

SYLLABUS

ERTH 611: Accelerated Introduction to Earth Sciences Fall 2023, MWF 12:30-1:20, POST 708

Course Coordinator & Instructor:

Craig Glenn (Cell 808-394-5155; POST 720A/701; glenn@soest.hawaii.edu)

Instructors and Topics (add +808 Area Code) - see weekly schedule for more information:

Gary Huss (956-9342; POST 516A; ghuss@higp.hawaii.edu) -*Origin of Solar System & Earth*

Julia Hammer (956-6105; POST 617B; jhammer@hawaii.edu) -*Minerals & Mineralogy*

Aaron Pietruszka (956-9607; POST 612A; apietrus@hawaii.edu) -*Igneous Rocks & Processes*

Thomas Shea (956-9819; POST 812; tshea@hawaii.edu) - *Geology of Hawai‘ian Islands*

Bin Chen (956-6908; POST 818E; binchen@hawaii.edu) -*Earth’s Interior & Rock Metamorphism*

Robert Dunn (956-3728; POST 808; dunnr@hawaii.edu) -*Plate Tectonics*

Shellie Habel (286-2586; PST 816B skey@hawaii.edu) -*Groundwater & Hydrogeology*

Craig Glenn (956-2200; POST 720A; glenn@soest.hawaii.edu) -*Sedimentary Systems Land & Ocean*

Eric Gaidos (956-7897; POST 710; gaidos@hawaii.edu) - *Earth’s Geologic & Biotic History*

Grading: Grades are based on class participation and homework assignments provided throughout the semester.

Readings:

- Specific reading assignments and lecture notes/PowerPoint slides for each lecturer will be posted online on *Laulima*.
- A general 101-level introductory textbook of Geology will also be available with specific readings assigned by some instructors.

Field Trips: A field trip will be included in the course, weather and access permitting.

Course Objectives:

1. To introduce the non-geology BA/BS graduate students to the fundamental aspects of the Earth’s geologic sciences.
2. To give students from other fields a grasp of the underlying principles that govern Earth’s geologic processes.
3. To provide students with an accelerated introduction to the fields of excellence within the Department.
4. To let students meet and interact with a number of active researchers in diverse fields within and directly affiliated with the Department.

Learning Objectives: The student will be able to:

1. Describe the general chemical composition of the Earth, the origin of the elements, the processes by which minerals and magmas form and the nature of volcanism within the context of plate tectonics and tectonic processes.
2. Recognize common minerals and rocks and understand their relationship to planetary/geologic processes.

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3. Explain concepts of solid-state changes in mineral assemblages in rocks as a reflection of changes in physical and chemical environments within the Earth as they relate to various geologic processes.
4. Recognize the mechanisms of propagation of elastic waves through the Earth and interpret their significance for determining large-scale Earth structures and the consequences of earthquakes.
5. Categorize phenomena that affect variations in density of Earth materials and how changes in physical/chemical parameters affect dynamics of the interior of the Earth that affect global processes.
6. Recognize and characterize the driving mechanisms of the Earth's lithosphere within the context of plate tectonics.
7. Understand contemporary paradigms pertaining to the origin of Earth within the solar system and interpret the evolution of the atmosphere and hydrosphere in the context of global processes.
8. Gain fundamental understandings about hydrology, groundwater, and hydrogeology.
9. Contrast the processes of weathering of materials exposed on the Earth's surface and to be able to recognize the effects of environment on dynamic natural Earth processes.
10. Describe processes and products of sedimentary systems in a wide variety of principal terrestrial and oceanic environments.
11. Gain a fundamental understanding of the history of the Earth, particularly within the context of evolving plate tectonics and the origin and evolution of life.
12. Actively participate and be able to understand diverse topics covered in geologic and planetary science presentations at the Department of Earth Sciences Friday Seminars.

Disability Access:

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 Office for Students with Disabilities (known as “Kokua”) located on the ground floor (Room 013) of the Queen Lili'uokalani Center for Student Services: KOKUA Program; 2600 Campus Road; Honolulu, Hawaii 96822 Voice: 956-7511; Email: kokua@hawaii.edu; URL: www.hawaii.edu/kokua. Please know that course coordinator Craig Glenn will work with you and KOKUA to meet your access needs.

Title IX:

The University of Hawai'i 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, the University has staff and resources on your campus to support and assist you. Staff can also direct you to resources that are in the community. Here are some of your options:

As members of the University faculty, your instructors are required to immediately report any incident of potential sex discrimination or gender-based violence to the campus Title IX Coordinator. Although the Title IX Coordinator and your instructors cannot guarantee

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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.

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:

<http://www.manoa.hawaii.edu/titleix/resources.html#confidential>

If you wish to directly 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: Dee Uwono Title IX Coordinator (808) 956-2299 t9uhm@hawaii.edu.

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 is experiencing basic needs insecurity, please see the following resources: <https://www.hawaii.edu/student-basic-needs/resources/manoa/>.