

SUST 116 / EARTH 106 Humans and the Environment (3) Prepares students to make decisions such as where to build/buy a house, sustainable use of natural resources, and what environmental actions relevant to society and Earth's ecosystem are appropriate on a local and global scale. A-F only. DP

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Office Hours: always available after class and by appointment

SUST 116 / EARTH 106 : Humans and the Environment

Fall 2023

Tuesday-Thursday 12:00 – 1:15 pm in person

In person lectures in ARCH 205; availability of a laptop/tablet or similar with internet connection and access to Laulima required for participation.

The Laulima course space is being shared by students in the following CRNs [ERTH-106 MAN.75516 and SUST 116 MAN.75464] and if you do not wish to be in a shared Laulima course space, please drop this section and register for an alternate course.

Please, note that Laulima has an E-mail tool and your fellow students in the course may use it to contact you. The use of the Laulima E-mail tool is strictly for class collaboration and its inappropriate use will result in corresponding actions - see codes of ethical conduct http://www.studentaffairs.manoa.hawaii.edu/policies/conduct_code/ and http://www.soest.hawaii.edu/GG/resources/docs/EARTH_Guidelines_Ethical_Professional_Conduct_11_04_19.pdf

Text: Introduction to Environmental Geology – Fourth edition or newer by Edward A. Keller, book OR loose-leaf bundle

Class material is available through Laulima under the SUST116/ERTH106 tab.

The class prepares students to make decisions on sustainable use of natural resources and what environmental actions relevant to society and Earth's ecosystem are appropriate on a local and global scale.

Environmental geology is essential to understand and study because:

“...the minerals and metals required to power our low-carbon future are often buried in the Earth's crust, requiring geological expertise to map, analyse, target and extract sustainably. High-capacity batteries, solar panels, turbines and electrical systems depend on precious metals such as indium, lithium, neodymium and nickel, stored in rocks beneath our feet. Exploiting geothermal energy resources requires drilling through strata and circulating hot fluids through porous underground networks. Building wind or solar farms requires geo-engineering for stable large-scale structures rooted on bedrock, as well as materials for motors and generators. Managing water resources for an increasing global population requires models for groundwater utilisation and aquifer dynamics. The geologist is a core player in all

these endeavours and is, therefore, a key part of a sustainable and healthy future.”
 Wadsworth et al. 2020.
<https://www.timeshighereducation.com/opinion/earth-sciences-face-crisis-sustainability>

Class student learning objectives

At the end of the class you should:

- Explain the basic concepts of environmental geology: be able to describe examples of how Earth systems are connected, what natural hazards humans face, how natural resources are formed and used, how climate change affects natural resources and humans.
- Be a more informed citizen concerning your environment: demonstrate critical thinking about sustainability, the use of natural resources and environmental pollution.
- Document problems using real world data sets (collect data in the field and interpret what they mean)
- Reconstruct knowledge in an oral presentation (final project).

The class will consist of lectures w/active participation via polls, group discussions, quizzes; readings, worksheets and videos as homework.

Grades will be based on completion of worksheets (8 best grades out of 10 worksheets, 24 %), 2 exams (25% each), final presentation of the class project which is a public service announcement created by the student (16 %), attendance/in-class participation through polls/quizzes (10%). If a student must miss an exam because of illness, family crisis, etc she/he must inform the instructor by e-mail for alternative arrangements.

Tablets, laptops, phones can only be used for the purposes of class related activities (answer polls and quizzes, complete exams). Students using these for entertainment purposes, doing homework for other classes, chatting during the class will be asked to leave the class.

Preliminary schedule – will adjust to fit class needs

Week #	Week of	Topic	Chapter
1	8/21	Introduction, Philosophy and Concepts	1
2	8/28	Population growth and sustainability	1
3	9/4	Earth’s Structure	2
4	9/11	Plate Tectonics, HI specific relevance	2
5	9/18	Rock cycle, Volcanoes, recent HI eruptions	3, 8
6	9/25	Earthquakes	6
7	10/2	Tsunami	7
8	10/9	Coastal processes	11
9	10/16	Exam 1	1,2,3,6,7,8

10	10/23	Water Resources	13
11	10/30	Water Resources	13
12	11/6	Water Pollution	14
13	11/13	Energy Resources	16
14	11/20	Global Climate Change	18
15	11/27	Global Climate Change	18
16	12/4	Geology Society and Future, presentations	19
		Study period	
		Exam 2	11,13,14,16,18,19

This is an introductory Earth and Environmental Science class focusing on how humans interact with the environment.

Most class periods are lecture-based with short videos, in class exercises, and discussions.

For most students, the difficulty of the class comes from a new vocabulary and new concepts.

Department Learning Objectives

The Department of Earth Sciences has established the following undergraduate student learning objectives.

- Students can explain the relevance of geology and geophysics to human needs, including those appropriate to Hawaii, and be able to discuss issues related to geology and its impact on society and planet Earth.
- Students can apply technical knowledge of relevant computer applications, laboratory methods, and field methods to solve real-world problems in geology and geophysics.
- Students use the scientific method to define, critically analyze, and solve a problem in earth science.
- Students can reconstruct, clearly and ethically, geological knowledge in both oral presentations and written reports.
- Students can evaluate, interpret, and summarize the basic principles of geology and geophysics, including the fundamental tenets of the sub-disciplines, and their context in relationship to other core sciences, to explain complex phenomena in geology and geophysics.

Sexual Harassment

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 (including me) 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 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** (and see below).

<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; or contact me and I will take you to the Title IX office.

Confidential Reporting

University of Hawaii students, faculty and staff have an important resource to confidentially report violations of laws, rules, regulations and UH policies. A whistleblower hotline launched in June 2016 further advances the university's commitment to encourage and enable any member of UH or the general public to make good faith reports of misconduct.

University of Hawaii Whistleblower website:

<https://secure.ethicspoint.com/domain/media/en/gui/40480/index.html> UH

Whistleblower Hotline: 1-855-874-2849

For more information go to UH News at <http://go.hawaii.edu/coj>

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. The instructor has worked with Kokua program several times in the past years.

Services:

KOKUA Program
2600 Campus Road
Honolulu, Hawaii 96822
Office hours 7:45 AM – 4:30 PM
Voice: 956-7511
Email: kokua@hawaii.edu
URL: www.hawaii.edu/kokua

Student basic need related resources:

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 System Basic Needs](#).