STUDY GUIDE TO THE FIRST MIDTERM

The first midterm covers 1.1, 1.2, 1.3, 1.4, 1.5, 1.7, 1.8, 1.9, 2.1, 2.2 and 2.3. No calculators, closed book, no notes and no need for a blue book.

Definitions:

Knowing and understanding definitions means being able to write the mathematical statement of the definition and being able to explain the definition in your own words. Here are the words and definitions you should know and understand for the first midterm:

- linear combination (of a sequence of vectors);
- span (of a set of vectors);
- linear dependence and independence (of a set of vectors);
- linear transformation (a special type of function with two properties);
- onto and one-to-one (adjectives that describe functions);
- tranpose (of a matrix);
- inverse (of a matrix).

Notation:

Here is some useful notation that might appear in a question and which you also might be able to use to answer a question:

- consistent and inconsistent (in the contex of linear systems of equations);
- augmented and coefficient matrix (in the contex of linear systems of equations);
- (row) echelon form (of a matrix);
- pivot;
- parametric form (of the solution to a system of linear equations);
- tranpose (of a matrix);
- matrix associated to a linear function.

Theorems:

Here are theorems whose content you should understand well. You will not be asked to write these theorems verbatim on the exam, so you don't need to memorise the exact statements, but knowing these results will help you solve some of the exam questions:

- Theorem 4, on page 37;
- Theorem 7, on page 58;
- Theorem 8, on page 59;
- Theorem 10, on page 71;
- Theorem 11, on page 76;
- Theorem 12, on page 77;
- Theorem 8, on page 112.