EESC20H3 GEOCHEMISTRY
COURSE SYLLABUS 2012-13

THURSDAYS FROM 1-3PM IN ROOM BV 264

INSTRUCTOR: Professor M.J. Simpson
OFFICE LOCATION: SY322 **E-Mail:** msimpson@utsc.utoronto.ca
OFFICE HOURS: to be announced

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 1.0 credit from any of EESB02H3, EESB04H3, EESB05H3, and EESB15H3. **EXCLUSIONS:** EESD32H3, CHM210H, GLG202H, GLG351H.
All students must have the appropriate prerequisites (no exceptions!).

GRADE BREAKDOWN:

Assignment 1: Geochemical computer modelling	**20%**
Assignment 2: Organic matter biomarker research paper	**20%**
Midterm exam	**25%**
Comprehensive final exam	**35%**

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

COURSE LECTURE NOTES:
There is no required textbook for this course and lecture materials will cover all topics in detail. Library resources are also provided to assist with the Organic matter biomarker assignment.

Lecture notes (as a pdf) will be posted on the course intranet page. Examinable material will include emphasized lecture material only and not include materials from library resources (see below) unless specifically discussed or emphasized during the lecture.

LIBRARY RESOURCES:

There is no required textbook for this course but there are a number of recommended library resources (see list below). Library resources have been placed on reserve at the UTSC library for use in this course and include:

1) Introduction to Organic Geochemistry by S. Killops and V. Killops
2) Biomarker Guide – Volumes 1 and 2 by K. E. Peters, C. C. Walters, and J. M. Moldowan
3) Chemical Biomarkers in Aquatic Ecosystems by T. S. Bianchi & E. A. Canuel

PLAGIARISM

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 ENQUIREIS:

E-mail is not an effective means for teaching or discussion of scholarly material. Students are encouraged to attend 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://ctl.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.

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LECTURE SCHEDULE

Date	Topic	Assignment Due
Thursday, September 13th	-Course orientation and introduction to geochemistry -Solution and solid phase chemistry	
Thursday, September 20th	-Solution and solid phase chemistry (continued)	
Thursday, September 27th	-Solution and solid phase chemistry (continued) -Sorption phenomena and exchange reactions	
Thursday, October 4th	-Sorption phenomena and exchange reactions (continued)	
Thursday, October 11th	-Reduction and oxidation (redox) processes	**Assignment 1** (Geochemical computer modelling)
Thursday, October 18th	-Isotope geochemistry	
Thursday, October 25th	**Midterm Exam**	
Thursday, November 1st	-Organic geochemistry and the global carbon cycle	
Thursday, November 8th	-Organic geochemistry and the global carbon cycle (continued)	
Thursday, November 15th	-Geochemistry of organic pollutants and heavy metals	
Thursday, November 22nd	-Geochemistry of organic pollutants and heavy metals (continued)	
Thursday, November 29th	-Geochemistry of organic pollutants and heavy metals (continued)	**Assignment 2** (Organic matter biomarker paper)
To be announced (scheduled by the Registrar's Office)	**Final Exam**	