

EARTH SCIENCE 110: Introduction to Geology

Dr. Christopher Woltemade

Spring 2020

OFFICE: 108 Shearer Hall

TELEPHONE: 477-1143

E-MAIL: cjwolt@ship.edu

OFFICE HOURS: Tues-Thurs 1:00 – 2:00
 Weds 9:00 – 12:00 (or by appointment)

GOALS: The goals of Earth Science 110 are to inform and excite you about geology and to build on your writing, mathematical, and problem-solving skills. The course will provide an understanding of both the field of geology as a science and how geology influences and helps to explain the world around us. Equally important, the course provides opportunities to work on applied projects, interpret data, and prepare laboratory reports. Learning objectives of this course include understanding the scientific method and resulting principles and theories and critically evaluating data to answer questions about the natural world.

TEXT: Lutgens, Tarbuck and Tasa. 2016. *Essentials of Geology*. 13th edition. Prentice Hall.

You also need to purchase a copy of the USGS topographic map for Shippensburg, PA available in the SU bookstore.

ONLINE RESOURCES:

Key documents are available on the course D2L site. Please use this resource extensively--it contains a great deal of useful information.

CLASS PROFESSIONALISM:

Disturbance of class—including any distraction from cell phones—will not be tolerated. After one warning to the class, each instance of using a cell phone or other unapproved device in class will result in the final course grade being lowered one letter grade, regardless of performance, at the instructor's discretion. This is a tobacco-free classroom.

EXAMS: If classes are cancelled on an exam day, the exam will be given during the first meeting when classes resume. Students are expected to take exams at the scheduled time. Only very unusual circumstances (e.g. family emergency, serious illness) are acceptable reasons for missing an exam. You **MUST** notify me prior to the exam date if you will miss an exam, **IN ANY EVENT**. Failure to notify me prior to a missed exam will result in a zero for that exam grade. Make up exams may differ from the original.

HELP: The Learning Center (learning.ship.edu) provides professional aid for you to improve your studies. Tutoring is also available within the Geography-Earth Science Dept. Please feel free to come to my office to ask questions about course matters, geology, the Department of Geography-Earth Science, etc.

GRADING: 600 points are possible.

<u>Points</u>	<u>Item</u>
100 points	Exam 1
100 points	Exam 2
100 points	Exam 3
100 points	Final exam
200 points	Lab assignments

Grades will be based on a minimum of 90% (A), 80% (B), 70% (C), 60% (D). Plus/minus grades may be given to scores $\pm 3\%$ from these values.

LABS: Several lab assignments will be given to help you understand and learn the material. These should be prepared carefully and completely; they will be graded on content (geology), organization and clear presentation of ideas. You cannot pass this course without completing these assignments.

Assignments are due at the *beginning of class time* on the due date.

Late assignments submitted later on the due date will earn 50% credit.

Late assignments submitted after the due date earn no credit.

ATTENDANCE:

Attendance and participation in class are required. If you miss class, you are responsible for obtaining missed material and/or assignments from other students or the instructor. I understand reasonable absences--see me and I will help you get back up to date.

Class attendance will be taken periodically during the semester without prior notice. You are allowed two "free" absences—even excused absences count toward these two. Thereafter, 5 points will be deducted from your semester total for each additional unexcused absence. Official excused absences must be documented.

NOTE:

The instructor is willing to make any reasonable accommodations for students with limitations due to disability, including learning disability. Please see me during the **first week of class** to discuss any special needs you have. Also, any expected religious holiday absences must be provided to the professor in writing **by Jan 24**.

COURSE OUTLINE:

<u>Date</u>	<u>Reading</u>	<u>Topic</u>	
JAN	21	Ch. 1	Course introduction / The science of geology
	23	Ch. 2	Earth structure and plate tectonics
	28	Ch. 9	Earthquakes
	30	Ch. 9	Case study: Earthquakes in the U.S.
FEB	4	LAB	Topographic maps: Symbols and scale
	6	LAB	Topographic maps: Contour lines and elevations
	11		EXAM 1
	13	Ch. 3	Characteristics of minerals
	18	Ch. 3	Mineral classification
	20	LAB	Minerals lab
	25	Ch. 4	Rock cycle, igneous rocks
	27	Ch. 5	Case study: Volcanic features in Hawaii
MAR	3	Ch. 5	Case study: Cascades volcanoes
	5		EXAM 2
			SPRING BREAK
	17	Ch. 6	Weathering and sediments
	19	Ch. 7	Sedimentary rocks
	24		Case study: Cumberland Valley geology
	26		Case study: Marcellus shale
	31	Ch. 8	Metamorphic rocks
APR	2	LAB	Rocks lab
	7		EXAM 3
	9	Ch. 11	Structures and mountains / Case study: Appalachian Mountains
	14	Ch. 13	Hydrologic cycle and stream processes
	16	Ch. 13	Hydrologic cycle and stream processes
	21	Ch. 13	Stream erosion, sediment transport and deposition
	23	Web*	Burd Run field trip * Read the article on Burd Run (link from course web page)
	28	Ch. 15	Glaciers
	30		Case Study: Alaska Glaciers
MAY	4-8		FINAL EXAMS