Mathematics V2010y
Linear Algebra
Spring 2007

Instructor: Prof. Michael Thaddeus  Classroom: 203 Mathematics
Office: 414 Mathematics  Lectures: M.W. 1:10–2:25 pm
Office hours: M.W. 2:30–4, or by appointment.


Required text: Elementary Linear Algebra: A Matrix Approach, by L.E. Spence, A.J. Insel, and S.H. Friedberg (Prentice-Hall), available at Columbia University Bookstore. Reading and homework will be assigned from this text. Warning: these authors have written two different books. Be sure to get Elementary Linear Algebra.

Prerequisite: Calculus III or the instructor’s permission.

Course outline: Linear algebra is one of the most beautiful subjects in mathematics, and one of the most useful. We will introduce the fundamental concepts of linear equations, matrices, and vector spaces, and show how they can be applied to solve practical problems in engineering, economics, and the sciences. The main topics to be covered include simultaneous linear equations, matrices, determinants, orthogonality, eigenvectors, and complex matrices. This is covered in Chapters 1–6 of the text. Time permitting, we will also discuss such additional topics as the abstract theory of vector spaces, canonical forms, Markov chains, linear programming and the simplex method.

Contacting me: My office telephone is 4–4308. Please leave a message if I am out. I strongly prefer communicating by telephone, or in person, to e-mail.

Homework: Homework will be assigned every week on Wednesday. It will not be collected or graded. Manpower permitting, we will produce and hand out solutions two weeks after the homework is assigned.

Midterm Exams: There will be no midterm exams.

Quizzes: So, what’s the catch? Instead of midterms, there will be eight 25-minute unannounced quizzes, scattered at random during the lectures throughout the semester. Most of the questions will be similar to homework problems. I will not accept any excuses for absence from the quizzes, even legitimate ones such as illness or a family emergency. However, I will drop the lowest three quiz grades (which would be zero if a quiz is missed). I promise not to give any quizzes on April 2, 4 or 9 when many students will be observing Passover.

Final Exam: The final exam is currently projected for Monday, May 7, 1:10–4 pm. You must take the final exam at the scheduled time. The only exceptions would be for an incapacitating illness, a serious family emergency, or situations of comparable gravity. In the first case you will need a note from a doctor; in the other cases you will need a note from your dean. In any case please notify me before the exam if at all possible. Incompletes can be granted only by your dean and only in the circumstances mentioned above. Anyone guilty of academic dishonesty, such as cheating on an exam or helping someone else to cheat, will fail the course and faces further academic discipline.

Grading: Each of five top quizzes 10%, final exam 50%.