

MAT475H1F, LEC0101: Problem Solving Seminar
Fall 2024
University of Toronto

I. Instructor and Teaching Assistants

Course Instructor

Name: Florian Herzig

Email: herzig@math.toronto.edu

Office Hours: to be determined

TA

Name: Matthew Bolan

Email: matthew.bolan@mail.utoronto.ca

Office Hours: to be determined

II. Course Overview

Course Description

This course addresses the question: How do you attack a problem the likes of which you have never seen before? Students will apply Polya's principles of mathematical problem solving, draw upon their previous mathematical knowledge, and explore the creative side of mathematics in solving a variety of interesting problems and explaining those solutions to others.

Prerequisites

MAT224H1/MAT247H1, MAT235Y1/MAT237Y1/MAT257Y1, and at least 1.0 credit at the 300+ level in APM/MAT

Course Objectives

Problem solving is an important aspect of mathematics, but in many courses you focus more on absorbing new material. The goal of this class is to introduce you to various methods of problem solving, so that you will become better at solving math problems and also at writing out solutions.

Textbooks/ Course Readings

[*Problem-solving strategies*](#) by Arthur Engel (available online at U of T Libraries)

How this course is organized:

This course meets for three hours each week and there are no tutorials.

Usually, each week we will focus on a new topic. We'll introduce new material on Tuesday and then there will be a roughly 25-minute long quiz at the beginning of class on the next Tuesday.

This seminar class is meant to be very interactive. We'll be discussing lots and lots of problems, and you will split into groups to work on them. Participation will count in this class! Discussing and presenting your ideas and solutions is a great way to improve your problem solving abilities!

Lectures will be in person, meeting Tue 3-5pm and Thu 2-3pm.

The course website is <http://www.math.toronto.edu/~herzig/475-f24.html>.

III. Evaluation/ Grading Scheme

Mark Breakdown

| | |
|--------------------|-----|
| Quizzes (about 10) | 55% |
| Participation | 10% |
| Final Assessment | 35% |

Assignments

There will be about 10 quizzes during class on Tuesdays (starting September 17). There are no make-up quizzes, but the lowest three quiz scores will be dropped.

Weekly homework will be assigned but not collected. Quiz problems will be related to the assignment. Practice is essential in this course! *You are encouraged to work together with other students on homework!*

Term Test

There will be no term tests.

Final Assessment

The final assessment will be held in person during the final assessment period in December 2024 and will be scheduled by the registrar. More information will be provided during the Fall semester.

IV. Course Policies

Policy on Missed Term Work

As flexibility for missed quizzes has been built into the marking scheme, missed quizzes will only be excused for exceptional reasons (you must submit your request to the Instructor within 72 hours). The same is true for missed class attendance/participation.

The following are recognized forms of documentation for missed term work:

- Absence declaration via [ACORN](#)
- [U of T Verification of Illness or Injury Form \(VOI\)](#)
- College Registrar's letter
- Letter of Academic Accommodation from Accessibility Services

Students who are absent from class for prolonged periods and who require consideration for missed academic work should contact the instructor and verify their absence(s) through either the Absence Declaration tool, Verification of Illness or Injury (VOI) form, College Registrar Letter, or Letter of Academic Accommodation from Accessibility Services, as appropriate to their situation.

For more information, see <https://www.artsci.utoronto.ca/current/academics/student-absences>.

V. Institutional Policies and Support

Academic Integrity

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters (<https://governingcouncil.utoronto.ca/secretariat/policies/code-behaviour-academic-matters-july-1-2019>). If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, please reach out to your Course Instructor. Note that you are expected to seek out additional information on academic integrity from me or from other institutional resources (for example, the University of Toronto website on Academic Integrity <http://academicintegrity.utoronto.ca/>).

Accessibility

The University provides academic accommodations for students with disabilities in accordance with the terms of the Ontario Human Rights Code. This occurs through a collaborative process that acknowledges a collective obligation to develop an accessible learning environment that both meets the needs of students and preserves the essential academic requirements of the University's courses and programs. Students with diverse learning styles and needs are welcome in this course. If you have a disability that may require accommodations, please feel free to approach your Course Instructor and/or the Accessibility Services office as soon as possible. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.

Link to Accessibility Services website: <https://studentlife.utoronto.ca/departments/accessibility-services/>

Equity, Diversity and Inclusion

The University of Toronto is committed to equity, human rights and respect for diversity. All members of the learning environment in this course should strive to create an atmosphere of mutual respect where all members of our community can express themselves, engage with each other, and respect one another's differences. U of T does not condone discrimination or harassment against any persons or communities.

Important Academic Dates & Deadlines

The academic dates include enrolment dates, drop deadlines, exam periods, petition deadlines and more. <https://www.artsci.utoronto.ca/current/dates-deadlines/academic-dates>

Other Academic and Personal Supports

- Writing Centre <https://writing.utoronto.ca/writing-centres/arts-and-science/>
- U of T Libraries <https://onesearch.library.utoronto.ca/>
- Feeling Distressed? <https://studentlife.utoronto.ca/task/support-when-you-feel-distressed/>
- Academic Success Centre <https://studentlife.utoronto.ca/departments/academic-success/>
- College/Faculty Registrars <https://future.utoronto.ca/current-students/registrars/>