Math 250:08: Introductory Linear Algebra, Spring 2012

Prerequisite: Calculus II at the level of Math 136, 138, or 152

Overview: Linear algebra is the study of vector spaces and linear transformations. This course will be taught from a geometric perspective with a heavy emphasis on matrix computations. A motivating application will be to determine when a system of linear equations can be solved and, if it can be, how to find its solution(s). Other potential applications include computer graphics, linear optimization and programming, and differential equations. The material in this course has a markedly different feel than that of prior courses; in addition to learning how to do many computations, students will need to work with abstract concepts and will be introduced to the idea of mathematical proof.

Instructor: James Dibble

Email: jdibble (at rci.rutgers.edu)

Lecture: TTh6 5:00-6:20pm, SEC 217 (Busch)

Office Hours: Always possible by appointment in Hill 535; regular office hours will be determined after the first lecture and posted on the course website.

Text: *Elementary Linear Algebra: A Matrix Approach (2nd Edition)* by Spence, Insel, and Friedberg

Website: Homework problems and other important course information will be posted at http://www.math.rutgers.edu/~jdibble/250/ throughout the semester.

Exams: There will be two in-class midterms, a thirty-minute oral exam, and a final exam. The oral exam will be graded on a pass/fail basis; the others will be graded as usual, with partial credit awarded for correct work. There will be no make-up exams without prior written approval from the instructor.

Homework: Homework problems from the textbook will be posted on the course website after each class. Students are expected to complete these problems before the next class. The problems will not be collected or graded, but completing them is **essential** for success in the course. The computational skills and conceptual understanding required on the exams can only be developed through constant engagement and repetition; students should **not** wait until the last minute to attempt the problems.

Workshops: Six times during the semester, class time will be devoted to workshops, where students will work in groups on a set of problems. Solutions to all of the problems will be due at the beginning of class one week later. Although students are encouraged to discuss the workshop problems with each other dur-

ing the allotted class time, they are required to write their solutions individually. After the student write-ups have been submitted, two problems will be graded, one of which will be selected at random. Late workshops will **not** be accepted, not even those a few seconds late. Each student's lowest workshop score will be dropped.

Grading: The different elements of the course will be worth the following amounts, for a total of 500 points:

Midterm 1 (100)
Midterm 2 (100)
Final Exam (200)
Oral Exam (50)
Workshops (50 total, 10 each, lowest score dropped)

The final letter grades will be assigned based upon the total number of these points earned.

Academic Integrity: Academic integrity is extremely important. Students should be familiar with the university policy, which can be accessed online at http://academicintegrity.rutgers.edu/. All work on exams must be entirely independent; during the exams, students may not give or receive any information to or from others (the instructor excluded). Calculators, cell phones, and anything else capable of a wireless connection are not permitted during exams; their presence is immediately taken as a violation of academic integrity. Also, while students are encouraged to work together on workshop problems during the workshop periods, solutions must be written up individually.