UNIVERSITY of HAWAIʻI
WINDWARD COMMUNITY COLLEGE
Ke Kulanui Kaiāulu o ke Koʻolau

ERTH 135 Natural Disasters and Human History

Fall 2026

3 Credits | CRN 82139

About Windward Community College

Mission Statement

ʻO keia ka wā kūpono e hoʻonui ai ka ʻike me ka hoʻomaopopo i kō Hawaiʻi mau hoʻoilina waiwai. Aia nō hoʻi ma ke Kulanui Kaiāulu o ke Koʻolau nā papahana hou o nā ʻike ʻake akamai a me nā hana noʻeau. Me ke kuleana koʻikoʻi e hoʻohiki ke Kulanui e kākoʻo a e hoʻokumu i ala e hiki kē kōkua i ka hoʻonui ʻike a nā kānaka maoli. Na mākou nō e hoʻolako, kākoʻo a paipai i nā Koʻolau a kō Oʻahu aʻe me nā hana noʻeau ākea, ka hoʻonaʻauao ʻoihana a me ka hoʻonui ʻike ma ke kaiāulu—hōʻaʻano a e hoʻoulu i nā haumāna i ka poʻokela.

Windward Community College offers innovative programs in the arts and sciences and opportunities to gain knowledge and understanding of Hawaiʻi and its unique heritage. With a special commitment to support the access and educational needs of Native Hawaiians, we provide the Koʻolau region of Oʻahu and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.

ʻĀina

Windward Community College is located in the ahupuaʻa of Kāneʻohe and Heʻeʻia in the moku of Koʻolaupoko on the island of Oʻahu. Both ahupuaʻa are directly connected to the moʻo ʻōlelo of Pāpa and Wākea, who are seen as the ancestors of the Hawaiian nation. The campus sits beneath the puʻu of Keahiakahoe, which is also connected to many moʻo ʻōlelo of this ʻāina. Because wind names and rain names are associated with specific ʻāina, the rain name of Kāneʻohe is known as the ʻĀpuakea and the rain name of Heʻeʻia is the Ulumano.

Instructor Information

About Your Instructor

My name is Arjun Aryal. I received my PhD in Geophysics from the University of Hawaii in Hawaii, USA, in 2013. Before joining UH, I earned an MPhil in GIS and Remote Sensing from the University of Cambridge, England, and an MS in Geology from Purdue University, Indiana. My research and experience include understanding geologic processes, such as landslides and earthquake cycles, using data from GPS, radar satellites, laser scanners, and computer models. I have conducted significant geologic fieldwork in many parts of the world, including the Himalayas, the US mainland, Alaska, Europe, and Hawaii. I was part of an Ocean mapping program and participated in a French Oceanographic Research Cruise. I am also actively involved

in many charitable activities (mostly education-related) in many parts of the world. You can see more about my professional background at https://www.linkedin.com/in/arjunaryal/. (not all of them are updated, though). At WCC, I also advise the Rotaract Club.

I believe that teaching and learning are active, two-way processes. My goal is to support your growth, which means **what you learn matters far more than what I teach.** I invite you to engage in discussions, ask 'why,' and challenge ideas. Your active participation and curiosity are what make this course successful and are my greatest sources of motivation as an educator.

How to Contact Your Instructor

Instructor Name:	Dr. Arjun Aryal (Visit Arjun's Zoom Room in Lamakū for details)
Office/Class:	Hale ʻImiloa 119 (Office) or 113 (Lab/Classroom)
Office Hours:	Zoom - M 12 - 2 PM. Please make an appointment at https://www.star.hawaii.edu/. In-person - TTH 9 AM to 10 AM (Walk-in ok) at WCC
Tel:	8082369257 (Office)
Email:	aryal@hawaii.edu
Zoom:	See Arjun's Zoom Room in Lamakū
More about the Instructor:	See Arjun's Zoom Room in Lamakū

Response time: I generally respond to emails and Q&A within a day. Please call/text me at 8082555139 if you need immediate help.

Alternate Contact Information

If you are unable to contact the instructor, have questions that your instructor cannot answer, or for any other issues, please contact the Academic Affairs Office:

- Location: Alakaʻi 121
- Phone: (808) 235-7422

Contingency Plan

If there is an outage, weather situation, or family emergency on my end, I will do my best to find a way to communicate an update as soon as possible about my return to the course. Mahalo in advance for your understanding and I hope you will do the same.

Course Format & Structure

This course is offered in a 16-week face-to-face format. Please note that this is not a self-paced course; our course schedule is provided in this syllabus.

You do not need to buy any textbook for this class; I will provide materials in class.

Participation Verification

Campuses are required by federal regulations to verify the participation of students in their classes. In accordance with Executive Policy 7.209, all students in the University of Hawaiʻi

system are required to establish “participation” to ensure that they are not dropped from their class(es). Effective Fall 2021, students who fail to participate by the late registration period for a class will be administratively dropped from that class. Students may also be dropped from dependent prerequisite and/or corequisite classes if both courses do not establish participation.

Course Information

Catalog Description

Examines how natural hazards have affected human culture and societies from pre-history to the present in Hawai‘i/Oceania, Asia, Africa, Europe, and the Americas. (3 hrs. lect.) WCC: FGC

Prerequisites

There are no prerequisites or co-requisites. When available, students are encouraged to take ERTH 103, ERTH 101, or the companion lab ERTH 101L.

Student Learning Outcomes

Students can expect to attain the following outcomes as a result of taking this course:

1. 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.
2. Students can apply technical knowledge of relevant computer applications, laboratory methods, and field methods 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 geology and geophysics, including the fundamental tenets of the sub-disciplines, and their context in relation to other core sciences, to explain complex phenomena in geology and geophysics.

Course Materials

Reference books:

Disaster and Human History: Case Studies in Nature, Society and Catastrophe, 2d ed., Benjamin Reilly, McFarland, 2022, ISBN 1476688095, 9781476688091 (Ref Only). A digital copy of this book is available through the WCC library.

Time: Nature's Extremes: Earthquakes, Tsunamis, and Other Natural Disasters that Shape Life on Earth (Ref Only)

Natural Disasters, Marshak, Rauber, and Johnson, 2022, WW Norton & Company.
There will be other assigned readings (mostly, they will be assigned to group readings and for projects).

Additional information about the course

We live on an active, dynamic planet. Human history has been shaped mainly by human activity, but it is not entirely separate from natural processes. This course will explore how various 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 lectures and hands-on learning through group projects. After outlining the hazards associated with various geologic processes, we will examine historical examples and how different societies have reacted to and changed in response to these natural disasters. Following a week of introduction to how our dynamic planet works and how this dynamism can result in hazardous conditions, the semester will be divided into four modules dedicated to volcanism, earthquakes, tsunamis, and floods. Each module will consist of multiple classes, starting with an introduction to the particular hazard. A group project will be assigned to each module. Case studies of the specific hazards will be presented, including their cultural and historical effects. The student groups will present their preliminary results to the class, with feedback and discussion from fellow students and the instructor. Time permitting, additional case studies will be introduced.

Lamakū Learning Management System (https://lamaku.hawaii.edu/d2l/home)

Learn about the Hawaiian meaning of the word “lamakū”: Lamakū Pronunciation, Meaning, and Importance.

- UHCC Lamakū Student Resources (how-to videos)
    - Contact UH ITS for 24/7 Lamakū assistance.
- Keeping Accessibility and UDL in Mind
    - If you find any course content that needs remediation and/or updating, please kindly share and I will immediately work to make the content accessible.
- Lamakū courses will appear 5 days before the first day for the academic term and will become inactive (no longer be available to access) 3 weeks after the end of the term. Be sure to save any coursework you may need from Lamakū *during* the term.
- Lamakū automatically logs you out *if it does not detect activity for three hours*. A warning message will appear, notifying you of the lack of activity. Activity is defined as clicking a button in Lamakū, such as "Save Draft" or "Next" (in a test), clicking on a course tab, or taking an action that sends information to the server.

Other Technology

D2L Brightspace, the parent company of Lamakū, recommends users choose the latest versions of Google Chrome, Mozilla Firefox, Microsoft Edge, or Apple Safari as their internet browser.

We recommend that students update their internet browser at the start of each term, search for how to allow pop-up windows, adjust their cookies, and clear device history. Also, fully restart your computer and/or device from time to time to optimize performance.

Review the privacy/security policies before using the technologies we will be using in this class. Contact me if you would like to discuss the use of alternative options or technologies.

In this class, you may need to use

- Adobe Reader is used to read course files (accessibility statement, privacy policy)
- Google Drive is UH-provided cloud storage (accessibility statement, privacy policy)
- Google Docs is used to create documents (accessibility statement, privacy policy)
- Google Sheets is used to create assignment and reference worksheets (accessibility statement, privacy policy)
- Google Slides is a presentation authoring software provided by UH (accessibility statement, privacy policy)
- Kahoot! is used for review activities (accessibility statement, privacy policy)
- Miro is used for graphically organizing information (accessibility statement, privacy policy)
- YouTube is used for delivering some of the course content (accessibility statement, privacy policy)
- Zoom is used for the Synchronous Sessions and virtual office (accessibility statement, privacy policy)

Grading Policy

Grading will be based on the following points of distribution

Homework and Quizzes	25%
Attendance and Class Presentation/Discussion	25%
Midterm	25%
Final	25%

Letter Grade Breakdown: A = 90%+; B = 80 – 89%; C = 70 – 79%; D = 60 – 69%; F = < 60%
Please check your grade book in Lamakū regularly.

Make-up Exams/Early Exams: If such a situation arises, please contact your instructor. Note that make-up and/or early exams might be in essay format and may be substantially more time-consuming.

Students involved in academic dishonesty will receive an "F" grade for the course. Academic dishonesty is defined in WCC's college catalog.

Assessment and Tasks

This is an in-person class offered in a 16-week time frame. The class schedule is followed, so it is important to attend regularly. The students are required to follow a weekly schedule and to participate in class discussions.

Homework: There will be four homework assignments, each requiring group work and class discussion.

Project: There will be a term project, which can be making a poster or writing a magazine-format article.

Quizzes: In Iclicker before the class.

Activities Required at Scheduled Times Other than Class Times

Students are required to work in a group. Library visit and other research activities are required.

Course Content and Schedule

Tentative course contents or topics and weekly schedule :

Week #, day(s)	Topic	Details	Due
1, Aug [25, 27]	Introduction to Geology	Earth Structure, Plate Tectonic, Plate Boundaries	Participation verification
2, Sep [1, 3]	Volcanism	Magma generation and volcanic eruptions, Volcanic hazards; effects of volcanoes such as Tambora in Indonesia and Ilopango (El Salvador)	
3, Sep [8, 10]	Volcanism	Historical effects (Santorini ~1600 BCE; Vesuvius 79 CE); group discussions on Volcanoes, Holocene eruptions in PNG, and cultural disruptions after the eruptions; 20th-century eruptions in Italy	Hm1
4, Sep [15, 17]	Volcanism	Class discussions about Tambora and Ilopango, Hawaiian eruptions (ʻAilāʻau and Keanakākoʻi eruptions and; connections to epic Hiʻiaka story, current eruption and Pāhoa), Continue volcanic discussions.	Class Presentation
5, Sep [22, 24]	Earthquakes	Causes, measurement, location, Hazards, earthquakes from 1800-1950	
6, Sep [29, Oct1]	Earthquakes	Hawaiian Earthquakes, 1868 Kaʻū Mw 8.0 (?), Asia (Japan, China), Middle East and Europe (Lisbon).	Hm2
7, Oct [6, 8]	Earthquakes	Earthquakes from 1800-1950 and other Historic Earthquakes, 2010 Haiti (poverty and corruption), How Have Earthquakes Shaped Civilization?	Class Presentation
8, Oct [13,15]	Review and Midterm	Catch-up, Review and Midterm	Midterm
9, Oct [20, 22]	Tsunamis	Generation and propagation, Hazards; (Tsunamis around the Pacific and Indian Oceans)	
11, Oct [27, 29]	Tsunamis	Government reactions; 2004 Indian Ocean, 2011 Tohoku, 1868, 1946 and 1975 Tsunami in Hawai`i ,	Hm3

12, Nov [3, 5]	Term Project	Term project assign/choose and preparation, how to search, ethics of scientific writing (Poster or Magazine article)	Class Presentation
13, Nov [10, 12]	Floods	Causes, measurement, Opening of Bosporus = Noah's flood? Chinese floods in ~2200-2000 BCE and effects on dynasties;	
14, Nov [17,19]	Floods, GLOFS, Landslides	Brief intro to floods on the Nile and in Holland; Flooding in Hawai`i & brief into to Louisiana flooding in 1927, (Mississippi River) and 2005 (Katrina); Bosphorus Flood and Noah's Ark and societal responses	Hm4
15, Nov [24, 26]	Climate Change	Climate Change science and natural disasters	
16, Dec [1, 3]	Climate Change related disasters	What caused the end of the Ancient Indus valley Civilization (Flood?, Earthquakes?, Climate Change?) , Flood and Noas Ark Discussion	Final Project
17, Dec [8]	Review	Review and catch up, No class on Dec 10	
18. Dec 15	Final	Non-cumulative (after the midterm)	Final

Academic Integrity

Work submitted by a student must be the student's own work. The work of others should be explicitly marked, such as through the use of quotes or summarizing with reference to the original author.

In this class, students who commit academic dishonesty, cheating, or plagiarism will have the following consequence(s):

- Students will receive a failing grade for plagiarized assignments.
- All cases of academic dishonesty are referred to the Vice Chancellor for Student Affairs.

Windward CC Student Conduct Information

UH System Student Conduct Policy EO 7.208

Use of AI tools – AI will be used in this class as a learning tool, and students can use it for learning purposes. Students are permitted to integrate AI into some substantive tasks, such as data analysis or spreadsheet creation. Students are encouraged to keep drafts of assignments and logs of interactions with AI applications to demonstrate their contribution to an assignment and check what is permissible for each assignment. Use of AI may be required in the course, but students are not permitted to use AI to complete their writing assignments.

Student Kuleana

- Please review our Hawai'i-Style Netiquette, which blends the values of ALOHA with approaches to how we should consider treating each other online.
- Class discussion has to be limited to the course content.
- Use of cell phone should be limited to the app or tool instructor suggested to use the class

- Windward CC has Grievance Procedures in place, but I encourage us to try to work together first to see if we can work through any troubles. Mahalo!

Academic and Technical Support

Academic Support

- Windward Community College Library
- Library eResources
- Library Research Units (LRUs)
- Ka Piko Tutoring Services: Math Lab, Speech Lab, Writing Lab, ʻŌlelo Hawaiʻi Lab
- Online Learning at Windward Community College
- STAR Balance

Technical Support

- UH ITS Help Desk: email help@hawaii.edu or call (808) 956-8883 (or 1-800-558-2669) for Lamakū and most technology support. Available 24 hours a day, 7 days a week, including holidays.
- Student Tech Support: email winhelp@hawaii.edu, call (808) 235-7437, or stop by in person at Hale Laʻakea 228. Available Monday–Friday from 8:00 am–4:00 pm.
- Lamakū: Click on the Lamakū Help link in the menu bar at the top of the Lamakū homepage to fill out and submit a question and get your answer via email.
- Information Security for Students

College Policies & Support Services

Your instructor may also provide additional resources in your Lamakū course.

Basic Needs

Basic needs include food and housing, childcare, mental health, financial resources, and transportation. 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 UH System Basic Needs.

Disabilities Accommodations Statement

Windward Community College's Disability Student Services Office (WCC-DSSO) is committed to providing equal access to qualified students with disabilities.

If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to participate fully in this class, you are encouraged to contact the Disability Specialist Counselor, Roy Inouye, to discuss reasonable accommodations that will help you succeed in this

class. The Disabilities Counselor can be reached at (808) 235-7448, wccdsso@hawaii.edu, or stop by the office (Hale Kakoʻo 106) for more information.

Financial Aid

If you are receiving financial aid and are contemplating not completing the course it is highly recommended that you contact the Financial Aid Office at (808) 934-2712 or email them at wccfao@hawaii.edu ***BEFORE*** you withdraw to discuss the impact this decision may have on your financial aid eligibility.

LGBTQ+

The University of Hawaiʻi system and Windward Community College are committed to building an inclusive community that supports and advocates for all students, staff, and faculty. We welcome all members of our campus community to our campuses: transgender, māhū, and people of all gender identities. All members of our campus community deserve a work and educational environment free from harassment or bullying based on their sexual orientation, gender identity, or expression. For more information, see the University of Hawaiʻi Commission on LGBTQ+ Equality. Windward Community College Commissioner: Scott Sutherland, scottjks@hawaii.edu

Mental Health Counseling

Mental Health and Wellness at Windward Community College provides counseling services and activities on campus to support students' life goals as well as their academic goals. Information about services can be found at WCC Mental Health & Wellness.

Student Conduct Code

Windward Community College follows the University of Hawaiʻi Code of Student Conduct which defines expected conduct for students and specifies those acts subject to University sanctions. Students should familiarize themselves with the Code of Student Conduct since, upon enrollment at Windward Community College, they have placed themselves under the policies and regulations of the University and its duly constituted bodies. The disciplinary authority is exercised through the Office of the Vice Chancellor for Student Affairs. Copies of the Student Conduct Code are available at the Office of the Vice Chancellor for Student Affairs.

TRiO Program

The Federal TRiO Programs are educational opportunity outreach programs designed to motivate and support students from disadvantaged backgrounds. TRiO includes six outreach and support programs targeted to serve and assist low-income, first-generation college students and students with disabilities in progressing through the academic pipeline from middle school to post-baccalaureate programs. Information about services can be found at Windward CC TRiO.

Title IX - Sex Discrimination And Gender-Based Violence Resources

Windward Community College 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, WCC has staff and resources to support and assist you. To report an incident of sex discrimination or gender-based violence, as well as receive information and support, please contact one of the following:

Kalaʻikū Stephenson, UH System Confidential Advocate
Phone: (808) 235-TBD
Email: advocate@hawaii.edu
Office: Hale Kākoʻo 101

Desrae Kahale, Mental Health Counselor & Confidential Resource
Phone: (808) 235-7393
Email: dkahale3@hawaii.edu
Office: Hale Kākoʻo 101

Mykie E. Menor Ozoa-Aglugub, J.D., Title IX Coordinator
Phone: (808) 235-7468
Email: mozoa@hawaii.edu
Office: Hale Kākoʻo 109

Karen Cho, Deputy Title IX Coordinator
Phone: (808) 235-7404
Email: kcho@hawaii.edu
Office: Hale ʻAlakaʻi 120

As a member of the University faculty, I am required to immediately report any incident of sex discrimination or gender-based violence to the campus Title IX Coordinator. Although the Title IX Coordinator and I cannot guarantee confidentiality, you will still have options about how your case will be handled. My 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, refer to the University's Title IX resources, and the Universityʻs Policy, EP 1.204.

UH Alerts

The UH Alert emergency notification system alerts the university community in the event of a natural, health or civil emergency. The information you provide will only be used in the event of an emergency that impacts the health and safety of the UH community or the closure of whole campuses. It will not be shared with others or used for routine UH communications or announcements. To sign up, visit UH Alerts for more information.