

MATH 245 – Fall 2022
Linear Algebra 2 (Advanced Level)

Instructor: Rahim Moosa, MC 5018, rmoosa@uwaterloo.ca

Objective: This is an advanced level second course in linear algebra. It covers much more material, and at a much deeper level, than MATH 235. The main topics are: the structure of linear operators on a finite dimensional vector space (decomposition theorems and canonical forms), inner product spaces, and bilinear forms. The lectures will be rigorous, abstract, and in definition/theorem/proof style.

Text: The textbook for the course is Linear Algebra: Second Edition by *Hoffman and Kunze*. As it is out of print, a bound photocopied version is available for purchase at the W Store in SCH. We will be covering parts of chapters 4,6,7,8,9, and 10.

Lectures: The 50 minute lectures will be held on MWF at 11:30 in E2 1732. Unless the pandemic related policies change, these lectures will be in-person, not streamed or recorded, and hence not available online.

Office Hours: I will hold office hours on Wednesdays, 3–5.

Homework: There will be about 10 homework assignments worth 20% in total. They will appear on LEARN and will be submitted through Crowdmark. You are expected to do all homework assignments without collaboration and without the internet – using only the book and your lecture notes.

Midterm/Final EXAMS: There will be a one and a half hour midterm exam on Tuesday November 8 at 4:30 in RCH 301, worth 20%. There will be a final exam in December, scheduled later by the Registrar, worth 60%.