I. COURSE DESCRIPTION: Linear Algebra is the bridge course to much of higher mathematics. Many of the courses in the mathematics major rely heavily on the material in this course, and all of the upper level courses make at least some reference back to linear algebra. There is a theory part of this course and there is an application part, and we will try to go back and forth between many different perspectives. Always, we will take the “hands-on approach”, which means that we will try to give examples of everything that we work on. By the end of the course, you should have a working knowledge of vectors, matrices, vector spaces, bases, linear independence, row spaces, column spaces, how to solve systems of linear equations, and the fundamental linear algebra theorem.

We will use the text entitled Linear Algebra and its applications by David Lay. This course is useful to people studying math (obviously), physics, chemistry, economics, engineering, and others. One suggestion is to actually read the book. This may be obvious, but I think that a lot of people get through calculus and differential equations without reading the book to try to find out what is going on. This course will introduce unfamiliar material, and the book does a decent job of explaining the hard parts.

II. GRADING Homework assignments will account for 10% of the final grade. There will be two parts to the homework: the first part, focusing on computational problems, will be worth 5% of the final grade, and I encourage you to work together on these problems. The second part, focusing on concepts and theoretical problems, will be worth 5% of the final grade. This latter part needs to be pledged, and I expect you to have done this with no help from your classmates. Typically, the homework will be due on Tuesday.

In addition to the homework, there will be 3 tests (dates: 2/8, 3/15, 4/12) worth 20% apiece. There will also be a final (Tuesday 5/1 9-12), which is worth 30% of the final grade. The final will be cumulative, and it will be similar to the tests.

In addition to these regular grades, you can get extra credit (worth 10 points on a test) by attending a colloquium talk in the Math and Computer Science Department. More details later.

III. ACADEMIC HONESTY: Tests will be closed book, closed notes: you cannot receive help on the tests from anyone except me. I want to strongly encourage you to study together and to work on the computational homework problems together, although direct copying will be considered an honor violation. However, for the concept homework problems, I want you to work alone. Do your best to keep those separated.