

## ***CHM1401 - Transport and Fate of Chemical Species in the Environment***

This is the core course for new graduate students in environmental chemistry, and provides an introduction/refresher to concepts from 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.

We meet from 9:00 - 12:00 on Tuesdays in LM 319, with the time often divided into a two-hour lecture and one-hour workshop. Active participation of students is encouraged and expected at all times. Readings and assignments for the course will be posted on the Quercus site ([q.utoronto.ca](http://q.utoronto.ca)) and students are responsible for checking the site regularly for updates and resources.

### **Instructors**

Jen Murphy (coordinator), [jen.murphy@utoronto.ca](mailto:jen.murphy@utoronto.ca)

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### **Lecture Schedule**

Sep 10	Introduction, Physical Environment (JM)
Sep 17	Thermodynamics (JD)
Sep 24	Gas- and Multi-phase Reactions (SM)
Oct 1	Chemical Partitioning - Hydrophobicity, sediments, soils (DM)
Oct 8	Carbon cycle (JM)
Oct 15	Chemical Partitioning - Bioaccumulation, bioavailability (DM)
Oct 22	Visualizing bioaccumulation - chemical space plots and models (DM)
Oct 29	Aqueous reactions (SM)
Nov 5	Biological reactivity and toxicity (SM)
Nov 12	Measurement techniques (JM)
Nov 19	Reaction Kinetics (JD)
Nov 26	Photochemistry (JD)

### **Evaluation**

Assignment from each instructor + workshop participation (due: JM – Oct 15, DM – Oct 29, SM – Nov 12, JD – Dec 3)	50 %
Term paper - submit by email to JM (outline due Nov 1, paper due Dec 6)	25 %
Final exam (Dec 12) (two-sided equation sheet can be brought to exam)	25 %

### **Accommodations**

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability or health consideration that may require accommodations, please contact Accessibility Services at (416) 978 8060; <http://www.studentlife.utoronto.ca/as>, or contact Professor Murphy if you have questions.