

Web Page: <http://galton.uchicago.edu/~lalley/Courses/243/>

Course description: This course is devoted to the *basic theory* and some of the *significant applications* of linear algebra. The objective will be to provide a working knowledge of the subject suitable for advanced courses in linear statistical models, econometrics, and numerical methods. Topics covered will include: Gaussian elimination; vector spaces; linear transformations and their matrix representations; orthogonality; eigenvectors and eigenvalues; diagonalization of real symmetric (and complex Hermitian) matrices; the spectral theorem; and matrix decompositions.

Text: Gilbert Strang's *Linear Algebra and Its Applications*, fourth edition (Brooks/Cole, 2006). It is available for purchase in the bookstore.

Weekly assignments: The course requires the submission of eight weekly problem sets, for which solutions will be provided. Problem sets will be posted on the course web page, usually a week in advance of the due date. Problem sets will be due on Mondays, at the *beginning* of class.

No late papers will be accepted.

You are encouraged to discuss your ideas on homework problems with peers and instructors, but you are not permitted to refer to any notes from such discussions while preparing the solutions you plan to submit for grading.

Homework problems will be of two types: straightforward (unstarred: worth 8 points each) and challenging (starred: worth 12 points each). Students need only submit for grading solutions to six of eight problems.

Exams and Grades: There will be a midterm exam on **November 11** and a 2 hour final exam. The final will be comprehensive. Grades will be determined by performance on homework (25%), midterm exam (25%), and the final (50%).

Discussion and Office Hours: Our CA Yibi Huang will lead discussion sessions on **Friday** to stimulate exchange of ideas on homework problems. The time and place will be announced soon. Yibi will also have another office hour on ???. I will have an office hour each week on **Thursday** from 2:00 until 3:00.