

Earth and Environmental Sciences
Introduction to Earth Sciences I
Summer 2017

S1011D - lecture and lab (4 credits) / S1411D - lecture only (3 credits)

- Instructor:** Dr. Vic DiVenere
Office Hours: By appointment. See me before or after class, email me, or leave a message in the department office (560 Schermerhorn, 854-4525)
Email: vjd1@columbia.edu
Web Site: www.columbia.edu/~vjd1/ (lecture summary notes, exam reviews)
Courseworks: courseworks.columbia.edu (classroom slide presentations, quizzes)
Textbook: Essentials of Geology, 12th Ed., Lutgens, Tarbuck & Tasa
Lab Manual: Laboratory Manual in Physical Geology, 10th Ed., Busch & Tasa
Available at: Columbia University Bookstore or your favorite online bookseller
- Meeting Time:** Monday through Thursday, 10:45 to 12:20.
Lab Section: The lab meets on Tuesdays and Thursdays from 1:00 to 3:10.
Makeup Days: Note: class will meet on, Friday, June 2 as a make-up day for the Monday, May 29, Memorial Day holiday.

Quizzes: Students will take 4 online, open book quizzes in Courseworks.

Writing Assignments: Students will write one short paper, either a summary of the geology and geologic history of the New York City region based on the Central Park Field Trip or, for those who won't be able to attend the entire field trip, a short research paper on a topic approved by Dr. D.

Field Trip: Thursday, June 15 (9:45 - 2:00): Field trip to Central Park studying the Manhattan Schist and the geologic history of New York City. See web site for more details.

Grading:	S1011D (4 credits)	
	lab grade	25%
	quizzes	10%
	field trip summary or research paper	15%
	midterm exam	25%
	final exam	25%
	S1411D (3 credits)	
	quizzes	10%
	field trip summary or research paper	20%
	midterm exam	35%
	final exam	35%

Attendance and class participation will be noted and may affect your grade (for better or worse).

Important Dates

Memorial Day:	Monday, May 29, no class
makeup day:	Friday, June 2, regular class time
Midterm Exam:	Thursday, June 8 during regular class time
Central Park field trip:	Thursday June 15, 9:45-2:00
papers due:	Thursday, June 22
Final Exam:	Thursday, June 29, during regular class time

Sequence Of Study

Topic	Chapter
<i>Origins:</i>	1, 19 & supplemental
The Big Bang	
Formation of the Elements	
Formation of the Solar System and the Chemistry of the Earth	
<i>Earth Materials:</i>	
Primer on Silicate Minerals	3
Igneous Rocks and Volcanoes	4-5
Sedimentary Rocks, Fossil Fuel Resources, and Climate	6-7, 20
Metamorphic Rocks and NYC's Bedrock	8
<i>The Restless Earth:</i>	
Rock Deformation - Crustal Structures	11
Earthquakes and Seismology	9
The Earth's Interior	9
Plate Tectonics	2, 10-11
historical development of continental drift and plate tectonics	
plate boundaries and tectonic processes	
tectonic development of eastern North America	
<i>Surface Processes:</i>	
Soil: the foundation of civilizations, carbon source – carbon sink	6
Groundwater: A Fragile Resource	14
Stream Processes, Landforms, and Flood Hazards	13
Shore Processes, Coastal Erosion, and Sea Level Rise	17
Glacial Climates and NYC's Glacial Landforms	15

See web site for detailed topics list and lecture summary notes.

(www.columbia.edu/~vjd1/)