

# MAT240 - Algebra I[36L/24T]

## Instructor

**Instructor** Eckhard Meinrenken  
**Email** mein@math.toronto.edu  
**Office** BA 6112  
**Office Hours** Thursday 1:30-2:30, or by appointment

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## Teaching Assistants

**Name** Debanjana Kundu  
**Email** dkundu@math.toronto.edu  
**Office Hours** Thursdays 3:00-4:00 HU1012 (GANITA lab)

**Name** Jeff Pike  
**Email** jpike@math.toronto.edu  
**Office Hours** Tuesdays, 3:30-4:30 PG Math Aid Centre (room PG 101)

**Name** Ivan Telpukhovsky  
**Email** ivantelp@math.toronto.edu  
**Office Hours** Monday 4:00-5:00 PG Math Aid Center (room PG 101)

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## Course Description

Abstract (from academic calendar): A theoretical approach to: vector spaces over arbitrary fields, including  $\mathbb{C}$  and  $\mathbb{Z}_p$ . Subspaces, bases and dimension. Linear transformations, matrices, change of basis, similarity, determinants. Polynomials over a field (including unique factorization, resultants). Eigenvalues, eigenvectors, characteristic polynomial, diagonalization. Minimal polynomial, Cayley-Hamilton theorem.

**Textbook.** Linear Algebra (4th edition); by Friedberg, Insel and Spence. Prentice Hall

**Course Website.** The website for the course is

<http://www.math.toronto.edu/mein/teaching/MAT240/MAT240.html>

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## Homework Assignments

There will be 9 homework assignments, which you must submit by the due date. Your homework mark will be determined by the taking the average of the best 8 assignments.

We intend to use the *Crowdmark* system for the submission of homeworks. For each assignment, you will receive a personal link through which you can submit your solution. **Do not forward your link to others.** It is important that you submit solutions **on time**, and that your solutions are **legible** (use the preview option to verify). If you encounter problems with the crowdmark submission, please let me know by email.

While you can certainly discuss homework with classmates, **you have to write up the solutions yourself, in your own words.** Otherwise it is considered unauthorized aid or assistance (working too closely with another student on an individual assignment so that the end result is too similar), which is an academic offence under the University's Code of Behaviour on Academic Matters. If you find the solutions in books or on the internet, you must **quote your source** (and still write it up in your own words!)

There will be some additional assignments that are not to be submitted. You are expected to work on these assignments as well. (They may be relevant for the term test or final exam.)

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## Term Tests

There will be 1 term test, taking place on Tuesday, October 17, 2017, 11:10-13:00 in EX 100.

**You must bring your student card to the term test. No aids will be allowed. In particular, electronic gadgets (e.g. calculators, phones, smart watches, etc) are not allowed.**

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## Missing Term Work

If you cannot show up for a test because of illness or any other special reason, you **MUST** submit the official UofT medical certificate, which can be downloaded at

<http://www.illnessverification.utoronto.ca/>

There will be NO make-up tests. The marking scheme will be adjusted appropriately for students who have missed a test because of illness or any other (approved) legitimate reason.

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## Final Exam

The final exam will take place during the examination period, and will be 3h long. It will cover all the material presented in lectures and tutorials.

Aids permitted: None

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## Marking Scheme

Your final grade is determined in the following way:

Homework	(best 8 out of 9)	20 %
Term Test 1	10/17/2017	30 %
Final Exam	Date: TBA	50 %
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		100 %

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## Code of Behaviour / Plagiarism

Students should become familiar with and are expected to adhere to the Code of Behaviour on Academic Matters which can be found at:

<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>