

## CHM 1430S: Advanced Topics in Atmospheric Chemistry

Winter/Spring 2024

**Instructors:** Jon Abbatt (course coordinator, jonathan.abbatt@utoronto.ca), Arthur Chan (arthurwh.chan@utoronto.ca), Jennifer Murphy (jen.murphy@utoronto.ca)

The class will meet on Mondays and Fridays, from 1:10 to 2 pm, i.e., first class is Monday, January 8, 2024. On Mondays the class will either meet in Davenport West or Lash Miller 319, depending on availability.

This is an advanced topics seminar course on atmospheric chemistry; CHM415/1415 is the pre-req. We will cover different topics each week, including kinetics, cloud activation, experimental methods, partitioning, deposition, and meteorology. The Monday class will focus on fundamental concepts, introduced by the instructor and reinforced by discussing a pre-assigned “classic” paper on the topic. The Friday class will be led by two student presentations, each on a pre-assigned paper on the same topic.

Evaluation: 50% presentations, 50% oral participation

Presentations: At a minimum, a presentation presents a clear summary of the main points of the paper, identifying the goals, methods, results, and implications of the work. A good presentation goes further than that – it provides the context for the topic, relates the results to other findings in the literature, provides discussion points for the audience, and critically analyzes the work. One measure of a good presentation is the degree to which it promotes discussion in the class.

Participation: All students are expected to participate in each class, with at least one question/comment about each paper under discussion. There are many ways to participate, e.g., by asking questions, answering questions posed, and contributing discussion points. Discussion must be respectful of all students in the class. If you are ill or need to miss a class, please inform the instructor for that week.

One week off: We know that life can get busy, so students can choose to not participate in the reading and discussion of papers for one week during the semester (so long as that they are not scheduled to present that week).

### Class Schedule

Week	Monday Instructor	Friday Instructor	Topic
Jan 8	Jen	Jen	Homogeneous kinetics
Jan 15	Jon	Jon	Multiphase kinetics
Jan 22	Arthur	Arthur	Partitioning
Jan 29	Arthur	Arthur	Partitioning
Feb 5	Jon	Jon	Gas phase composition
Feb 12	Jen	Jen	Gas phase composition
Feb 19	Reading Week		
Feb 26	Arthur	Arthur	Aerosol composition
Mar 4	Arthur	Arthur	Aerosol composition
Mar 11	Jon	Jon	Cloud Activation
Mar 18	Jon	Jon	Cloud Activation
Mar 25	Jen	Jen	Deposition
Apr 1	Jen	Jen	Meteorology

Students with accommodations - Students with diverse learning styles and needs are welcome! 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. Please remember that some accommodation requests are required to be submitted at least one week in advance of the course element deadline.

Learning environment - 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.

Privacy issues - Students may create audio-recordings of in person classes only, for their personal use. Such recordings are intended to permit class content review to enhance understanding of the topics presented. Audio-recordings are not substitutes for attending class. Students should note that since audio and video recordings are to be permitted, their voice may be recorded by others during the class. Please speak to the instructor if this is a concern for you. Students agree to the following terms when creating audio recordings of lectures:

- Recordings are not to be distributed without the permission of the instructor via the Internet, using social media such as Facebook, peer-to-peer file sharing such as One Drive or Dropbox, or other distribution channels.
- Recordings are not to be shared with other classmates unless they are to be used in collaborative assignments, or if the instructor permits for other reasons.

Non-compliance with these terms violates an instructor's intellectual property rights and the Canadian Copyright Act. Students violating this agreement will be subject to disciplinary actions under the Code of Student Conduct.

#### Technology Requirements

Specific guidance from the U of T Vice-Provost, Students regarding student technology requirements is available here: <https://www.vicprovoststudents.utoronto.ca/covid-19/tech-requirements-online-learning/>. Advice for students more broadly regarding online learning is available here: <https://onlinelearning.utoronto.ca/getting-ready-for-online/> This course requires the use of computers, and of course sometimes things can go wrong when using them. You are responsible for ensuring that you maintain regular backup copies of your files, use antivirus software (if using your own computer), and schedule enough time when completing an assignment to allow for delays due to technical difficulties. Computer viruses, crashed hard drives, broken printers, lost or corrupted files, incompatible file formats, and similar mishaps are common issues when using technology, and are not acceptable grounds for a deadline extension.

#### 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 (<https://governingcouncil.utoronto.ca/secretariat/policies/code-behaviour-academic-matters-july-1-2019>) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences. Potential offences include, but are not limited to:

In papers and assignments:

1. Using someone else's ideas or words without appropriate acknowledgement.
2. Submitting your own work in more than one course without the permission of the instructor.
3. Making up sources or facts.
4. Obtaining or providing unauthorized assistance on any assignment.

On tests and exams:

1. Using or possessing unauthorized aids.
2. Looking at someone else's answers during an exam or test.
3. Misrepresenting your identity.

In academic work:

1. Falsifying institutional documents or grades.
2. Falsifying or altering any documentation required by the University.

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 <https://www.academicintegrity.utoronto.ca/>). Here is an additional website to look at: <http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize>.

#### 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/>.

#### 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 and Support

The following are some important links to help you with academic and/or technical service and support:

- General student services and resources at [Student Life](#)
- Full library service through [University of Toronto Libraries](#)
- Resources on conducting online research through [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.