

ERTH 135, Natural Disasters and Human History, Spring 2024

Instructor: Sloan Coats

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Class Times: Tuesday-Thursday 9:00 – 10:15 am (POST 723)

Office Hours: Tuesday-Thursday 10:30 – 11:30 am and by appointment

We live on an active dynamic planet. Human history has been determined mainly by the activities of humans, but it is not completely divorced from natural processes. In this course, we will explore how a variety of geologic events and environments have influenced human history from prehistoric times up to the present. We will analyze the social, cultural, and economic effects of various disasters that led to significant changes in societies in Africa, the Americas, Asia, Europe, and Oceania. This course will use a mix of lecture and hands-on learning through group projects. After outlining the hazards associated with various geologic processes, we will investigate historical examples and how different societies have reacted to, and changed because of, these natural disasters. Following a week of introduction to how our dynamic planet works and how this dynamism results in sometimes-hazardous conditions, the semester will be divided into four modules, dedicated to volcanism, earthquakes, tsunamis, and floods. Each module will consist of 7 classes and start with an introduction to the particular hazard (class 1 and part of class 2). At the end of class 2 the group project for that particular module will be assigned. Class 3 will present case studies of the particular hazard, including their cultural and historical effects. In class 4, the student groups will present their preliminary results to the class, with feedback and discussion from fellow students and the instructor. Class 5 and class 6 will be the final presentations from the student groups, augmented by additional case studies (as time permits), and class 7 will consist of an exam.

Course Grading:

-Exams (12.5% per exam, total for all 4 exams = 50%) (non-cumulative; 4th exam will be during the “official” Final Exam slot)

-Group presentations and discussion participation (30%)

-20% for iClicker questions. NOTE: Each class will include a few questions that you will answer using iClickers, so please make sure that you have either an iClicker or Reef Polling software for your phone (you can find info at: <https://www.iclicker.com/>)

Tentative Schedule:

Jan 14 – Introduction

Jan 16 – Continental drift and sea floor observations

Jan 21 – Plate tectonics

Jan 23 – Volcanism I and II: Volcanism

Jan 28 – Volcanism III: Volcanic hazards, assign group project 1

Jan 30 – Volcanism group project

Feb 4 – Begin volcanism project presentations

Feb 6 – Finish volcanism project presentations

Feb 11 – First Exam

Feb 13 – No class

Feb 18 – Earthquakes I: Science, faults and seismic waves
Feb 20 – Earthquakes II: Hazards
Feb 25 – Earthquakes III: Earthquake group project
Feb 27 – Earthquakes IV: Begin Project 2 student presentations
Mar 3 – Earthquakes V: Finish Project 2 student presentations
Mar 5 – Earthquakes VI: Second Exam
Mar 10 – Tsunami I: Generation and propagation
Mar 17, 19 – Spring Break
Mar 31 – Tsunami II: Characteristics
Apr 7 – Tsunami III: Megatsunamis, Hawaii, tsunami risks
Apr 9 – Tsunami IV: Risks, and social, political, economic and cultural aspects
Apr 14 – Tsunami V: Social, political, economic and cultural aspects
Apr 16 – Tsunami Exam
Apr 21 – Floods I: Scientific foundation
Apr 23 – Floods II: Hurricanes and flooding
Apr 28 – Floods III: Climate change
Apr 30 – Floods IV: Social, political, economic and cultural aspects
May 5 – Floods V: Social, political, economic and cultural aspects
May 7 – Floods Exam

Admin Stuff:

Learning Objectives: The Department of Earth Sciences has established the following undergraduate student learning objectives for introductory courses such as EARTH 135: Students can explain the relevance of earth science 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. 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. In addition, as a UH General Education Foundations course, the following student learning objective applies: Students can analyze the development of human societies and their cultural traditions through time in different regions (including Africa, the Americas, Asia, Europe, and Oceania) and using multiple perspectives.

Make-Up Exams/Early Exams: Make-up exams will only be given when a student misses the exam for a legitimate reason such as illness or family emergency (a doctor's note is required in the case of illness, or family emergencies). Please contact me as soon as possible if such a situation arises. Anyone with official UH-sponsored event conflicts (e.g., UH sports teams) must provide at least 2 weeks notice with appropriate signed paperwork. Note that make-up and/or early exams may be essay format, instead of multiple choice exams otherwise conducted.

Review the Student Conduct Code: studentaffairs.manoa.hawaii.edu/policies/conduct_code/
A key line in the Code says, “The University expects students to maintain standards of personal integrity that are in harmony with the educational goals of the institution; to respect the rights, privileges, and property of others; and to observe national, state, and local laws and University regulations.” The code also outlines the serious penalties for violations, so please do not violate the code.

Students with Disabilities: The Earth Sciences Department will make every effort to assist those with disability and related access needs. For confidential services, please contact the Office for

Students with Disabilities (known as “Kokua”) located in the Queen Lili'uokalani Center for Student Services (Room 013): KOKUA Program; 2600 Campus Road; Honolulu, Hawaii 96822. Voice: 956-7511; Email: kokua@hawaii.edu; URL: www.hawaii.edu/kokua

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, genderbased 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 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, 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.