

CHM1401 - Transport and Fate of Chemical Species in the Environment - 2024

This is the core course for new graduate students in environmental chemistry, providing an introduction to relevant concepts in physical, analytical and organic chemistry and their application to the environment. It also provides you with the background to better understand the research of your peers and colleagues.

Class is from 9:00-12:00 on Tuesdays, with a two-hour (or more) lecture and an occasional one-hour workshop. The course is in-person with no remote/virtual option. Active participation of students is encouraged and expected. Readings and assignments for the course will be posted on the Quercus site and students are responsible for checking the site for updates and resources. All assignments will be submitted via Quercus.

Instructors

Jon Abbatt (course coordinator)

jonathan.abbatt@utoronto.ca

Myrna Simpson

myrna.simpson@utoronto.ca

Derek Muir (guest lecturer)

derek.muir@sympatico.ca; derek.muir@utoronto.ca

Jessica D'eon (guest lecturer)

jessica.deon@utoronto.ca

Daniel Newman (guest lecturer)

daniel.newman@utoronto.ca

Lecture Schedule (lecturer and class campus location are indicated)

September 10	Introduction to the physical environment	Abbatt (StG)
September 17	Kinetics (<i>workshop</i>)	Abbatt (StG)
September 24	Reactions I	Abbatt (StG)
October 1	Reactions II and carbon cycle (<i>workshop</i>)	Abbatt (StG)
October 8	Soil and sediment chemistry I	Simpson (UTSC)
October 15	Soil and sediment chemistry II (<i>workshop</i>)	Simpson (UTSC)
October 22	Sorption interactions with soils and sediments	Simpson (UTSC)
October 29	Concepts in analytical environmental chemistry (<i>workshop</i>)	Simpson (UTSC)
November 5	<i>How to write a literature review paper (Note: 10 am to noon)</i>	Newman (StG)
November 12	Toxicology	D'eon (StG)
November 19	Partitioning I; bioavailability, environmental fate models	Muir (StG)
November 26	Partitioning II; bioaccumulation (<i>workshop</i>)	Muir (StG)
December 3	Food chain models and chemical space plots (<i>workshop</i>)	Muir (StG)

Evaluation

Assignments and workshop participation 30 %

Due dates: Abbatt assignment (Sept 17 and Oct 1), Simpson assignment (Oct 22 and Nov 5)

Term paper 30 %

Due dates: Dec 10 for the full paper; Nov 12 for an outline (i.e., title and one paragraph)

Exam - closed-book, in-class, 3-hours 40 %

Date: Dec 17

Note: Late assignments and papers lose 10% value per day.

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/).

Normally, students will be required to submit their course essays to the University's plagiarism detection tool for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the tool's reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of this tool are described on the Centre for Teaching Support & Innovation web site (<https://uoft.me/pdt-faq>).

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:

The following are some important links to help you with academic and/or technical service and 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 [Writing Centre](#)
- 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.