Instructor: Ana Balibanu (ana@math.harvard.edu)

    CAs: Sophie Collins Arroyo (sophiecollinsarroyo@college.harvard.edu)
      Matthew Ho (matthewho@college.harvard.edu)
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Course meetings: Monday and Wednesday, 1:30-2:45 p.m. in SC 309a

Download a detailed syllabus.

Course description.

This course is a rigorous introduction to linear algebra. We will study vector spaces and linear transformations, eigenspaces and eigenvalues, inner product spaces, matrices and determinants, and canonical forms. On the way, we'll encounter a wide variety of fundamental structures which recur throughout all areas of higher mathematics.

Who is this course for?

This course is for you if you are looking for an introduction to many interesting algebraic and geometric notions and for some exposure to rigorous mathematics. The material is self-contained, and we will only assume familiarity with functions, polynomials, and basic calculus. In particular, if you have already seen some linear algebra in Math 21, you should be very well-prepared for this class.

Sections and office hours.

There will be a weekly section, led by the CAs, which is optional but highly recommended. There you'll have the chance to revisit the essential points of the lecture material and to work together on challenging problems. We'll also have a regular schedule of office hours, where you can come to ask questions and discuss the course. We'll make sure that sections and office hours are scheduled in a way that accommodates everyone.

Textbook.

The recommended (but not required) textbooks are *Linear algebra done right* by S. Axler and *Linear algebra* by J. Hoffman and R. Kunze. There are copies available in the Harvard libraries as well as online. Every week I will post suggested reading for those who like to read before lecture, but homework will be assigned independently of the texts.

Assignments, exams, and grading.

In addition to weekly problem sets (35%), there will be two in-class midterms (20% each) and a take-home, timed final exam (25%).