MATH 117, FALL 1999

ADVANCED LINEAR ALGEBRA

Course Outline

Instructor: Viktor Ginzburg
AS 353C, ginzburg@cats.ucsc.edu
Office hours: Tu 10:00–11:30am, Th 12:00–2:00pm
or by appointment

Meetings: TuTh 2:00-3:45pm, AS165

Text: *Linear Algebra Done Right*
by Sheldon Axler
1997 (second edition), Springer

Homework assignments will be collected in class every week. Homework pages should be stapled or clipped together.

Exams and Grading: There will be two midterms. The grade for the course will be based on a cumulative point total

- Homeworks: 20%
- Midterms: $2 \times 20\%$
- Final: 40%

Prerequisites: Linear Algebra Math 21 (or Math 27) and Introduction to Mathematical Proofs (Math 100) or CS 101.

Syllabus: The focus of the course will be on the notions of an abstract vector space and a linear map and other concepts of advanced linear algebra. The course relies heavily on the techniques of mathematical proof.

The topics covered will include

1. abstract vector spaces,
2. linear dependence, bases, dimension,
3. linear maps and related notions,
4. eigenvalues and eigenvectors,
5. inner products and operators on inner-product spaces,
6. trace and determinant.