



## EESC20H3 GEOCHEMISTRY

Fall term 2019

Lecture	Tutorial
Mondays 1-3pm in Room MW 120	Thursdays 12-1pm in Room IC 230
<b>Instructor:</b> Professor M.J. Simpson	<b>Instructor:</b> Ms. Meiling Man
<b>Office:</b> Room SY322	<b>Office:</b> Room SY315
<b>Email:</b> myrna.simpson@utoronto.ca	<b>Email:</b> meiling.man@mail.utoronto.ca
<b>Office Hours:</b> TBD or by appointment	<b>Office Hours:</b> by appointment

**COURSE DESCRIPTION:** The course will cover fundamental aspects of chemical processes occurring at the Earth's surface. Terrestrial and aquatic geochemical processes such as: mineral formation and dissolution, redox, aqueous-solid phase interactions, stable isotopes, and organic geochemistry in the environment will be covered.

**PREREQUISITES:** CHMA10H3, CHMA11H3, and EESB15H3. **EXCLUSIONS:** EESD32H3, CHM210H, GLG202H, GLG351H. *All students must have the appropriate prerequisites for this course.*

### GRADE BREAKDOWN:

Assignment 1: Geochemical modelling and solution chemistry	13%
Assignment 2: Sorption and exchange processes	13%
Assignment 3: Organic geochemistry	13%
Midterm exam	20%
Comprehensive final exam	35%
Tutorial Attendance/Participation	6%

### LATE WORK

Late assignments will not be accepted and assigned a grade of zero.

### COURSE LECTURE NOTES & LECTURE ATTENDANCE

There is no required textbook for this course and lecture notes will cover all topics in detail. Lecture notes (as a pdf) will be posted on Quercus. Examination material will include emphasized lecture material as discussed in either the lecture or tutorial sessions. Key points will be summarized in class using the "Checkpoint" slides.

## **PLAGIARISM**

Normally, students will be required to submit their course essays to Turnitin.com 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 Turnitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com web site.

University of Toronto Scarborough code of Behavior on Academic Matters states that "it shall be an offense for a student knowingly: to represent as one's own any idea or expression of an idea or work of another in any academic examination or term test or in connection with any other form of academic work, i.e., to commit plagiarism."

**Any form of plagiarism will not be tolerated.** Students suspected of plagiarism will be reported based on University policy and code of behavior (please refer to the University Calendar for more details).

## **E-MAIL ENQUIRIES:**

E-mail is not an effective means for teaching or discussion of scholarly material. Students are encouraged to attend office hours (or make an appointment to meet outside of office hours) and discuss topics in person with the instructor.

## **ACCESSIBILITY NEEDS**

The University of Toronto is committed to accessibility. If you require accommodations for a disability, or have any accessibility concerns about the course, the classroom or course materials, please contact The UTSC Accessibility Services as soon as possible: <http://www.utsc.utoronto.ca/~ability/>

## **WRITING SUPPORT**

The University of Toronto Scarborough Writing Centre (<http://utsc.utoronto.ca/twc/>) offers writing support to all students in several forms. Students are advised to take advantage of their programs for assistance with scientific writing.

<b>Week of</b>	<b>Lecture (Mondays)</b>	<b>Tutorial (Thursdays)</b>
September 9 <sup>th</sup>	-Course introduction -Solution and solid phase chemistry	No Tutorial
September 16 <sup>th</sup>	-Solution and solid phase chemistry (continued)	Solution and Solid Phase Chemistry Calculations
September 23 <sup>rd</sup>	-Solution and solid phase chemistry (continued) -Sorption phenomena and exchange reactions	Visual Minteq Demo Assignment #1 Questions
September 30 <sup>th</sup>	<b>Assignment #1 Due</b> -Sorption phenomena and exchange reactions (continued)	Assignment 1 Return & Discussion
October 7 <sup>th</sup>	-Reduction and oxidation (redox) processes	Assignment #2 Questions
October 14 <sup>th</sup>	<b><i>FALL SEMESTER READING WEEK (No Lecture or Tutorial)</i></b>	
October 21 <sup>st</sup>	<b>Assignment #2 Due</b> -Isotope geochemistry	Assignment 2 Return & Discussion
October 28 <sup>th</sup>	<b>MIDTERM EXAM in room MW120 during class time</b>	No Tutorial
November 4 <sup>th</sup>	-Organic geochemistry and the global carbon cycle	Midterm Exam Return & Discussion
November 11 <sup>th</sup>	-Organic geochemistry and the global carbon cycle (continued)	Organic Geochemistry case study
November 18 <sup>th</sup>	-Geochemistry of organic pollutants, metals and inorganic compounds	Assignment #3 Questions
November 25 <sup>th</sup>	<b>Assignment #3 Due</b> -Geochemistry of organic pollutants, metals and inorganic compounds	Assignment 3 Return & Discussion
December 2 <sup>nd</sup>	-Geochemistry of organic pollutants, metals and inorganic compounds	Final Exam Questions
To be announced (scheduled by the Registrar's Office)	<b>COMPREHENSIVE FINAL EXAM</b>	

\* The assignment due dates may be extended if the appropriate lecture material is not covered within 1 week of the due date. Assignments will be available in advance of the due dates on Quercus. Due dates will be clearly stated on the assignments as well as submission instructions.