

CHM 1301 SYLLABUS (Winter 2024)

Organic and Synthetic Polymer Chemistry

I. TEACHING TEAM

Instructor: Prof. Helen Tran
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Prof. Timothy Bender
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Student hours: Helen, Dwight, Tim: By appointment. *Please direct questions to the relevant PI.*

Course meeting: Wednesday, 10 am - 12 pm ET
Location: (in person only) Sidney Smith 2120

II. COURSE OVERVIEW

Course description: Synthetic polymers have dramatically changed the world around us over the last 60 years and these materials are expected to play an increasingly crucial role in determining technological progress in the future. The aim of this course is to provide an overview of the methods used to synthesize macromolecules and how synthetic methodology allows their material properties to be controlled.

Prerequisites: None needed.

Readings: There is no dedicated text for this course.
Articles will be made available to complement lecture notes.
Important course materials will be regularly delivered on Quercus.
Check your email or Quercus daily for updates.

Honor code: Students are expected to contribute to a mutually respectful learning environment through intellectual honesty, dynamic discussions, and openness for peers, course assistants, and the instructor. Details are outlined at the end of the syllabus.

III. COURSE ORGANIZATION

The content of the lectures may change depending on course progress. It is highly recommended that the students attend lecture in-person.

Text in blue/italics indicates item related to grading. Assignments are due the following Monday at 5 pm ET unless stated otherwise.

Module	Dates	Topics - Tentative
1	Jan. 10	Helen: Course introduction + Mechanochemistry <i>Partners for the collaborative project will be assigned.</i>
2	Jan. 17	Helen: Self-immolative polymers + Sustainability
3	Jan. 24	Helen: Polymer backbone editing Assignment
4	Jan. 31	Dwight: Dynamic covalent chemistry, vitrimers, and cross-linking
5	Feb. 7	Dwight: Batteries
6	Feb. 14	Dwight: Polyolefins Assignment
	Feb. 21	No class

7	Feb. 28	Tim: Solar cells
8	Mar. 6	Tim: OLEDs
9	Mar. 13	Tim: TBA Assignment
10	Mar. 20	Guest lecture: Dr. Harrison Mills Quiz
11	Mar. 27	Student presentations
12	Apr. 3	Student presentations
13	Apr. 10	Exam week – overflow

IV. EVALUATION

Overview: Assignments – 39% (3 x 13% each)
 Quiz – 21%
 Oral presentation – 35%
 Peer-feedback – 5%

Assignments: Each PI will create an assignment relevant to their section. Based on the content material presented in the course and reported literature, students will create a quiz question for each lecture.

Oral presentation: On the first day of lecture, students will be paired up to create a 30 minute mini-lecture on a topic selected by the instructors. The first lecture will have a discussion of topics to be discussed. There will be an individual component and collaborative component, as well as attestation of work.

IMPORTANT: if an unexpected technical issue occurs with a university system (e.g., Quercus services, network outage) that affects availability or functionality, it may be necessary to revise the timing or weighting of the quizzes/term tests. Moreover, new content may be made available or new circumstances arise, which may slightly alter the course schedule and content.

V. COURSE POLICIES

Each member of this course is expected to maintain a:

- (i) professional and respectful attitude during all course activities, including classes, laboratories, tutorials, and other online activities.
- (ii) personal calendar/schedule/organizer to ensure that all course activities are completed, and due dates are met.
- (iii) collection of notes recorded independently based on concepts covered in course activities (students registered with Accessibility Services requiring a class note-taker will have access to this accommodation)
- (iv) familiarity with the university policy on Academic Integrity

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. The (INSERT COURSE) Teaching team will neither condone nor tolerate behaviour that undermines the dignity or self-esteem of any individual in this course and we wish to be alerted to any attempt to create an intimidating or hostile environment. It is our collective responsibility to create a space that is inclusive and welcomes discussion. Discrimination, harassment, and hate speech will not be tolerated. If you have any questions, comments, or concerns, we encourage you to reach out to the staff in our Equity Offices.

VI. INSTITUTIONAL POLICIES AND SUPPORT

Academic Integrity. Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The [University of Toronto's Code of Behaviour on Academic Matters](#) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences. All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from other institutional resources (see www.academicintegrity.utoronto.ca/).

Copyright. If a student wishes to copy or reproduce class presentations, course notes or other similar materials provided by instructors, he or she must obtain the instructor's written consent beforehand. Otherwise, all such reproduction is an

infringement of copyright and is absolutely prohibited. More information regarding this is available here: <https://teaching.utoronto.ca/ed-tech/audio-video/copyright-considerations/>

Accessibility needs. Students with diverse learning styles and needs are welcome in this course. The University of Toronto is committed to accessibility: if you require accommodations for a disability, or have any other accessibility concerns about the course, please contact Accessibility Services as soon as possible.

Accommodations for religious observances. Following the University's policies, reasonable accommodations will be made for students who observe religious holy days that coincide with the due date/time of an assignment, tutorial, class or laboratory session. Students must inform the instructor before the session/assignment date to arrange accommodations.

Additional services & support.

- School of Graduate Studies' [Policies and Guidelines](#)
- Full library service and resources on conducting online research through University of Toronto Libraries [University Libraries Research](#)
- Resources on academic support from the [Academic Success Centre](#)
- Learner support at the [WritingCentre](#)
- Information for [Technical Support/Quercus Support](#)

Acknowledgement of traditional lands. We wish to acknowledge this land on which the University of Toronto operates. For thousands of years, it has been the traditional land of the Huron-Wendat, the Seneca and, most recently, the Mississaugas of the Credit River. Today, this meeting place is still the home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to work on this land