

COURSE OUTLINE – GEO 1111 Introduction to Earth Systems (Winter 2020)

Course description

This is a course meant for students in the faculties of Science or Engineering who want to learn more about the origin of our planet Earth, how it evolved throughout its 4.6-billion-year history, and how it controls our physical environment through slow but massive tectonic cycles and processes. We will explore important themes such as the materials that compose our planet, the volcanic, erosional and tectonic processes that shape its surface, the origin of life, Earth resources and document the massive geochemical cycles that operate between the Earth's deep interior and the oceans and atmosphere.

Professors

Dr. Pia Pleše and Dr. Ian Clark

Department of Earth & Environmental Sciences

Pia Pleše - STEM 458, pplese@uottawa.ca

office hours: Tuesdays, 9:30 – 11:00 h

Ian Clark – ARC 422, idclark@uottawa.ca

office hours:

Course Lectures

Mondays 16:00-17:20 MRN 150 Auditorium

Wednesday 14:30-15:50 MRN 150 Auditorium

Course coordinator & teaching assistants (TAs)

The course coordinator will act as a link between the professors and the students. Please address ALL QUESTIONS related to this course to the course coordinator, as he/she will be able to answer most questions related to the course's organization, content, and evaluation. They will relay any relevant questions/requests to the professor. The course coordinator and TAs will host office hours for additional assistance with specific questions about lecture material. OFFICE HOURS ARE HELD IN MRN 102.

Coordinator

• Marc Faßbender

e-mail: GEO1111@uottawa.ca

Teaching assistants

Name	e-mail	office	office hours
Marc Faßbender	mfass081@uottawa.ca	meet in MRN 102	see next page
Sara Rzegocka	srzeg068@uottawa.ca		
Alexandra Gray	agray090@uottawa.ca		
Gol Hafezian	ghafe100@uottawa.ca		
Shelina Akter	sakte032@uottawa.ca		
Patricia Fraino	pfrai026@uottawa.ca		

Office hours schedule - HELD IN MRN 102

Hours	Monday	Tuesday	Wednesday	Thursday	Friday
8:30-9:00					
9:00-9:30					
9:30-10:00		PP office hours (STEM 458)			
10:00-10:30					
10:30-11:00					
11:00-11:30					
11:30-12:00					
12:00-12:30					
12:30-13:00					
13:00-13:30					
13:30-14:00					
14:00-14:30					
14:30-15:00			<i>LECTURE</i>		
15:00-15:30			<i>LECTURE</i>		
15:30-16:00			<i>LECTURE</i>		
16:00-16:30	<i>LECTURE</i>				
16:30-17:00	<i>LECTURE</i>				
17:00-17:30	<i>LECTURE</i>				

Tentative course program*

Week/prof.	Day	Date	Lecture #	Topic	Chapter
Week 1 - PP	Mon.	Jan. 6	Lecture 1	Introduction	prelude
	Wed.	Jan. 8	Lecture 2	Cosmology & Planets	Ch 1
Week 2 - PP	Mon.	Jan. 13	Lecture 3	Earth's Structure	Ch 2
	Wed.	Jan. 15	Lecture 4	Plate Tectonics I + 1 st exam	Ch 3
Week 3 - PP	Mon.	Jan. 20	Lecture 5	Plate Tectonics II	Ch 4
	Wed.	Jan. 22	Lecture 6	Minerals	Ch 5
Week 4 - PP	Mon.	Jan. 27	Lecture 7	Magma and Igneous Rocks	Ch 6
	Wed.	Jan. 29	Lecture 8	Sediments + 2 nd exam	Ch 7
Week 5 - PP	Mon.	Feb. 3	Lecture 9	Metamorphic Rocks	Ch 8
	Wed.	Feb. 5	Lecture 10	Volcanic eruptions	Ch 9
Week 6 - PP	Mon.	Feb. 10	Lecture 11	Earthquakes	Ch 10
	Wed.	Feb. 12	Lecture 12	Crust. Deformation + 3 rd exam	Ch 11
Week 7	Mon.	Feb. 17		February reading week	
	Wed.	Feb. 19		February reading week	
Week 8 - IC	Mon.	Feb. 24	Lecture 13	Geologic time	Ch12/13
	Wed.	Feb. 26	Lecture 14	Energy Resources	Ch14
Week 9 - IC	Mon.	Mar. 2	Lecture 15	Mineral Resources	Ch15
	Wed.	Mar. 4	Lecture 16	The Earth's Surface + 4 th exam	Interlude F
Week 10 - IC	Mon.	Mar. 9	Lecture 17	Mass movements	Ch16
	Wed.	Mar. 11	Lecture 18	Streams and Floods	Ch17
Week 11 - IC	Mon.	Mar. 16	Lecture 19		
	Wed.	Mar. 18	Lecture 20	Oceans and Coasts + 5 th exam	Ch18
Week 12 - IC	Mon.	Mar. 23	Lecture 21	Groundwater	Ch19
	Wed.	Mar. 25	Lecture 22	The Atmosphere	Ch20
Week 13 - IC	Mon.	Mar. 30	Lecture 23	Cryosphere and Ice Ages	Ch21
	Wed.	Apr. 1	Lecture 24	Global change + 6 th exam	Ch23
final exam		TBD		FINAL EXAM	

*Schedule subject to change. PP = Pia Pleše, IC = Ian Clark
Ch refers to the pertinent chapter in Marshak: *Earth: Portrait of a Planet*, 6th Ed.

Course Evaluation

Exam 1	10%
Exam 2	10%
Exam 3	10%
Exam 4	10%
Exam 5	10%
Exam 6	10%
Final exam	40%
TopHat participation	10%

Note there are 6 exams during the term, yet the evaluation is for only 5 exams (+ final). Your lowest mark of the 6 in-term exams will be dropped, unless you miss an exam, then that missed exam (0%) is dropped from the evaluation.

Missed exams

You are encouraged to review the University of Ottawa's policy on missed exams, as all the rules outlined will be applied:

<https://www.uottawa.ca/administration-and-governance/academic-regulation-9-evaluation-of-student-learning>

There will be **no make-up exams** for this course. If you miss 1 exam, then that 1 missed exam (0%) is dropped from the evaluation. If you have a valid excuse for missing more than 1 exam, the percent value of the missed exam will be equally redistributed and added to the percent values of other exams.

According to course regulations, examinations must be taken on the day and time designated, unless there is a serious personal illness, accident or death in the immediate family (parent, child, brother, sister, spouse or grandparent), or an extraordinary situation (e.g. major sport or art competition). The student must notify us by email and provide physical documented evidence of the reason for missing the examination **within a week before or after the exam date**. Acceptable documentation is as follows: a doctor's statement in case of personal illness, an accident report in the case of an accident, an obituary or funeral program in the case of death in the immediate family, or any additional proof.

Course Expectations

Read requested assignments before lecture, come to class, take notes, keep current with the course's Brightspace website and ask questions. Follow the lecture in TopHat and answer in-lecture questions. We have no tolerance whatsoever for academic fraud and we will be vigilant.

Virtual Campus

Material related to this course (pdfs of lectures, Q&A sheets, etc.) will be posted on the Virtual Campus portal (Brightspace) on the University of Ottawa web site after the lectures. For any problems regarding access to the course material via Virtual Campus, please contact Teaching and Learning Support Service.

In addition to course content, this is an efficient way to communicate with other students registered in the class, TAs, and course coordinators. We will periodically post announcements and changes on the course site, as well as all exam marks.

TopHat

We will be integrating the TopHat platform into the course, to promote interactive learning during class. You can access TopHat via your phone or laptop. There will be in-lecture small questions asked through TopHat. In-lecture exams will be conducted through TopHat. TopHat costs 30 CAD per semester. N.b. TopHat does not replace Brightspace.

Textbook

The lectures will be following the outline of Stephen Marshak's book "Earth: Portrait of a planet", 6th edition.

Suggested textbooks (available at the Morisset Library)

Marshak, S. (2018). Earth: Portrait of a planet – 6th edition. W.W. Norton & Co., Inc.

Tarback, Lutgens, & Tasa (2013). EARTH – An introduction to physical geology – 11th edition. Pearson/Prentice Hall.

Tarback, E.J., Lutgens, F.K., Tsujita, C.J. (2005). EARTH – An introduction to physical geology, Canadian edition. Prentice Hall.
CALL# QE 28.2.T37

Smith, G.A., Pun, A. (2006). How does Earth work? Physical geology and the process of science. Pearson/Prentice Hall.
CALL# 28.2 S59

Grotzinger, J., Jordan, T.H., Press, F., Siever, R. (2007). Understanding Earth – 5th edition. Freeman.
CALL# QE 28.P9

Stanley, S. M. (1999). Earth System History. Freeman.
CALL# QE 28.3.S735

Hamblin, W. K. (1998). Earth's dynamic systems. Prentice Hall.
CALL# QE 28.2.H35

Thompson, G. R. (1993). Modern physical geology. Saunders College Pub.
CALL# QE 28.2.T5

Skinner, B. J. (2004). Dynamic earth : an introduction to physical geology. John Wiley & Sons.
CALL# QE 28.2.S55