

APM461/MAT1302: Combinatorial Methods
Winter 2023
University of Toronto

I Instructor and Teaching Assistants

Course Instructor

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TA(s)

Gal Gross

II Course Overview

Course Description

A selection of topics from such areas as graph theory, combinatorial algorithms, enumeration, construction of combinatorial identities.

Joint undergraduate/graduate course - [APM461H1/MAT1302H](#)

Prerequisite

[MAT224H1/ MAT247H1](#), [MAT137Y1/ MAT157Y1](#), [MAT301H1/ MAT347Y1](#)

Recommended Preparation

[MAT344H1](#)

Distribution Requirements

Science

Breadth Requirements

The Physical and Mathematical Universes (5)

Mode of Delivery

In Class

Course Objectives

To obtain a working familiarity with ordinary differential equations, and be able to recognize and solve large classes of useful differential equations. To be able to explicitly solve ordinary differential equations with constant coefficients. To be able to find qualitative features of solutions without explicitly solving.

Textbooks/ Course Readings

No required text. We will generally follow topics in van Lint and Wilson's and Cameron's Combinatorics books. Lecture scribe notes will be given.

How this course is organized:

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

Problem Sets	50%
Scribing	15%
Final Assessment	35%

Problem Sets

There will be about 5 problem sets, roughly one every 1-2 weeks. The lowest score will be dropped.

Final Assessment

The final assessment will be a 24 hour take home exam during the final exam period.

IV Course Policies

Policy on Missed Term Work

As flexibility for missed or late course assignments have been built into the marking scheme, late and missed assignments will not be accepted for any reason.

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.

If you miss a term test or the final assessment, then you must inform your course Instructor within 72 hours of the test. No exceptions. If your request is approved, you may receive an accommodation in the form of an oral exam, written make-up test, or a re-weighting of your assessments.

Email Policy

Should you have a question that is not answered on the course site or the Piazza (please check there first!) please note that all communications with the Course Instructor or TA’s must be sent from your official uToronto email address, with the course number included in the subject line. If these instructions are not followed, your email may not be responded to.

Piazza

We have a class page on Piazza where you can ask questions to your fellow classmates. The instructors and TAs will not be actively responding to questions on there. Avenues for that include office hours, tutorials, and emails. Be aware that the policies regarding academic integrity apply on Piazza as well. **In particular, do not post anything on Piazza about the midterm or final during the periods which they are open, or share answers to problem set questions.**

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/>).

Copyright

This course, including your participation, will be recorded on video and will be available to students in the course for viewing remotely and after each session.

Course videos and materials belong to your instructor, the University, and/or other sources depending on the specific facts of each situation and are protected by copyright. Do not download, copy, or share any course or student materials or videos without the explicit permission of the instructor.

For questions about the recording and use of videos in which you appear, please contact your instructor.

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/registrar/>