Introduction To Earth Science

ENV 1050 Course Syllabus – Spring 2020

Instructor: Leslie Kanat, Ph.D.

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Office hours: Scheduled office hours are from 8:30 to 9:30 a.m. on Monday through Thursday; otherwise, stop in anytime, or schedule an appointment.
Office location: Bentley 332.

Lecture: Tuesday and Thursday, 1:00 to 2:15 p.m., in Bentley 206

Laboratory: Wednesday, 1:00 to 3:00 p.m., in Bentley 101

Text: Marshak, Stephen and Robert Rauber (2017). *Earth Science: The Earth, The Atmosphere, and Space.* W.W. Norton and Company, New York, 853 pages.

Objectives

Introduction to Earth Science will expose you, the student, to the principles that underlie our understanding of how Earth evolves. You will learn about the wide variety of processes associated with geological activity and begin to develop an appreciation for geological time, plate tectonics, climate change, and many of Earth's cycles. This knowledge may help you make intelligent decisions about events that affect humankind, and inspire you to learn more about our common future.

Comments

It is expected that you will **read** appropriate sections of the textbook and **attend** all laboratory sessions; use the online links as a secondary textbook. I shall cover the material in the textbook and online links during lectures and augment it with examples not cited in the text.

Please **read** the appropriate sections of the book **prior** to attending lecture, keep **good lecture notes**, **ask questions in class**, and **come see me** if you are having any difficulties. Please, do not wait to seek additional assistance in this course. Be prepared for lecture and lab – **read the material first**.

Distribution of grades

The final grade is determined by a weighted average using the following distribution:

20%	First Exam:	Thursday, 20 February 2020
20%	Second Exam:	Thursday, 2 April 2020
25%	Final Exam:	date to be determined by NVUJ (week of 11 May 2020)
35%	Laboratories:	Expect a variety of activities and exercises

Comments regarding assessment

- Two-minute quizzes will be given throughout the semester at the beginning of the class period.
- All exams and quizzes are cumulative – the pyramid exam style will be used in this class.
- If you miss an exam, you have one week to take a make-up; make-up exams are entirely essay.
- There are no make-ups offered for the final exam.
- There are no make-ups offered for missed laboratory periods.
- The laboratory sessions count for approximately ⅓ of your final grade – please do not wait until the last day to complete the laboratory assignments.
- Everything counts – no grades are dropped.
- All material submitted for a grade must be presented in professional form – type everything; there will be a reduction of 20% for assignments that are not typed.
- Assignments are due at the start of the class period – otherwise they are late. For each calendar day (24-hour period) an assignment is late it will be down-graded by 10%. Please note that I recognize extraordinary circumstances may arise that would mitigate the late fee.
- I will be happy to meet with you at any time, except for the day before an assignment is due.
- Extra credit, day-long field trip on Saturday, 18 April 2020 (alternate date: 2 May 2020), please make a note in your calendar.

Accommodations

Students with a documented disability who require accommodations should acquire an Academic Accommodations Form from Academic Support Services (Dewey 123, phone 635-1264).

Plagiarism

Students at Northern Vermont University are expected to be honest in all their academic work. You are responsible for knowing what specific acts constitute plagiarism. If you are unsure, then consult me, or read the Undergraduate Catalogue. Academic dishonesty in any form is prohibited and unacceptable.

ENV 1050 Course Schedule – Spring 2020

Week	Lecture Topics	Marshak & Rauber (2017) Textbook
1	Introduction to Earth science and the nature of science	xxi, xxvi-xxvii, 3-9
	Origin of the universe	25-34, 758-762, 837-843
	Lab: topographic maps	388-389
2	Origin of the solar system and Earth	34-38, 314-316, 776-811
	Lab: topographic maps (continued)	
	Lab: scaled solar system	
3	Atoms, bonding, and symmetry	89-94
	Minerals and rocks	67-84 96-108
	Lab: minerals and rocks	
4	Unstable isotopes and absolute dating	303-307, 364-367
	Geologic time and relative dating	283-286, 307-309
	Lab: relative dating	
5	Gravity and isostacy	26, 239-240
	Lab: density	
	First Exam: Thursday, 20 February 2020	all of the above
6	Winter Break	-
7	Earthquakes and Earth's interior	247-279
	Magnetism and magnetic reversals	38-39, 76-81
	Lab: seismicity	
8	Plate tectonics	51-76, 82-85, 142-145
	Lab: magnetism and plate tectonics	
9	Igneous rocks	115-139
	Volcanoes and volcanic processes	
	Lab: igneous rocks	

(course schedule continued on following page

ENV 1050 Course Schedule – Spring 2020 (continued)

Week	Lecture Topics	Marshak & Rauber (2017) Textbook
10	Weathering, soils, and mass wasting	157-164, 392-411
	Glacial processes and landforms	478-504
	Lab: glaciers (and field work)	
11	Sedimentary rocks and structures	155-156, 165-179
	Lab: porosity and permeability	
	Second Exam: Thursday, 2 April 2020	all of the above
12	Spring Break	-
13	Sedimentary environments and surface water	390-392, 415-431
	Groundwater and Karst topography	438-458
	Oceans, tides, and eustacy	511-527, 555-561
	Lab: groundwater	
	Field trip: Saturday, 18 April 2020	
14	Metamorphic rocks and rock deformation	191-206, 217-236, 302
	Atmospheric structure and composition	587-592, 601-604
	Lab: rock deformation	
15	Atmospheric temperature and climate change	32, 593-594, 612-615, 697-703, 709-733
	Moisture, clouds, fog and precipitation	594-597
	Lab: seasons	704-707
	Alternate Field trip (if previous trip is canceled): Saturday, 2 May 2020	
16	Air pressure, wind, and circulation	
	Air masses and fronts	642-655
	El Niño and severe weather	631-642, 660-685
	Lab: relative humidity	
F	Cumulative final exam: date yet to be determined by NVUJ Administration (no make-ups)	

Please use the index in the back of the textbook for additional reading.

We shall modify and improve upon the course outline as the term progresses.