

Dariush Motazedian, Room 2115, Tel. (613) 520 2600 Ext. 8536

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ERTH 2105 [0.5 credit], Geodynamics

The structure, composition, and rheological properties of the Earth: lithosphere, mantle and core. Plate tectonics and its relation to geophysical fields, driving mechanisms, and processes at plate boundaries and in plate interiors.

Prerequisites: EARTH 1006 or permission of the Department.

Lectures two hours a week and a laboratory three hours a week

Office hours; Friday 10:00-11:00, in HP 2115

- **Please note the first lab is after the second lecture.**
- **Please bring your own laptop with its wireless connection for the first lab!**

Course Topics (Tentative order)

- Seismology and the internal structure of the Earth from seismology
- Gravity and isostasy
- lithosphere flexure and post glacial rebound
- Plate tectonics; geometry and kinematics
- Geomagnetic field and palaeomagnetism
- Heat flow and thermal parameters
- Temperature in the Earth's interior
- Sea-floor spreading and oceanic lithosphere
- The continental lithosphere

COURSE REQUIREMENTS:

- Attendance at class and laboratories is mandatory. It is required that you email me Dariush.Motazedian@carleton.ca to advise of absences due to illness or emergencies.
- The lab component of the course must be passed in order to pass the course. You must pass the lab component of the course in order to write the final exam.
- The final exam must be passed in order to pass the course.
- Labs must be handed in on time. Late labs will be accepted in the instance of illness, with medical note, or in the instance of emergencies, by consultation with D. Motazedian.
- It is the student's responsibility to come to classes and labs prepared. Reading assignments are mandatory.
- It is your responsibility to refer regularly to the course outline for lecture topics, reading assignments, laboratory topics and pre-lab review or homework. The workload and schedule is laid out for the entire term in documents posted on CU Learn.
- Regularly log onto the CU Learn course website to check for announcements, course information, laboratory assignments and lecture material.
- Lab exercises will be posted on CU Learn. Print them off and bring to the lab period.

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MARK DISTRIBUTION:

- Class attendance 5%
- Laboratory attendance & assignments 20%
- Midterm test (October 19) 25%
- Final exam 50%

Note: The instructor *is required* to report all incidents (or suspected incidents) of plagiarism to the Dean.

TEACHING ASSISTANTS:

Course Text; Fowler, C.M.R., 2005, The Solid Earth, 2nd edn. Cambridge Univ. Press.

Note: Books were ordered at book store. You may also buy used ones from Haven Books, 43 Seneca St, Ottawa (613) 730-9888.

ACADEMIC INTEGRITY

It is your responsibility to review Carleton's policy on Academic Integrity - Section 14 of the Calendar.

<http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/acadregsuniv14/>

Plagerism

The instructor is required to report all incidents (or suspected incidents) of plagiarism to the Dean. All work handed in must be your own. Plagiarism and cheating are viewed as being particularly serious and the sanctions imposed are accordingly severe. Students are expected to familiarize themselves with and follow the Carleton University Student Academic Integrity Policy. The Policy is strictly enforced and is binding on all students. Plagiarism and cheating – presenting another's ideas, arguments, words or images as your own, using unauthorized material, misrepresentation, fabricating or misrepresenting research data, unauthorized co-operation or collaboration or completing work for another student – weaken the quality of the graduate degree. Academic dishonesty in any form will not be tolerated. Students who infringe the Policy may be subject to one of several penalties including: expulsion; suspension from all studies at Carleton; suspension from full-time studies; a refusal of permission to continue or to register in a specific degree program; academic probation; or a grade of Failure in the course.

Requests for Academic Accommodation

You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are as follows:

Pregnancy obligation

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

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Religious obligation

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

Academic Accommodations for Students with Disabilities

If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. carleton.ca/pmc

Survivors of Sexual Violence

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and its survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: carleton.ca/sexual-violence-support

Accommodation for Student Activities

Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. <https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>

For more information on academic accommodation, please contact the departmental administrator or visit: students.carleton.ca/course-outline