

Dynamic Earth

Earth Sciences 101

Section: D200

Term: 2010 Fall

Instructor: Randal Mindell
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Discussion Topics: General: REQUIREMENT DESIGNATION: B-Sci

Geology is the science that studies Earth - how it was formed, how it evolved, how it works, and how we can help to preserve it. EASC 101 is an introductory course to the Earth Sciences that has been designed both as a foundation course for Earth Science majors and as a terminal course for those in other disciplines. Lectures investigate geologic theory, while laboratory sessions focus on "hands on" exercises emphasizing rock and mineral identification, Earth structure and processes.

Course Topics:

1. Earth Materials

- Structure and composition of the Earth
- Minerals: Crystal structure, rock-forming minerals
- Igneous rocks: Magmagenesis, crystallization, volcanism
- Sedimentary rocks: Weathering, erosion, deposition
- Metamorphic rocks: Effect of pressure & temperature

2. Earth Processes

- Geologic time, time and life
- Structural geology (crustal deformation)
- Plate tectonics: Processes and environments

3. Surface and near-surface processes

- Water: Groundwater, rivers
- Ice: Glaciers, ice ages
- Wind: Deserts, coastal erosion
- Gravity: Mass Wasting
- Earthquakes

4. Earth Resources

- Energy, minerals, water

Course Organization:

Two 1-hour lectures and one 3-hour laboratory per week.

Grading: Written Laboratory Assignments and Quizzes:	20%
Mid-Term Theory Test (2 exams, 10% each):	20%
Mid-Term Laboratory Test:	12.5%
Final Laboratory Test:	12.5%
Final Theory Test:	35%

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Required Texts: Course Text:

Tarbuck, E.J, Lutgens F.K. and Tsujita, C.J. 2009. Earth: An Introduction to Physical Geology, Second Canadian Edition, Pearson. ISBN 0-13-613865-9

OR

Tarbuck, E.J, Lutgens F.K. and Tsujita, C.J. 2005. Earth

Recommended Texts: None.

Materials/Supplies: Pencil, ruler (30 cm), white eraser, calculator, protractor.

Prerequisite/Corequisite: None.

Notes: NOTE: Students with credit for GEOG 112 cannot take this course for further credit.

NOTE: This is a lab science course and attendance at the labs is mandatory.

This outline is derived from a course outline repository database that was maintained by SFU Student Services and the University's IT Services Department. The database was retired in 2014 and the data migrated to SFU Archives in 2015.