Course Syllabus: Math 713
Advanced Applied Matrix Theory
Kansas State University
Summer 2006

Time and place: MTWUF 3:00-4:00 pm, CW 130.
Instructor: Genevra Neumann
Email: neumann@math.ksu.edu
Office: CW 125
Phone: 785-532-0595
Office hours (tentative): MTWUF 4:00-5:00 pm or by appointment.


Course objectives: Math 713 is intended to be a second course in applied matrix theory. We'll be studying topics that you probably didn’t encounter in your first linear algebra course, such as the Moore-Penrose pseudo-inverse, singular value decomposition, Jordan canonical form, and matrix exponentials. We’ll also look at some applications. We might spend a little bit of time on modeling (in the sense of operations research: linear programming, Markov chains, etc.), as the interests of the class and time permit.

Summer courses cover a great deal of ground in a short time, so it’s important to stay current with the material. It’s no fun struggling to stay awake through seemingly unintelligible lectures. Please don’t be shy about letting me know whether the pace is working for you or about asking for help. You are encouraged to ask questions in class and to stop by office hours.

Grading policy: Evaluation will be based on your performance on the homework problems. Attendance and class participation will be considered in borderline cases.

Homework: I’m planning on having weekly homework sets. The goal of the homeworks is to help familiarize you with the material (by working relatively gentle problems.) You are encouraged to discuss the problems with your classmates; however, you must write up your solutions independently. You are also encouraged to come to office hours for help. In “proof” problems, please restate the problem in your own words as a “Claim” before starting your proof. Unless specifically stated otherwise, you are expected to show your work in calculation problems (it will not be acceptable to have a computer solve these problems for you.) Late homework is discouraged, because it’s important to stay current with the course. In honor of Murphy’s Law, I will accept one late homework from each of you, provided that you give a reasonable explanation for the delay. Subsequent late homeworks will only be accepted under truly extenuating circumstances.

Midterm and final exams: No exams.

Attendance and class participation: You are encouraged to be an active learner in this course. Part of being an active learner is coming to class and asking questions. Occasionally, you may need to
miss class because of illness or a family emergency. If you miss class more than a few times, I will assume that you are choosing to skip class unless you provide an alternate explanation.

**Important notices:**

1. Plagiarism and cheating are serious offenses and may be punished by failure on the exam, paper, or project, failure in the course, and / or expulsion from the University.

2. While you are encouraged to work together on the homework, you must write up your solutions independently.

3. If you have any condition, such as a physical or learning disability, which will make it difficult for you to carry out the work as outlined above or which will require academic accomodations, please see the instructor during the first two weeks of the course.