

## MAT247 COURSE OUTLINE

### 1. GENERAL INFORMATION

1.1. **Class Location and Time.** Tuesday 10-11 , Thursday 11-1 in MB128.

1.2. **Tutorials.** There are 4 tutorial sections. Tuesdays 11 - 1 in GB 303, Tuesdays 2-4 in GB221, Wednesdays 11-1 in ES 4001, and Thursdays 1-3 in BA1200

1.3. **Office Hours.** Office hours will be held in Thursday 3-4 HU1001B (location subject to change)

1.4. **Contact Information.** My e-mail is [jacobt@math.toronto.edu](mailto:jacobt@math.toronto.edu)

Note that I do not respond to individual questions about course material.

### 2. TEXTBOOK

We will be following *Linear Algebra Done Right* by James Axler, beginning with chapter 6.

### 3. COURSE DESCRIPTION

The major topics course will cover are as follows:

- Real and complex inner product spaces
- Orthonormal bases
- Self-adjoint and normal operators
- The spectral theorem
- Polar and singular value decompositions
- Generalized eigenspaces
- Nilpotent operators
- The Cayley-Hamilton theorem
- Trace and determinant

The two main topics for the course are inner product spaces, and canonical forms.

### 4. MARKING SCHEME

There will be one term test (30% of the total grade) and a final exam (40%), as well as 8 homework assignments (30%) of which the lowest two will be dropped.

### 5. HOMEWORKS

The (expected, but might change slightly) due dates for the homework are Jan 2, Jan 28, Feb 4, Feb 11, Feb 25, Mar 3, Mar 17, Apr 3. Homeworks are to be submitted through crowdmark. There will be a lateness penalty of 10% per day.

### 6. TERM TEST GRADING

The term test will be held in class on **February 27, 2019**. If you score higher on the final exam than on the term test, your term test mark will be replaced by your mark on the final exam. Likewise, if you miss the term test, your grade will be replaced by your grade for the final exam.