

Math 320: Linear Algebra I

Instructor: Andy Sanders

Andy Sanders

Office: SEO 404

email: andysan@uic.edu

URL: www.math.uic.edu/~andysan

- **Meeting:** MWF 10:00-10:50 AM in Addams Hall Room 306.
- **Office hours:** Monday and Wednesday from 11:00-11:50 AM in SEO 404.
- **Textbook:** We will use the book "Linear Algebra" by Jim Hefferon of Saint Michael's College. It is freely available online at joshua.smcvt.edu/linearalgebra/book.pdf.

Course description: This course introduces students to a rigorous study of the foundations of linear algebra. The topics of the course are: linear systems of equations, Gaussian elimination, matrices, vector spaces, linear transformations, orthogonality, Gram-Schmidt process, determinants, inner products, and eigenvalue problems. The goal of the course is twofold: we shall solve computational problems and also study the basic theory by proving theorems.

Prerequisites: Calculus I, II, III; familiarity with understanding and writing proofs, as for instance in Math 215, is strongly recommended.

Homework: Homework will be assigned each Monday and collected the subsequent Monday. These assignments will be the single most important component of the class, they are where you will learn to *do* mathematics. Please write solutions neatly using sensible English. Assignments must be written up individually, though collaboration on the homework is strongly encouraged. Though it is often portrayed as a solitary activity in the media, the truth is that a huge portion of mathematics arises out of collaboration. No late assignments will be accepted, but the lowest homework grade of the semester will be dropped.

Exams and grading: There will be two mid-term exams and a final exam in addition to the homework. The mid-term exams will be given in week 5 and week 10. The final exam occurs on Friday, December 13 from 10:30 AM to 12:30 PM. You must take the final exam to receive a passing grade in the course. Make-up exams will only be given in the event of an emergency verified by a note from a doctor or other official party. If you think you must miss an exam for some reason, please come talk to me at least one, preferably two, weeks

before the exam takes place.

Grades will be determined based up the following relative weighting of the components of the class:

Homework: 20%

Mid-term exams: 40% (each will account for 20%)

Final exam: 40%

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