

**MAT475H1F: Problem Solving Seminar**  
**Fall 2022**  
**University of Toronto**

**I. Instructor and Teaching Assistants**

**Course Instructor**

Name: Florian Herzig

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Office Hours: to be determined

**TA**

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**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 Thursday and then there will be a roughly 20 to 25-minute long quiz at the beginning of class on the next Thursday.

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 at BA2155.

The course website is <http://www.math.toronto.edu/~herzig/475-f22.html>.

Please note that due to the ongoing COVID-19 pandemic, the course delivery method may change after term has started and this may alter the course organization. Students are expected to check the course site for updates as the contents of this syllabus may change.

### III. Evaluation/ Grading Scheme

#### Mark Breakdown

Quizzes (about 11)	55%
Participation	10%
Final Assessment	35%

#### Assignments

There will be about 11 quizzes during class on Thursdays (starting Week 2). 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 during the final assessment period in December 2022 and will be scheduled by the registrar. Information about the format will be provided during the Fall semester.

### IV. Course Policies

#### Policy on Missed Term Work

As flexibility for missed quizzes have been built into the marking scheme, missed quizzes will not be accepted.

Please note that Verification of Illness forms (also known as a “doctor’s note”) are temporarily not required. Students who are absent from class for any reason (e.g., COVID, cold, flu and other illness or injury, family situation) and who require consideration for missed academic work should report their absence through the online absence declaration. The declaration is available on ACORN under the Profile and Settings menu.

### V. Institutional Policies and Support

#### Masks in Class

While the mask mandate has been paused as of 1 July 2022, the use of medical masks continues to be strongly encouraged in high density indoor settings where physical distancing is not possible. Please respect each other's decisions, comfort levels, and health needs.

### **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/department/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/department/academic-success/>
- College/Faculty Registrars <https://future.utoronto.ca/current-students/registrars/>