MATH223: Honours Linear Algebra
Final Exam information

December 12, 2024

Time and place

The Final exam will take place on **Wednesday, 18/December, 7:00pm-9:30pm in (SWNG-Floor 2-Room 222)**.

Material covered

The final exam is cumulative, so everything we covered in class (lectures and homeworks) can potentially appear on the final exam. In terms of chapters in Axler, this corresponds to:

- All of Chapter 1.
- All of Chapter 2.
- All of Chapter 3, except quotients (the second half of 3E) and annihilators (the "Null Space and Range of Dual Linear Map" part of 3F).
- All of Chapter 4, but you are not expected to reproduce any of the proofs, just use the Theorems here.
- From Chapter 5:
  - All of 5A.
  - The first two sections of 5B (so not including "Eigenvalues on Odd-Dimensional Real Vector Spaces").
  - 5D up to and including Theorem 5.62. but not afterwards.
- From Chapter 6:
  - All of 6A.
  - 6B, except for Theorems 6.37 and 6.38, but including 6.42.
  - All of 6C except pseudoinverses (page 220 onward).
- From Chapter 8:
  - All of 8A.
  - All of 8B.
  - All of 8C, except for the first half of 8C (so not including "Square roots of operators").
- From Chapter 9:
  - The first section of 9A ("Bilinear forms").
  - All of 9B.
  - From 9C: the definition of the determinant.

Answering questions

Unless instructed otherwise, you should give complete proofs for all the questions. You may use any Theorem or result that we covered in class or is in the textbook, but whenever you use a nontrivial result, you should refer to it.

Preparing for the test

There is a practice final on our course webpage that is similar in length and difficulty to the actual test. To get more practice, I recommend doing the exercises in our textbook, and revisiting the midterms. The first **five** questions on the final will be very similar to the first **five** questions on the practice test.

Accommodations

If you have accommodations with the UBC Centre for Accessibility, please make sure that you are registered to write the test with them.