ESC-104 PHYSICAL GEOLOGY FALL SEMESTER 2022

COURSE INFORMATION

Lecture: ESC-104-01 [82902] Tuesdays & Thursdays 8:40 – 10:00 am
Laboratory: ESC-104-L01 [82903] Thursdays 1:15 – 4:00 pm
Room: BUR-101 Earth Science Lab
Web page: http://people.sunyulster.edu/schimmrs

This is an entirely in-person class and you will have to abide by any of the college's COVID vaccination, social distancing, masking, testing, and check-in policies which might exist during the fall semester. These policies will be clearly communicated to all students by the college via your sunyulster.edu email.

STEVEN SCHIMMRICH

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Office hours: Mondays 9:30-10:30 am, Tuesdays & Thursdays10:30-11:30 am, and Wednesdays 12:00-1:00 pm.
I am able to meet in BUR-105F or via Zoom by appointment

TEXTBOOKS

Required: Marshak, S. 2019. *Earth: Portrait of a Planet* (6h ed). W.W. Norton & Company. ISBN: 9780393640137
Required: Cronin, V.S. 2017. *Laboratory Manual in Physical Geology* (11th ed). Prentice-Hall. ISBN: 9780134446608

Recommended: Schimmrich, S.H. 2020. *Geology of the Hudson Valley: A Billion Years of History*. Amazon KDP. ISBN: 979-8655926752 [While not required, I do recommend this book, which I wrote, since it not only covers the geology of the Hudson Valley, but also the history of life through fossils found in the region]

For lab, you will also need a scientific calculator capable of handling scientific notation. Calculator phone apps are fine for use in lab but will not be allowed for the final lab exam.

COURSE DESCRIPTION

Ever wonder where minerals come from? How oil forms? Why geologists say our local area was once covered by a tropical sea? What causes earthquakes in California and volcanic eruptions in Hawaii? When and how planet Earth formed? Why there are high mountains in Colorado but not Iowa?

Physical geology is the study of our home planet and encompasses these topics and more. You'll learn how the Earth formed, what it's composed of, and how it changes through time. Learning about geology will change the way you look at the Earth and provide you with a background to understand Earth sciences and environmental issues in the news. The lab exercises, field trips, and course assignments will focus on introducing you to the scientific approach to geologic problem solving and applying the concepts introduced in lecture.

GRADING

Your numerical grade for this course will be determined as follows:

56% – Lecture Portion of Course

36%	Midterm (18%) & Final (18%) Exams
18%	Ten Course Assignments (2% each for 9)
2%	Optional Saturday Field Trip (Extra Credit)

46% – Laboratory Portion of Course

33%	Twelve Lab Exercises (3% each for 11)
5%	Rock & Mineral Identification Quiz
8%	Laboratory Final Exam

Your letter grade for the course will be assigned according to your final numerical grade as per department guidelines.

Please keep in mind that I do not "give" you a grade. Grades for labs, assignments, and exams are recorded in Blackboard's gradebook which calculates your final course grade using the percentages listed above. I will not arbitrarily change this grade because you "need" something better, your attendance record, or how hard you "tried". I also do not arbitrarily provide extra credit to students who want more points at the end of the semester. The time to worry about your final course grade starts on the first day of the semester.

ATTENDANCE

Attendance in lecture and lab is required and will be recorded as per college policy. Note will also be made of students who consistently arrive late or leave early. It's important to attend all classes and labs as we will often cover material in lecture that is not in your textbook and on which you will be tested. It's also in your best interest as a student. People who do poorly in my courses are almost always those who do not regularly attend classes and miss labs.

E-MAIL EXPECTATION

I expect all students to regularly check and read their SUNY Ulster email for any news from me or the college during the fall semester. Saying "I didn't know" when multiple emails were sent to you is not an acceptable excuse.

COURSE ASSIGNMENTS

Ten course assignments, covering a variety of topics, will be provided during the course of the semester as noted on the *Lecture Schedule*. Some of these assignments require you to have access to the Internet and the lowest assignment grade will be dropped. Each of the remaining nine required assignments will be worth 2% of your final course grade (18% total). Course assignments will have firm due dates – late assignments will not be accepted for grading.

LECTURE EXAMS

There will be two lecture exams covering the topics noted in the outline for this course. The midterm exam is worth 18% of your final grade will be held on Thursday, October 20. The final exam is worth 18% of your final grade and will be held during the final exam period on Tuesday, December 20. Each exam will be held in BUR-101 at 8:40 am. Make-up exams are not given except for extraordinary, documented reasons. I must be notified on the day of the exam if you are ill. Exams are graded out of 100 points and will consist of a variety of true/false, matching, multiple choice, and short answer type questions as I deem appropriate. Blackboard will have useful study information posted prior to each exam.

LAB EXERCISES & EXAMS

To introduce you to earth materials and the tools and techniques utilized by geologists, there will be twelve lab exercises as noted on the *Laboratory Schedule*. The lowest grade will be dropped and each of the other 11 laboratory exercises will be worth 3% of your final course grade (33% total). Labs and lab exams will be held in BUR-101. Labs will have firm due dates – late labs will not be accepted for grading. A rock and mineral laboratory quiz will be given on Thursday, October 13 from 1:30 – 3:30 pm (5%) and a final laboratory exam will be given on Thursday, December 8 from 1:30 – 4:00 pm (8%).

FIELD TRIPS

Geology is a science learned primarily in the field. We will hold a local field trip during lab time on Thursday, November 3 (Lab 09) and an optional field trip on Saturday November 5 (both weather-permitting). The Saturday trip will earn you 2 points of extra credit toward your final grade if you participate. More information about these trips will be provided later in the semester.

ACADEMIC HONESTY

Cheating and plagiarism of any kind is not tolerated and will be dealt with in accordance with SUNY Ulster policy as outlined in the current College catalog. All work on labs, assignments, and exams must be your own. At a minimum, you will receive a zero but the college may impose other penalties. While we encourage students to work together, it is considered plagiarism if two or more people write exact word-for-word answers to an assignment or lab question. If I catch people copying answers, both will receive a zero for that assignment or lab. If you're unsure of what constitutes plagiarism, or have knowledge of someone else's cheating or plagiarism, please see me privately to discuss the issue.

SPECIAL NEEDS

Any students with special needs who require accommodations are asked to contact me privately as soon as possible so that I am aware of what you require to participate and succeed in this course. All requests for accommodations must be accompanied by email verification from the SUNY Ulster Disabilities Coordinator.

IF YOU'RE HAVING DIFFICULTIES

If at any point during the semester you're having difficulty with any of the material, please contact me as soon as possible. As an instructor, I've found that it's usually very easy to resolve a student's difficulties if they're taken care of right away and I'm always eager and willing to help but you have to take the initiative. Unfortunately, many people wait until it's impossible to catch up before coming for assistance. If you are having difficulties with the material, I will be happy to work with you to help you understand it or may be able to refer you to a tutor. If you're having difficulty with your math or English skills, the college has abundant resources to help you. If you're having personal, mental health, or financial problems, I can refer you to people on campus for help. Please don't be afraid to ask for assistance at any time.

ESC-104 LECTURE SCHEDULE — FALL SEMESTER 2022

Lecture Date	*Lecture Topics*	*Course Assignments*	*Chapters*
Tuesday, August 30	1 – Introduction – What is Geology?	1 – The Earth as a Planet	Prelude
Thursday, September 1	2 – Origin of the Solar System & Earth		1
Tuesday, September 6	3 – The Non-Silicate Minerals	2 – Elements & Minerals	5
Thursday, September 8	4 – The Rock-Forming Silicate Minerals		Interlude A
Tuesday, September 13	5 – Magma & Igneous Rock Bodies		6
Thursday, September 15	6 – The Igneous Rocks		6
Tuesday, September 20	7 – Weathering & Sediment Formation	3 – Weathering	Interlude B
Thursday, September 22	8 – The Sedimentary Rocks		7
Tuesday, September 27	9 – Sedimentary Structures & Environments	4 – Sedimentary Rocks	7
Thursday, September 29	10 – The Metamorphic Rocks & the Rock Cycle		8; Interlude C
Tuesday, October 4	11 – Journey to the Center of the Earth		2
Thursday, October 6	12 – Drifting Continents & Spreading Seas	5 – Plate Tectonics	3
Tuesday, October 11	*Monday Schedule – No Class*		–
Thursday, October 13	13 – The Way the Earth Works: Plate Tectonics		4
Tuesday, October 18	14 – Working with Maps & GIS		–
Thursday, October 20	**Lecture Midterm Exam**		**Prelude–8**
Tuesday, October 25	15 – Volcanoes & Eruptions	6 – Volcanoes	9
Thursday, October 27	16 – Crustal Deformation & Mountain Building		11
Tuesday, November 1	17 – Earthquakes & Seismology	7 – Earthquakes	10; Interlude D
Thursday, November 3	18 – Geomorphology & Mass Movements		16; Interlude F
Tuesday, November 8	19 – Streams & Flooding	8 – Flood Frequencies	17
Thursday, November 10	20 – Groundwater & Karst		19
Tuesday, November 15	21 – Oceans & Coastlines	9 – GSA Abstracts	18
Thursday, November 17	22 – Deserts & Arid Landforms		21
Tuesday, November 22	23 – Glaciers & Ice Ages	10 – Journal Papers	22
Thursday, November 24	*Thanksgiving Break – No Classes*		–
Tuesday, November 29	24 – Earth & Energy Resources		14; 15
Thursday, December 1	25 – Geology & Global Climate Change		23
Tuesday, December 6	26 – Deep Time		12
Thursday, December 8	27 – A Short History of the Earth		13
Tuesday, December 13	*Study / Make-Up Day*		–
Tuesday, December 20	**Lecture Final Exam [8:40 – 10:40 am]**		**9–23**

Notes: Chapter numbers for the lecture topics refer to the Marshak textbook.

Interlude E is skipped since this topic is covered extensively in ESC-105 *Historical Geology*. Chapter 20 is skipped since this material is more appropriate for ESC-101 *Earth's Atmosphere & Oceans* or ESC-109 *Introduction to Meteorology*.

ESC-104 LABORATORY SCHEDULE FALL SEMESTER 2022

Lab Date	*Lab Exercises*	*Chapters*
Thursday, September 1	Lab 01: Measurements & Conversions	1
Thursday, September 8	Lab 02: Non-Silicate Mineral Identification	3
Thursday, September 15	Lab 03: Igneous Rock & Mineral Identification	3; 4; 5
Thursday, September 22	Lab 04: Sedimentary Rock & Mineral Identification	3; 6
Thursday, September 29	Lab 05: Metamorphic Rock & Mineral Identification	3; 7
Thursday, October 6	Lab 06: Plate Tectonics	2
Thursday, October 13	**Lab Midterm: Rock & Mineral Identification**	**3-7**
Thursday, October 20	Lab 07: Topographic Maps	9
Thursday, October 27	Lab 08: Geologic Maps & Structures	10
Thursday, November 3	Lab 09: Earthquakes & Seismology	16
Thursday, November 10	Lab 10: Fluvial & Karst Processes	11; 12
Thursday, November 17	Lab 11: Local Rocks & Structures Field Trip Lab	–
Saturday, November 19	***Optional Saturday Field Trip (details TBA)***	**–**
Thursday, November 24	*Thanksgiving Break – No Lab*	
Thursday, December 1	Lab 12: Glacial, Desert, & Coastal Processes	13; 14; 15
Thursday, December 8	**Laboratory Final Exam**	**1-2; 8-16**

Note: Chapter numbers for the laboratory topics refer to the Cronin laboratory manual.

There is a highly-recommended, but optional field trip for Saturday, November 19.