

MATH 124 Linear Algebra – Fall 2021

Last updated: September 1, 2021

Instructor: Puck Rombach (*puck.rombach@uvm.edu*)

Text: *Linear Algebra*, Fourth Edition, Jim Hefferon.

Overview

The purpose of this course is to introduce the theory of Linear Algebra: matrices, vectors and vector spaces. Linear Algebra provides specific techniques for solving certain kinds of problems, those that are “linear” in nature. There are relatively few techniques, but many concepts. The techniques are generally very elementary in nature (most involve repeated arithmetic, and none involve anything more complicated than solving polynomial equations). The challenge of the subject is in the understanding of the concepts, which will generally be presented at a somewhat abstract level.

Learning Objectives

Vector spaces, linear independence, bases, linear transformations, matrices, determinants, change of basis characteristic equations, eigenvalues and eigenvectors, with applications. Besides the class material listed above, we will work hard on improving your general mathematical skills such as careful proof writing and constructing mathematical arguments.

Homework

There will be one set of Homework problems each week. Each homework set has questions on the material of the current week, and a few easy questions on next week’s material. In order to answer those, you have to read the indicated sections in the book ahead of the next week. Reading is an important part of your homework, and the classes will assume that you have done the reading.

Homework is due on Tuesday, at the start of class.

Exams

There will be two midterms and a final exam. The midterms will take place on September 28 and on October 26.

Appointments

I will hold office hours twice a week. Depending on my schedule, I can also be available for appointments online or in-person.

Grading

Grades are determined as follows. Homework 40%, Highest Midterm 25%, Lowest Midterm 10%, Final Exam 25%. For grade calculation, you may drop your 3 lowest homework scores. Guaranteed letter grades, are A (-/+) for 90%, B (-/+) for 80%, C (-/+) for 70%.