You should be thoroughly familiar with the material of Chapter 4. The only big exception is that the second half of 4.6 was not covered. In Section 4.6 you should be familiar with Theorems 1 and 2 and be able to compute dimensions of vector spaces. (There are many questions like that in the exercises.)

- We did all the material in 5.1, although our presentation differed somewhat. The explanation is rather long, and would make excellent reading if you'd like better intuition for what 'one-to-one' and 'onto' mean.

  The picture and explanation on p. 399 is very nice and well worth reading. You should understand Theorem 1 on p. 411 and its proof.

- We covered 5.2 very lightly. You should understand the statements of all the theorems, but we did not cover the proofs.

- We covered the material of 6.1 (except that we said nothing about Theorem 4), although with a more computational orientation and with much less formalism. You should understand the correspondence between $m \times n$ matrices and linear transformations from $\mathbb{R}^n$ to $\mathbb{R}^m$. You should be able to 'interpret' and describe matrices, and you should be throughly familiar with everything in the handwritten notes posted to the website.

- You should understand Markov chains (these are covered in the handwritten notes) and be able to work out computations with them.

- The Leontief input-output model won't be on the exam.

- You should understand the material of Sections 6.2 and 6.3 to the extent covered in lecture through Friday.