

ERTH 200 – Geologic Inquiry

Spring 2024

Instructors: Alyssa Anderson, POST (TBD), ananders@hawaii.edu (*section 1*)
Deborah Eason, POST 719B, deborah@hawaii.edu (*section 2*)

TA(s): TBA

Office hours: TBA or by appointment (email to schedule)

Lecture (POST 723): MWF 9:30–10:20 am (*all sections*)

Lab (POST 733): M 12:30–3:20 pm (*section 1*)

T 12:30–3:20 pm (*section 2*)

Course Overview

Geologic Inquiry (ERTH 200) is designed to build a strong foundation in important geologic concepts and skills, serving as a bridge between ERTH 101 and upper division ERTH courses. Students will develop their understanding of Earth’s history and processes—including topics such as plate tectonics, geologic time, biogeochemical cycles, and the fossil record—while building fundamental skills through labs and writing assignments.

Requirements / Prerequisites:

- An introductory Earth Science course (ERTH 101 or comparable) and lab (ERTH 101L or comparable). ERTH 101L may be taken concurrently, but this is not encouraged.
- A laptop/tablet or similar **with internet connection and access to Laulima** is required for participation.

Text: Earth System History (4th Edition) by Stanley & Luczaj

****Note:** This course will be participating in the Bookstore’s Interactive Digital Access Program (IDAP). Through this program, you will access your course material digitally via Laulima. A charge for this material will be added to your MyUH account. Please see **IDAP Program** below for additional information.

Tentative Schedule (*subject to change*)

<i>Week</i>	<i>Topic</i>	<i>Reading</i>
1	Review: History of Geology & Steno’s Laws	Chapters 1 & 2
2	Earth Structure & Calculations in Earth Science	Chapters 1 & 2
3	Review of Plate Tectonics & Plate Motions	Chapters 2 & 8
4	The Carbon Cycle: Respiration, Photosynthesis	Chapters 3, 10 & handouts
5	The Carbon Cycle: Respiration, Photosynthesis	Chapters 3, 10 & handouts
6	Diversity of Life	Chapter 3
7	The Modern Earth System & Paleoproxies	Chapter 4
8	Facies and Depositional Environments	Chapter 5
9	Time Scale, Geochronology & Paleomagnetism	Chapter 6
10	Evolution: Selection, Speciation & Extinction	Chapter 7
11	Stable Isotopes, Hadean & Archean	Chapters 10,11

12	Paleozoic Life: Cambrian Explosion, The Rise of Plants & Early Extinctions	Chapters 13, 14 & 15
13	Paleozoic Tectonics: North American Mountain Building, Coal Swamps & Pangea	Chapters 13, 14 & 15
14	Mesozoic & Mass Extinctions	Chapters 16 & 17
15	Cenozoic Climate	Chapters 18
16	The Neogene & Holocene	Chapter 19 & 20

Writing Intensive (W-focus): EARTH 200 is designated as a writing intensive (WI) course with an enrollment cap of 20 students per section. To satisfy this requirement, students must write *a minimum of 4,000 words*, or about 16 pages. This will be divided into **3 types of writing assignments** (totaling 45% of the course grade), each with feedback and revision opportunities to help students develop their skills. Detailed instructions and grading rubrics will be provided for each assignment.

(1) **Short guides:** Each student will be required to write two short guides describing how to solve a particular problem presented in lecture or lab. Each assignment will include a round of student peer review, written feedback from the instructor with a preliminary grade, and an opportunity to revise and resubmit for an improved grade. *(200–250 words each, totaling 6% of course grade)*

(2) **Brief essays:** Three brief essays related to content presented in the course will be required. The instructor will work with students to develop outlines, cover the ethical use of previously published information, and provide written feedback on their submission. Students will be given the opportunity to revise and resubmit these essays to improve their grade. *(500–550 words each, totaling 15% of course grade)*

(3) **Events in Earth History:** The final paper will be a summary of an important event in Earth history. As preparation, students will be required to compare and contrast different peer-reviewed articles describing their topic in an extended outline. Students will receive instructor feedback on the extended outline and peer-review feedback on their first draft, followed by additional instructor feedback and grade on their submission. This project is intended to help students develop their ability to read and think critically when they encounter conflicting viewpoints. *(2,000 words with appropriate figures plus references; 24% of the course grade)*

Course Policies and Assessment

Laulima: The EARTH 200 course site on Laulima will be the primary means of accessing course resources, assignments, tests, and other materials/communications. *Frequent and reliable access to Laulima is essential for success.* Students should also read their email on a regular basis or risk missing out on critical course-related information.

- Course resources (e.g., handouts, lecture slides) will be posted under *Resources*.
- Labs, quizzes, exams, and other assignments will be submitted through Laulima's *Tests & Quizzes* tool.
- To streamline the feedback, revision, and grading process, all writing assignments must also be submitted via Laulima (accepted formats: Microsoft Word or Google Doc).

- Please note that Laulima has an email tool which can be used to contact fellow students in the course. This tool is *strictly* for class collaboration; inappropriate use will result in corresponding actions—see codes of ethical conduct <https://manoa.hawaii.edu/studentsuccess/conduct-code/> and http://www.soest.hawaii.edu/GG/resources/docs/EARTH_Guidelines_Ethical_Professional_Conduct_11_04_19.pdf

Testing & Grading: The final course grade will reflect performance on exams, lab assignments and the writing assignments outlined above, weighted as follows: mid-term (20%), final exam (20%), lab quizzes and assignments (not graded as WI; 15%), and writing assignments (45%; detailed above). The **Final Exam** will be held on the date prescribed by UHM:

<https://manoa.hawaii.edu/undergrad/schedule/final-exams/spring/>

%	Grade	%	Grade
>96.6	A+	73.3 – 76.5	C
93.3 – 96.5	A	70 – 73.2	C-
90 – 93.2	A-	66.6 – 69.9	D+
86.6 – 89.9	B+	63.3 – 66.5	D
83.3 – 86.5	B	60 – 63.2	D-
80 – 83.2	B-	<59	F
76.6 – 79.9	C+		

Attendance: Yes, regular attendance in lectures and labs is required. Here’s why:

- Poor attendance has been shown to negatively affect student grade.
- Previous students say that attending lectures helped them tremendously with exam preparation—not all material included in exams is contained in the textbook.
- Individual student assignments are sometimes given during lectures. Students are responsible for completing these assignments by the due date given.
- One important reason for having a lab is to expose you to a variety of rocks & fossils as hand specimens. If you miss the lab, you miss this part of the course content.

NOTE: In order to pass this course, ALL labs and writing assignments must be completed. If you have to miss a lab or writing deadline due to illness or other unforeseen reason, please contact the instructor ASAP to make special arrangements.

LATE POLICY: Students are expected to submit their work in a timely manner. The following late policies will be used throughout the semester:

1. Assignments that are required for in-class work (e.g., peer review of written assignments) must be completed before that class; they will *NOT* receive any credit if they are late.
2. Late assignments will be marked down unless prior arrangements have been made with the instructor/TA.
3. If you are sick, please let the instructor know that you may be turning in the assignment late. If you become very ill, we will accept medical excuses from a doctor.

Course Learning Objectives

Course content and its relationship to Earth Sciences Department student learning objectives (SLOs): Geologic Inquiry (ERTH 200) is a course designed for Earth Sciences majors to build a strong foundation in important geologic concepts, serving as a bridge between EARTH 101 and upper division EARTH course. If space is available, qualified non-majors may also enroll with instructor permission. EARTH 200 builds on content introduced in EARTH 101, such as the theory of plate tectonics, geologic time, biogeochemical cycles and the fossil record. This course further explores how geoscientists go about reconstructing Earth's history and understanding the processes responsible for changes in the Earth system over time. Students will gain a better appreciation for the role of geologic processes in maintaining conditions suitable for life on Earth and some of the ways human activities are altering important natural processes (SLO 1). Students will make simple calculations in MS Excel and gain an appreciation of how math, physics and chemistry can be applied to the study of the Earth (SLO 2). Examples of how the scientific method is used to test hypotheses in the geosciences will be presented (SLO 3). As a W-focus course, EARTH 200 students are required to develop their ability to express geologic information and ideas in a variety of written formats (SLO 4).

Student Learning Objectives (SLOs) for BA and BS degrees in Earth Sciences.

1. Students can explain the relevance of Earth & Environmental Sciences to human needs, including those appropriate to Hawai'i, and be able to discuss issues related to geology and its impact on society and planet Earth.
2. Students can apply technical knowledge of relevant computer applications, laboratory methods, field methods, and the supporting disciplines (math, physics, chemistry, biology) to solve real-world problems in geology and geophysics.
3. Students use the scientific method to define, critically analyze, and solve a problem in earth science.
4. Students can reconstruct, clearly and ethically, geological knowledge in both oral presentations and written reports.
5. Students can evaluate, interpret, and summarize the basic principles of Earth Sciences, including the fundamental tenets of its sub-disciplines, and their context in relationship to other core sciences, to explain complex phenomena in the geosciences.

In satisfaction of the **Writing Intensive** focus designation, the course has additional learning objectives described below.

Writing Learning Objective (WLO)	Approach
WLO1. Adapt writing to a clearly identified purpose and audience, according to disciplinary conventions and genres.	Different writing assignments will be tailored for different audiences: guides address peers in the classroom, while the essays and final paper is encyclopedia-style writing aimed at general audiences.
WLO2. Develop and organize appropriate and relevant content.	Students will receive training through reading assignments (model papers provided by instructor and papers they find during the library lab) and in-class reinforcement on best practices of scientific writing.
WLO3. Evaluate and integrate supporting	Writing assignments require students to find

materials from appropriate sources, and credit them appropriately according to the genre and discourse requirements of the field.	information in multiple sources (textbook, websites, peer-reviewed journals), synthesize information, and cite appropriately. Specifically, the final paper requires the use of information from at least 3 peer-reviewed scientific papers with proper citations. A library lab session introduces best practices for finding and selecting sources.
WLO4. Control style and mechanics to communicate effectively.	The grading rubrics have elements on style, mechanics, grammar, and completeness of the essays. All these will be explained, accompanied by relevant examples and practice exercises.

Campus Policies and Resources

Participation Verification: Students who are enrolled in this course but *fail to attend or participate by the add/change deadline (Jan 16)* will be flagged for non-participation. Flagged students will be administratively dropped by the Office of the Registrar. Any changes to a student’s enrollment status may affect financial aid eligibility and can result in the return of some or all of federal student financial aid.

IDAP Program: This course will be participating in the Bookstore’s Interactive Digital Access Program (IDAP). Through this program, you will access your course material digitally via Laulima. A charge for the digital course material through IDAP will be added to your MyUH account. *You have the option to opt out* of receiving your course material through IDAP. By opting out, the charge will be refunded on your MyUH account and you will lose access to the course material once the opt-out date has passed. If you do *not* opt out, the charge will stay on your MyUH account. Any unpaid charges on your MyUH account will turn into a hold, which will prevent you from accessing various services within the University. You may opt out by visiting your unique Inclusive Access Student Portal, which can be found in your IDAP welcome email (Subject line: “IMPORTANT: You have enrolled in an IDAP Course”). For more information on IDAP, please visit: https://www.bookstore.hawaii.edu/manoa/site_IDAP.asp

Disability Access—KOKUA Program: If you have a disability and related access needs the Department will make every effort to assist and support you. For confidential services students are encouraged to contact the KOKUA Program (Office for Students with Disabilities) at 956-7511, email kokua@hawaii.edu, or go to Room 013 on the ground floor of the Queen Lili‘uokalani Center for Student Services. Please know that we will work with you and KOKUA to meet your access needs based on disability documentation. KOKUA’s services are confidential and offered free of charge.

Academic Integrity & Ethical Behavior—Office of Student Conduct: Cheating, plagiarism, or other forms of academic dishonesty are not permitted within this course and are prohibited within the System-wide Student Conduct Code (EP 7.208). Examples include: fabrication, facilitation, cheating, plagiarism, and use of improper materials. Any incident of suspected

academic dishonesty will be reported to the Office of Student Conduct for review and possible adjudication. Additionally, the instructor may take action with respect to the grade for the deliverable or course as they see fit.

Title IX: UHM is committed to providing a learning, working and living environment that promotes personal integrity, civility, and mutual respect, and is free of all forms of sex discrimination and gender-based violence, including sexual assault, sexual harassment, gender-based harassment, domestic violence, dating violence, and stalking. If you or someone you know is experiencing any of these, UHM has staff and resources on campus to support and assist you. Staff can also direct you to resources that are in the community. Here are some of your options:

- If you wish to remain ANONYMOUS, speak with someone CONFIDENTIALLY, or would like to receive information and support in a CONFIDENTIAL setting, use the confidential resources available here:
<https://manoa.hawaii.edu/titleix/resources/#confidential>
- If you wish to REPORT an incident of sex discrimination or gender-based violence including sexual assault, sexual harassment, gender-based harassment, domestic violence, dating violence or stalking as well as receive information and support, contact the Title IX Coordinator: 808-956-2299, t9uhm@hawaii.edu

As members of the University faculty, we are required to immediately report any incident of sex discrimination or gender-based violence to the campus Title IX Coordinator. Although we cannot guarantee confidentiality, you will still have options about how your case will be handled. Our goal is to make sure you are aware of the range of options available to you and have access to the resources and support you need. For more information regarding sex discrimination and gender-based violence, the University's Title IX resources and the University's Policy, go to: <https://manoa.hawaii.edu/titleix/>

Department of Public Safety: 808-956-6911 (Emergency) / 808-956-8211 (Non-Emergency) <http://manoa.hawaii.edu/dps/>

UH System Basic Needs: Basic needs include food and housing, childcare, mental health, financial resources and transportation, among others. Student basic needs security is critical for ensuring strong academic performance, persistence and graduation and overall student well-being. If you or someone you know are experiencing basic needs insecurity, please see the following resources: [UH Mānoa Basic Needs](#)