



UNIVERSITY
of HAWAII®
MĀNOA

OFFICE OF PUBLIC HEALTH STUDIES
Undergraduate Course Syllabus

1. Course Information

- A. Title: **PH441. Introduction to One Health**
- B. Number of Credit Hours: 3
- C. Summer Session: Second Summer Session. Dates: July 3 to Aug 11, 2023 .
- D. Course Meeting Days and Times: Asynchronous class
- E. Course Meeting Place: n/a

2. Instructor Information

- A. Name: **Dr. Catherine Pirkle**
- B. Phone: 808-956-8748
- C. Email: cmpirkle@hawaii.edu
- D. Office location: Biomedical Building Tower 102A
- E. Office hours: Please email Dr. Pirkle to schedule a time

3. Course Description

One Health is a term used in the field of public health, and other related fields including veterinary and clinical medicine, that explicitly acknowledges tight ties between human and animal health and the broader environment. Recent global outbreaks of a novel coronavirus (2019-nCoV) in 2019-20 and the large Ebola outbreaks in Central and Western Africa are terrifying reminders of the inextricable links between human and animal health. Emergent and in some cases, unprecedented issues related to climate change, including coral bleaching and ocean acidification, critically endanger local and global sources of food and medicine that are of special relevance to coastal and island peoples. In other cases, critical policy decision such as the United States Toxic Substances Control Act from the 1970s have allowed for thousands of industrial substances to go untested. Many of these substances are resistant to breakdown and have been detected in food webs and human populations thousands of miles from their point sources. The complexity and interconnectivity of animal-human-environment interactions require the convergences of many fields of study, including but not limited to veterinary medicine, public health and health policy, environmental and biological sciences, agriculture, nutrition, microbiology and immunology, climatology, and sociology. One Health, and its cousin concepts—EcoHealth, Environmental Health, and Planetary Health—all seek to foster interdisciplinary collaboration and innovation so as to better address the complex human health challenges our world is facing as a result of rapid demographic and environmental changes. **This introductory class seeks to familiarize students to the fundamentals of One Health by focusing on contemporary issues facing the field and with an explicit emphasis on oceans and human health.**

4. Course Schedule (Class Dates, Topics, and Assignments)

Because this is an asynchronous online class, content is divided into modules. Please complete each module before moving onto the next one, as they build upon each other. You can return to a module at any time.

Modules are listed below, along with associated readings and assignments. Content in purple color below refers to additional readings that graduate students are expected to complete compared to undergraduates.

Week	Modules	Module Activities (Readings & Assignments)
<p><i>Week 1</i></p> <p>Fundamentals: Ecosystems, Animal, and Human Health</p> <p><i>7/03 to 7/09</i></p>	<p>#1. One Health, EcoHealth, and Planetary Health. Learning a little about each.</p>	<ul style="list-style-type: none"> ● Reading: Roger et al. One Health and EcoHealth: the same wine in different bottles? <i>Infection ecology and epidemiology</i>. 2016; 6:30978. ● Amuasi et al. Reconnecting for our future: <i>The Lancet</i> One Health Commission. <i>The Lancet</i>. 2020;395:1469-1471. ● Presentation: Watch video on comparing approaches ● Forum: Introduce yourself
	<p>#2. Fate and transport of environmental contaminants, among other things.</p>	<ul style="list-style-type: none"> ● Reading: <ul style="list-style-type: none"> ○ Pages 7 to 16 of your textbook ● Hohn D. MOBY-DUCK. <i>Harper's Magazine</i>. 2007; 314:39-62. (pages 1-14 are mandatory) ● Presentation: Watch discussion with Dr. Delaney on ocean currents (i.e. the scientific version of Moby-duck) <p>Assignment: Forum post #1</p>
	<p>#3. Introduction to toxicology, the science of understanding poisons from our environment on ourselves</p>	<ul style="list-style-type: none"> ● Reading: <ul style="list-style-type: none"> ○ Pages 17 to 29 of your textbook ○ Grandjean. Paracelsus revisited: The dose concept in a complex world. <i>Basic Clin Pharmacol Toxicol</i>. 2016; 119:126-132. <p>Assignment: Study guide #1</p>
	<p>#4. Exposure to environmental contaminants, understanding how bad things can get into us</p>	<ul style="list-style-type: none"> ● Reading: <ul style="list-style-type: none"> ○ Pages 28 to 36 of your textbook ○ Read about mercury in fish ● Presentation: Listen to the podcast "Killers: J pod on the brink" <p>Assignment: Worksheet #1</p>
	<p>Week 1 Critical deadlines</p>	<p>First Forum Posts: due on Wednesday, July 5th, by 11:59pm HST.</p> <p>First Participation responses: due Friday, July 7th, by 11:59pm HST.</p> <p>First Study Guide assignment: due Friday, July 7th, by 11:59pm HST.</p> <p>First Worksheet: due Friday, July 7th, by 11:59pm HST.</p>
<p><i>Week 2</i></p> <p>Energy from fossil fuels and their consequences on the environment and human health</p>	<p>#5. Energy from fossil fuels, dependency and destruction</p>	<ul style="list-style-type: none"> ● Reading: <ul style="list-style-type: none"> ○ Pages 181-190 of textbook. ○ Khatchadourian R. The gulf war. <i>The New Yorker</i>. 2011; 87:36-59. ● Presentation: Listen to Dr. Nalley discuss living through the Deepwater Horizon disaster as a resident of Louisiana at the time <p>Assignment: Forum post #2</p>
	<p>#6. Warming waters and coral ecosystems</p>	<ul style="list-style-type: none"> ● Presentation: <ul style="list-style-type: none"> ○ Watch Dr. Delaney's discuss coral bleaching in Hawai'i ○ Watch the film Chasing Coral <p>Assignment: Study guide #2</p>

7/10 to 7/16	#7 Carbon emissions and changes to ocean chemistry	<ul style="list-style-type: none"> ● Reading: <ul style="list-style-type: none"> ○ Pages 191-200 of textbook. ○ Read about ocean acidification ○ Falkenberg et al. <i>Ocean Acidification and Human Health. International Journal of Environmental Research and Public Health. 2020; 17:4563.</i> ● Presentation: <ul style="list-style-type: none"> ○ Watch the short discussion with Dr. Sabine ○ Watch the short video on Climate Change and oyster farmers
	#8 Global climate change and broad impacts to ecosystems and people	<ul style="list-style-type: none"> ● Reading: Pages 201-208 of textbook. ● Presentation: <ul style="list-style-type: none"> ○ Listen to the podcast “The connection between coral reefs and human health,” which is about a new project in Kiribati ○ Watch the short video on climate change and coastal Indigenous People <p>Assignment: Worksheet #2</p>
	Week 2 Critical deadlines	<p>Second Forum Posts are due on Wednesday, July 12th, by 11:59pm HST.</p> <p>Second Participation responses: due Friday, July 14th, by 11:59pm HST.</p> <p>Second Study Guide assignment: Friday, July 14th, by 11:59pm HST.</p> <p>Second Worksheet: due Friday, July 14th, by 11:59pm HST.</p>
Week 3 <i>Managing wastes and protecting our waters</i> (7/17 to 7/23)	#9 Waste management- more than just sewage	<ul style="list-style-type: none"> ● Reading: Pages 235-246 of textbook ● Amato et al. <i>Impact of submarine groundwater discharge on marine water quality and reef biota of Maui. PLOS One. 2016.0165825.</i> ● Presentation: <ul style="list-style-type: none"> ○ Watch Dr. Amato’s presentation on ground water pollution in Hawai’i ○ Watch Dr. Nalley’s presentation on land-based pollutants in Hawai’i <p>Assignment: Forum post #3</p>
	#10 Drinking water	<ul style="list-style-type: none"> ● Reading: <ul style="list-style-type: none"> ○ Pages 247-261 of textbook ○ Manning R. Over the river: Returning home to Flint. <i>Harper’s Magazine. 2017;334(2000):37-46.</i> ○ Grandjean & Clapp. <i>Perfluorinated Alkyl Substances: Emerging insights into health risks. New Solut. 2015.15(2):147-63.</i> ● Presentation: Watch Dr. Pirkle’s presentation about PFAS and Red Hill <p>Assignment: Study guide #3</p>
	#11 Zoonoses	<ul style="list-style-type: none"> ● Reading <ul style="list-style-type: none"> ○ Pages 63-80 of textbook ○ Fayer et al. Zoonotic protozoa: from land to sea. <i>Trends in parasitology. 2004, 20: 531-536.</i> ● Presentation: <ul style="list-style-type: none"> ○ Watch Dr. Katz’s presentation about Leptospirosis in Hawai’i ○ Listen to the two short podcasts about toxoplasmosis in Hawaiian monk seals <p>Assignment: Worksheet #3</p>

	Week 3 Critical deadlines	Third Forum Posts: due on Wednesday, July 19th, by 11:59pm HST. Third Participation responses: due Friday, July 21st, by 11:59pm HST. Third Study Guide assignment: due Friday, July 21st, by 11:59pm HST. Third Worksheet: due Friday, July 21st, by 11:59pm HST.
Week 4 <i>Disasters in human engagement/exploitation of nature</i> (7/24 – 7/30)	#12 Geology meets public health and toxicology	<ul style="list-style-type: none"> ● Reading: <ul style="list-style-type: none"> ○ Pages 152-158 ○ Plumlee et al. Linking geological and health sciences to assess childhood lead poisoning from artisanal gold mining in Nigeria. <i>Environmental Health Perspectives</i>. 2013, 121: 744-750. ○ Watch short video on lead poisoning in Nigeria ○ Watch short video on mercury capture systems Assignment: Forum post #4
	#13 Crises and disasters in resource extraction	<ul style="list-style-type: none"> ● Reading: <ul style="list-style-type: none"> ○ Pages 209-219 of textbook ○ Rust S. How the U.S. betrayed the Marshall Islands, kindling the next nuclear disaster. <i>LA Times</i>. 2019. November 10. ○ News article about Brazilian mine disaster ○ de Freitas et al. From Samarco in Mariana to Vale in Brumadinho: mining dams disasters and Public Health. <i>Cadernos de Saude Publica</i>. 2019.35(5)e0005219 ○ Watch short video on Brumadinho Assignment: Study guide #4
	#14 Encroaching on nature—Too close for comfort	<ul style="list-style-type: none"> ● Reading: <ul style="list-style-type: none"> ○ Qui J. How China’s “bat woman” hunted down viruses from SARS to the New Coronavirus. <i>Scientific American</i>. 2020. March 11. ○ Covid-19 and mining intersections ○ DR Congo, mining and COVID-19 risk Assignment: Worksheet #4
	Week 4 Critical deadlines	Fourth Forum Posts: due on Wednesday, July 26th, by 11:59pm HST. Fourth Participation responses: due Friday, July 28th, by 11:59pm HST. Fourth Study guide assignment: due Friday, July 28th, by 11:59pm HST. Fourth Worksheet: due Friday, July 28th, by 11:59pm HST.
Week 5 <i>Action, Innovation and Solutions</i> (7/31 to 8/06)	#15 Interdisciplinarity and novel perspectives in Oceans and Human Health	<ul style="list-style-type: none"> ● Presentation: <ul style="list-style-type: none"> ○ Watch the presentation with the medical anthropologist Dr. Rouja about his work in Bermuda and Australia ○ Watch (and read) the additional resources from Dr. Rouja about wrecks, sea level rise, and medical mysteries in Bermuda Assignment: Forum post #5
	#16 Natural Resource Management– Innovation and solutions	<ul style="list-style-type: none"> ● Presentation: <ul style="list-style-type: none"> ○ Listen to this discussion with Dr. Dacks about integrating social and cultural considerations into natural resource management ○ Watch the Presentation with Dr. Furgal about innovative projects and solutions in the Canadian Arctic ○ Watch the movie <i>Utsuk</i> about the nutritional transition in Arctic Canada and the importance of traditional diet to health ● Don’t forget to work on your final assignment!

	Week 5 <i>Critical deadlines</i>	Fifth Forum Posts: due on Wednesday, August 2nd, by 11:59pm HST. Fifth Participation responses: due on Friday, August 4th, by 11:59pm HST. Final Assignment: due on Friday, August 4th, by 11:59pm HST.
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5. Description of Course Assignments

- 1) Class participation:** While this is an asynchronous class, you are still expected to engage and discuss with your classmates. There are weekly forum assignments (see below). You will be expected to complete your assignment for the forum post, **and also to comment and discuss the posts of your peers.** To receive maximum participation points, you will provide a minimum of **two additional comments to the forums per week.** These might be reflections on the posts of others, questions to your peers, or the sharing of content related to the week's materials and an explanation of why you are sharing it with the class and how it relates to that week's modules.
- 2) Study Guides:** Most weeks you will be assigned study guide activities that are due the subsequent week. This activity is designed to reinforce the material presented in your textbook and help you to better understand the class content. You will be graded on the accuracy of your responses.
- 3) Forum Posts:** Each week you will be expected to provide forum discussion content. **Please carefully follow the instructions provided in your modules.** These will tell you which forum topics apply and when they apply. Forum topic instructions will vary weekly.
- 4) Worksheets:** Most weeks you will be asked to complete a worksheet related to a reading or readings that have been assigned to you. Carefully follow the instructions provided to you in the worksheet, ensuring you have noted the due date. WORD versions of the worksheets are available in your resources folder.
- 5) Final assignment:** For your final assignment, you will be given a list of topics. You will select **only one** topic. It is your choice which topic you select. For this assignment you will create a list of argument for and against a given topic. You are expected support your arguments by citing credible sources. At the end of your document, you will provide a bibliography. Please consult your resources folder in Lulima for your options and specific instructions on how to complete this assignment.

Assignment	Points	Percentage of Total
Forum posts	20	20%
Participation	10	10%
Study guide activities	20	20%
Worksheets	20	20%
Final Assignment	30	30%
Total	100	100%

7. Grading Scale

Grade	Percentage	This course will use the +/- grading system
A+	97-100	Excellent, distinctive work. Demonstrates sophisticated understanding: Nuanced and insightful account, powerful and effective application of concepts, frameworks and theories discussed in class and articulated in written work.
A	93-96	
A-	90-92	
B+	87-89	Above average work. Demonstrates accomplished understanding: Thorough, well-documented account; adequate and apt application of concepts, frameworks and theories discussed in class and articulated in written work.
B	83-86	
B-	80-82	
C+	77-79	Average work, sufficient, but not distinctive. Acceptable view with some misconceptions or oversight; not fully supported; acceptable but limited application of concepts, frameworks and theories discussed in class.
C	73-76	
C-	70-72	
D+	67-69	Poor, insufficient work. Naïve or inadequate understanding: simplistic account and use of concepts, frameworks and theories discussed in class. Unable to articulate thoughts and ideas in written work.
D	63-66	
D-	60-62	
F	<60	Unacceptable work

8. Course Policies:

- Class assignments must be received **when due** to receive full credit. Due dates are indicated in the course schedule and on the Lualima calendar. Assignments are due by **midnight** on date they are due. **Ten percent** will be deducted for **each day** the assignment is late. **Assignments must be submitted via the Lualima Dropbox system.** You must let me know as soon as possible if unforeseen circumstances arise and you cannot submit your assignment on time, in order to discuss an alternative arrangement. It is up to me to decide whether the unforeseen circumstance warrants an extension to the deadline.
- **Use proper fonts and formatting.** All assignments submitted through the Lualima Dropbox system must be **typed** with a word processor and be **double-spaced**. NO handwritten assignments will be accepted. Only **12-point** Times New Roman font is accepted. Assure that all assignments contain your name. Use 1" or 1.5" margins on the page.
- **File Names.** When submitting your assignment through the Lualima Dropbox, please use the following file name conventions: **Last Name _ Assignment Name _ Date**. For example: Pirkle_Worksheet1_May28
- **Use references wisely and cite your references properly.** Appropriate citations and references are expected when citing the work of others, including visual media. Please follow the [International Committee of Medical Journal Editors \(ICMJE\) recommendations](#) for citing references (Vancouver Style).
- **Academic Dishonesty:** Plagiarism, cheating and other forms of academic dishonesty will result in a failing ("F") grade for the assignment. More than one incident of academic dishonesty will result in failing ("F") grade for the course. Equally, more than one incident will also result in reporting the academic dishonesty to the Office of Judicial Affairs. Students should familiarize themselves with the [University of Hawai'i Student Conduct Code](#). (accessed Aug 10, 2016).

Accordingly: ***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...***

Cheating includes, but is not limited to:

- 1) use of any unauthorized assistance in taking quizzes, tests, or examinations;
- 2) use of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments;
- 3) the acquisition, without permission, of tests or other academic material belonging to a member of the UH faculty, staff or student
- 4) engaging in any behavior specifically prohibited by a faculty member in the course syllabus or class discussion...

Plagiarism includes, but is not limited to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgement. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.

- **Syllabus may be revised as needed.**

9. Student Learning Objectives: At the end of this course, students should be able to...

- 1) Link changes in the physical environment to social and biological factors that impact human health
- 2) Articulate causal chains between ecosystem wellbeing and human and animal health
- 3) Describe mechanisms by which environmental damage and pollution disproportionately affects certain groups of people over others
- 4) List several examples of zoonotic diseases and their importance on either or both human and animal health
- 5) Describe local, national or international policies that contribute to or combat environmental degradation

10. Required Text or Readings

Maxwell NI. *Understanding Environmental Health: How We Live in the World*. 2nd ed. Burlington MA: Jones and Bartlett Learning; 2014.

Other readings also provided in your Lulima.

11. Undergraduate Competencies Addressed

1. Apply core concepts of public health, grounded in an ecological perspective to assessing public health issues.
2. Articulate the natural and social determinants of health status in communities, and the dynamic interplay among these factors in various populations.
3. Describe the major human diseases and their underlying etiologies.
4. Exhibit critical thinking and analytical abilities, including the capacities to engage in inductive and deductive thinking, quantitative reason, and to construct sound arguments

12. Institutional Learning Objectives Addressed

- 1) **Know—Breadth and Depth of Knowledge.** Students develop their understanding of the world with emphasis on Hawai'i, Asia, and Pacific by integrating:
 - a. Specialized study in One Health
- 2) **Do—Intellectual and Practical Skills.** Students improve their abilities to:
 - a. Think critically and creatively by applying questioning and reasoning; generating and exploring new questions; and reasoning with numbers and other mathematical concepts (numeracy).
 - b. Communicate and report by working cooperatively and collaboratively with written and oral communication skills.
- 3) **Value—Personal and Social Responsibility.** Students demonstrate excellence, integrity, and engagement:
 - a. Respect for people and cultures encouraged by exposure to concepts and materials about social justice and international engagement.
 - b. Stewardship of the natural environment by exploring factors that affect natural resources and sustainability.

13. University Policies for Opportunity and Accommodation

Statement on Disability: KOKUA Program

A student who may need an accommodation based on the impact of a disability is invited to contact me privately within the first weeks of the course. I would be happy to work with you and the KOKUA Program (Office for Students with Disabilities) to ensure reasonable accommodations in my course. KOKUA can be reached at (808) 956-7511 or (808) 956-7612 (voice/text), and they are located in room 013 of the Queen Lili'uokalani Center for Student Services.

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 experiences any of these, UHM has staff and resources on campus to support and assist you. Staff also can direct you to resources 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, contact:

Office of Gender Equity

The [Office of Gender Equity](#) offers direct services to victims and survivors of sexual harassment and sexual assault. Services offered include crisis screening and assessment, case referral, safety planning and risk assessment.

Paxon Chang (available Tuesdays, Wednesdays, and Fridays)

Telephone: (808) 956-9499 | Email: geneq@hawaii.edu

Queen Lili'uokalani Center for Student Services 210
2600 Campus Road, Honolulu, HI 96822

UH Confidential Advocacy

The UH Confidential Advocates provide confidential advocacy services and case management to victims* of sex discrimination and gender-based violence (including sexual harassment, gender-based harassment, dating and domestic violence, stalking, sexual exploitation, and sexual assault) who are involved in the University system on O‘ahu.

Natalia Villegas

Telephone: (808) 341-4952 | Email: nataliat@hawaii.edu

Pop in/Walk in Services:

Join Zoom Meeting: <https://hawaii.zoom.us/my/hccmanoaadvocate>

- Mondays: 1PM – 3:30 PM
- Tuesdays: 9:30 AM – 12 PM
- Wednesdays 9:00AM – 11:00AM
- Thursdays 4:30PM – 6:30PM

Student Parents At Mānoa (SPAM)

[Student Parents At Mānoa \(SPAM\)](#) seeks to increase the visibility of and resources for student parents at UH Mānoa as they pursue education while parenting. SPAM staff provide advocacy, support, and referrals for pregnant and parenting students to help them succeed in their educational goals.

Teresa Bill

2600 Campus Road
Queen Lili‘uokalani Center for Student Services 211
Honolulu, HI 96822
(808) 956-8059

Counseling and Student Development Center (CSDC)

The [Counseling and Student Development Center \(CSDC\)](#) offers support to UHM students, staff, and faculty to assist with personal, academic, and career concerns. All services are confidential and most are free of charge for Mānoa students. They also offer free consultation to faculty and staff on personal and student-related issues as well. CSDC office hours are from 8:00 a.m. to 4:30 p.m., Monday through Friday. They also offer immediate walk in appointments for urgent or emergency/crisis services during their regular daily hours.

Queen Lili‘uokalani Center for Student Services 312
2600 Campus Road
Honolulu, HI 96822
(808) 956-7927

University Health Services Mānoa (UHSM)

The [University Health Services Mānoa \(UHSM\)](#) is staffed by physicians, nurse clinicians, nurses, and other support staff, and offers a wide range of medical services and programs to UH Mānoa students, with many of the services also available to UH Mānoa faculty and staff and students from other UH campuses. Services include general medical care on a walk-in basis; women’s health, sports medicine, psychiatry, and dermatology clinics by appointment; pharmacy and clinical laboratory; and student training, employment and volunteer opportunities.

- 1. 1710 East West Road
Honolulu, Hawaii 96822
Honolulu, HI 96822**

(808) 956- 8965