

**Earth Sciences 1122 - Earth Through Time [= Geology 1122 - Historical Geology]**  
**Winter/Spring 2020**

Instructor: James St. John

Office Hours: Mon. & Wed., 2:15-3 PM, Founders Hall room 2160.

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Website: www.jsjgeology.net OR www.jsj-geology.net/Home-page.htm

Lectures: Mondays & Wednesdays, 12:45 to 2:05 PM, Founders Hall room 2168.

Labs: Fridays, 12:45 to 2:35 PM, Founders Hall room 2168.

Textbook: Stanley, S.M. & J.A. Luczaj. 2014 [dated 2015]. *Earth System History, Fourth Edition*. New York. W.H. Freeman and Company. 587 pp.

<u>Week</u>		<u>Reading Assignments</u>
1 - Jan. 6-10	Mon. - Intro., basics of geology & historical geology Wed. - Minerals, rocks, geologic time Fri. - Geologic time, relative age dating principles, absolute dating	Chapter 1 Chapters 1, 2, 6 Chapters 1, 6
2 - Jan. 13-17	Wed. - Principles of stratigraphy, Milankovitch cyclicity, megasequences Mon. - Sedimentary structures, depositional facies Fri. - <b>Lab</b> - Minerals	Chapter 6 Chapters 2, 5
3 - Jan. 20-24	Mon. - No class Wed. - Fossils, fossil preservation styles Fri. - <b>Lab</b> - Igneous rocks & Metamorphic rocks	Chapter 3
4 - Jan. 27-31	Mon. - Classification of fossils, taxonomy, evolution Wed. - Evolution, extinction Fri. - <b>Lab</b> - Sedimentary rocks	Chapters 3, 7 Chapters 3, 7
5 - Feb. 3-7	Mon. - Marine paleoecology, continental paleopositions, origin of the Universe Wed. - Origin of elements & the Solar System, & the Earth-Moon system Fri. - <b>Lab</b> - Sedimentary structures	Chapters 4, 8, 11 Chapter 11
6 - Feb. 10-14	Mon. - <b>Test # 1</b> Wed. - Wed. - Origin of atmosphere & oceans; Archean history Fri. - <b>Lab</b> - Fossil preservation	Chapter 11
7 - Feb. 17-21	Mon. - Archean history, origin of life Wed. - Archean fossils, Proterozoic history - introduction, supercontinents Fri. - <b>Lab</b> - Morphology & classification of common fossils	Chapter 11 Chapters 11, 12
8 - Feb. 24-28	Mon. - Proterozoic history - supercontinents, rocks, atmosphere, climate, impacts Wed. - Proterozoic fossils - stromatolites, eucaryotes, origin of eucaryotes Fri. - <b>Lab</b> - Facies mapping exercise	Chapter 12 Chapter 12
9 - March 2-6	Mon. - Proterozoic fossils - Ediacarans, Phanerozoic trends; Early Paleozoic intro. Wed. - Early Paleozoic rocks & life, Cambrian Explosion, Cambrian fossils Fri. - <b>Lab</b> - Relative age dating exercise	Chaps. 12, 13 Chapter 13
10 - March 9-13	Mon. - <u>SPRING BREAK</u> - no class Wed. - <u>SPRING BREAK</u> - no class Fri. - <u>SPRING BREAK</u> - no class	
11 - March 16-20	Mon. - Cambrian lagerstätten, Ordovician life, end-Ordovician extinction Wed. - Middle Paleozoic - paleogeography, orogenies, sea levels, climate, rocks, life Fri. - <b>Lab</b> - Absolute age dating exercise (bring calculator)	Chapter 13 Chapter 14
12 - March 23-27	Mon. - <b>Test # 2</b> Wed. - Middle Paleozoic life; Late Paleozoic - paleogeography, orogenies Fri. - <b>Lab</b> - Geologic maps I	Chapters 14, 15
13 - March 30-April 3	Mon. - Late Paleozoic - rocks, life Wed. - end-Permian mass extinction Fri. - <b>Lab</b> - Geologic maps II	Chapter 15 Chapter 15
14 - April 6-10	Mon. - Mesozoic - intro., paleogeography, orogenies, sea levels, climate, rocks	Chapters 16, 17

	Wed. - Mesozoic rocks, Mesozoic life - Mesozoic Marine Revolution Fri. - Mesozoic life - dinosaurs, mammals, birds, land plants	Chapters 16, 17 Chapters 16, 17
15 - April 13-17	Mon. - Mesozoic life - marine micro-organisms, lagerstätten, K-T extinction Wed. - K-T mass extinction, Cenozoic - intro., paleogeography, orogenies Fri. - Cenozoic rocks, Cenozoic life	Chapters 16, 17 Chapters 17-19 Chapters 18, 19
16 - April 20-24	Mon. - Human evolution, Cenozoic extinctions & lagerstätten	Chapters 19, 20
17 - April 27-May 1	Mon. - <b>Final Exam</b> , 12:40 to 2:25 PM, 27 April 2020, Founders Hall room 2168.	

**Grading:** Tests (2): 35%; Final exam: 35%; Lab grade: 30%.

**Final course grades:** A = 92-100%; A- = 90-91%; B+ = 88-89%; B = 82-87%; B- = 80-81%;  
C+ = 78-79%; C = 72-77%; C- = 70-71%; D+ = 68-69%; D = 60-67%; E = below 60%.

**Grade rounding** - all **final course grades** are rounded following these examples:

**Example:** 79.45% = 79% = C+      **Example:** 79.50% = 80% = B-

In other words, .4999 & below always round down, and .5000 & above always round up.

**“Points”** - every lab is equal in weight, although the number of points on each lab differs. Points on tests are relative & are used purely for ease of grading. One point on a lab does not in any way equal one point on a test. Course grades are computed using test & lab **percentage grades** only. Grades are **not based on “points”**.

**Course grade formula:**  $((T1+T2)/2) \cdot 0.35 + (Final \cdot 0.35) + (((L1+L2+L3+L4+L5+L6+L7+L8+L9+L10+L11)/11) \cdot 0.3)$

**Lectures:** All students are expected to attend all lectures. No one is permitted regular attendance in lecture unless they are enrolled in the course. Students are expected to **behave with respect** for other students and for the instructor. ***This means no distracting conversations during lecture!*** This means no sleeping during lecture! This means no reading non-geology stuff in lecture! This means no doing homework for other classes during lecture! ***This means NO INTERNET SURFING OR TEXTING OR OTHER ELECTRONIC DOOHICKEY STUFF!!*** This means no bad attitudes during class! The list of scheduled lecture topics is intended as a guide only, and is subject to revision. It is likely that short (10 to 15 minute long) lectures will be done at the beginning of some labs.

**Reading assignments:** Reading assignments are listed on the schedule and will be announced during lecture as each new topic is reached. Readings are expected to be done after being assigned by the instructor. Some portions of the textbook will not be specifically discussed in class. Also, some lectures and lecture material will not be covered in the textbook. However, all lecture material and all assigned readings are fair game for test and exam questions.

**Lab:** Geology 1122 is a lab course. Attendance at lab is required. Lab exercises will be held most Fridays and they will count toward your final course grade. Each lab exercise must be turned in at the end of lab class. Lab exercises are designed to be finished within the available time, but this requires focus (More work! Less talk!). Percentage grades for all labs will be averaged together to make the total lab grade (= 30% of the total course grade). No make-up labs.

**Tests:** Two tests will be given during the term, and 1 final exam will be given at the end of the term. All material covered in lecture and lab, and in the assigned readings are potentially fair game for test and exam questions, unless otherwise indicated. No make-up exams will be given. The style of questions for the 2 tests and final exam will be a mixture of multiple choice, true-or-false, fill-in-the-blank, and short answer questions. I will make every effort to include only unambiguous questions. If students find any ambiguous questions, a case should be presented to the instructor for consideration.

**Miscellaneous:** OSU will provide this syllabus in other formats if requested.

Students who have special needs during the course should visit the Student Life Disability Services office (Warner Center room 226) and the testing center (Hopewell Hall room 88). Once approved, paperwork will be provided that can be shared with instructors. All of this should be done in a timely manner (= early in the term), so that instructors can make arrangements. Students who take tests in the testing center **MUST** tell the instructor before **each** test with a written note - otherwise, I will assume you take tests in class with everyone else.

Geology 1122 counts as a 4 credit hour GEC physical sciences/natural sciences course. The class will cover the origin and evolution of Earth, including its physical, chemical, and biological components; principles of geologic inference and their application to interpreting Earth. Classes in physical sciences/natural sciences provide an understanding of the principles, theories, and methods of modern science & the relationship between science and technology & the effects of science and technology on the environment. Learning objectives of GEC physical sciences/natural sciences: 1) understand the basic facts, principles, theories, and methods of modern science; 2) learn key events in the history of science; 3) provide examples of the interdependence of scientific and technological developments; 4) discuss social and philosophical implications of scientific discoveries and understand the potential of science and technology to address problems of the modern world.

Cheating will be reported to the dean and OSU’s committee on academic misconduct.

Please don’t ask when graded stuff will be returned. The answer will always be the same: “As soon as they’re done.”

All **proper names** mentioned & presented in this course begin with CAPITAL letters. This includes geologic time scale terms, stratigraphic names, continent & paleocontinent names, and non-species level scientific names for organisms.

Please don’t ask for bonus assignments. If you can’t handle the normal work, you can’t handle extra work. The best way to do well is to attend every class, take good notes, do assigned readings, ask questions, and study diligently for tests. Please do yourself a favor and take your education and intellectual development seriously!