

Course Syllabus

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SYLLABUS

Managing the health risks of climate change

GH/ENV H 220 (3 credits)

Lectures Mondays / Wednesdays 10:00 – 11:20am

Health Sciences Education Building (HSEB) 345

Instructor:

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Office hours will be held by appointment.

Prerequisites: None. This is a broad course open to students without specific training in the areas of climate change, environmental sciences, and/or public health.

Course Description

The world has entered the Anthropocene epoch. Humans are the primary drivers of global environmental changes and are changing the planet on the scale of geological forces. Global environmental changes include climate change, ozone depletion, biodiversity loss, nitrogen fertilization, and ocean acidification. Students will be introduced to the range of global environmental changes and their consequences for human health and well-being, with a focus on climate change and its consequences. Vulnerable populations and regions will be differentially affected, with the potential to increase poverty and inequities.

To address these challenges, the United Nations Sustainable Development Goals (SDGs) were agreed in 2015 to achieve a better and more sustainable future for all. They include 17 global goals with targets for 2030. The SDGs aim to end all forms of poverty. The SDGs are unique in that they call for action by all countries to promote prosperity while protecting the planet. They recognize that ending poverty must go hand-in-hand with strategies that build economic growth and address a range of social needs including education, health, social protection, and job opportunities, while tackling climate change and environmental protection.

Climate change is causing preventable injuries, illnesses, and deaths, with each additional unit of warming projected to further increase morbidity and mortality from most climate-sensitive health outcomes without additional, timely, and effective investments in adaptation and rapid and sufficient reductions in greenhouse gas emissions.

Heat-related morbidity and mortality is the best researched climate-sensitive health outcomes. Urban heat islands often amplify the impacts of heatwaves in cities. Risks for some vector-borne diseases, such as malaria and dengue fever, are projected to increase with warming from 1.5°C to 2°C, including potential shifts in their geographic range and changes in their seasonal distribution. Undernutrition is projected to further increase with additional warming. Separately, increasing concentrations of carbon dioxide are expected to reduce the nutritional quality of significant cereal crops. Other potentially large risks are insufficiently quantified, including the impacts of climate variability and change on a range of climate-sensitive health outcomes, such as diarrheal diseases, occupational heat stress, mental health, and migration and displacement.

Students will gain foundational knowledge in the health effects of global environmental changes, particularly climate change, benefits of policies and technologies to reduce greenhouse gas emissions and adaptation needs and strategies.

Overall Learning Objectives

Students will be able to:

- Identify the major global environmental changes and the upstream drivers behind these changes
- Identify the health risks of climate variability and change, including the sources of vulnerability and exposure to those risks
- Identify highly vulnerable populations domestically and globally
- Identify key interventions to promote climate-resilient and environmentally sustainable health systems
- Enumerate key issues in implementing, monitoring, evaluating, learning from, and continuously updating, adaptation policies and programs
- Outline the health benefits of mitigation policies to reduce greenhouse gas emissions

SPH Land Acknowledgement


The University of Washington acknowledges the Coast Salish people of this land, the land which touches the shared waters of all tribes and bands within the Duwamish, Suquamish, Tulalip, and Muckleshoot nations.


Expectations of Students

Students are expected to prepare for, attend, and participate in class discussions, demonstrate knowledge of assigned readings, and demonstrate teamwork/professionalism. Students are also expected to take the midterm exam, the final exam, and write one paper on a relevant topic chosen between the student and the instructors. (see Grades)

Academic Integrity

Students at the University of Washington (UW) are expected to maintain the highest standards of academic conduct, professional honesty, and personal integrity.

The UW School of Public Health (SPH) is committed to upholding standards of academic integrity consistent with the academic and professional communities of which it is a part. Plagiarism, cheating, unauthorized use of artificial intelligence (AI) tools, and other misconduct are serious violations of the University of Washington [Student Conduct Code \(WAC 478-121\)](#) .

<https://apps.leg.wa.gov/WAC/default.aspx?cite=478-121>). We expect you to know and follow the university's policies on cheating and plagiarism, and the SPH Academic Integrity Policy. Any suspected cases of academic misconduct will be handled according to University of Washington regulations. For more information, see the University of Washington [Community Standards and Student Conduct](#)  <https://www.washington.edu/cssc/>.

Use of AI

Where you are allowed to use generative AI tools for an assignment, you are required to do the following. These activities are meant to a) encourage your development of appropriate attribution skills, b) reflect upon how generative AI is contributing to or harming your learning, and c) protect you in the event of an academic misconduct inquiry.

1. 1) Use track changes to demonstrate how much of the written product was written by generative AI, and how much was written by you.
2. 2) Maintain a history within the AI tool of your prompts and outputs (for example the chat history in ChatGPT).
3. 3) Provide a written statement including the following.
 1. Describe how you used generative AI in the assignment or project.
 2. Describe how you verified outputs were correct or true.
 3. Provide a reflection on *how* using generative AI tools befitted you or potentially harmed the learning goals of the assignment.

4. Attest that you did not put any protected data into an AI tool during your completion of the assignment, including copyrighted materials, the intellectual property of others (including papers written by others, or the text of your instructor's assignment instructions), research or study data, interview transcripts, or personal information of others.

Classroom Climate

We are co-creators of our learning environment. It is our collective responsibility to develop a supportive learning environment for everyone. Listening with respect and an open mind, striving to understand others' views, and articulating your own point of view will help foster the creation of this environment. We engage our differences with the intent to build community, not to put down the other and distance our self from the other. Being mindful to not monopolize discussion and/or interrupt others will also help foster a dialogic environment.

The following guidelines can add to the richness of our discussion:

- We assume that persons are always doing the best that they can, including the persons in this learning environment.
- We acknowledge that systematic oppression exists based on privileged positions and specific to race, gender, class, religion, sexual orientation, and other social variables and identities.
- We posit that assigning blame to persons in socially marginal positions is counter-productive to our practice. We can learn much about the dominant culture by looking at how it constructs the lives of those on its social margins.
- While we may question or take issue with another class member's ideology, we will not demean, devalue, or attempt to humiliate another person based on her/his experiences, value system, or construction of meaning.
- We have a professional obligation to actively challenge myths and stereotypes about our own groups and other groups so we can break down the walls that prohibit group cooperation and growth.
[Adapted from Lynn Weber Cannon (1990). Fostering positive race, class and gender dynamics in the classroom. *Women Studies Quarterly*, 1 & 2, 126-134.]

We are a learning community. As such, we are expected to engage with difference. Part of functioning as a learning community is to engage in dialogue in respectful ways that supports learning for all of us and that holds us accountable to each other. Our learning community asks us to trust and take risks in being vulnerable.

Here are some guidelines that we try to use in our learning process:

- Listen well and be present to each member of our group and class.
- Assume that I might miss things others see and see things others miss.
- Raise my views in such a way that I encourage others to raise theirs.
- Inquire into others' views while inviting them to inquire into mine.
- Extend the same listening to others I would wish them to extend to me.
- Surface my feelings in such a way that I make it easier for others to surface theirs.

- Regard my views as a perspective onto the world, not the world itself.
- Beware of either-or thinking.
- Beware of my assumptions of others and their motivations.
- Test my assumptions about how and why people say or do things.
- Be authentic in my engagement with all members of our class.

Inclusion and Diversity

Diverse backgrounds, embodiments and experiences are essential to the critical thinking endeavor at the heart of university education. In SPH, students are expected:

1. To respect individual differences, which may include, but are not limited to, age, cultural background, disability, ethnicity, family status, gender, immigration status, national origin, race, religion, sex, sexual orientation, socioeconomic status, and veteran status.
2. To engage respectfully in the discussion of diverse worldviews and ideologies embedded in course readings, presentations, and artifacts, including those course materials that are at odds with personal beliefs and values.
3. To encourage students with concerns about classroom climate to talk to their instructor, advisor, a member of the departmental or SPH EDI Committee, the Assistant Dean for EDI, or the program's director.

Bias Concerns

The Office of the Dean has a [student concern policy](https://sph.washington.edu/students/student-concern-policy), a faculty concern policy and standard HR procedures for staff concerns. Our 2018 climate survey states that most people in SPH do not report bias incidents because they do not know where to go. Students are encouraged to report any incidents of bias to someone they feel comfortable with, including instructors, advisers, or department staff. They can email dcinfo@uw.edu for immediate follow up. Bias concerns can be anonymously and confidentially reported via the online form found here:

<https://sph.washington.edu/about/diversity/bias-concerns>

<https://sph.washington.edu/about/diversity/bias-concerns>. Data are collected by the Assistant Dean for EDI and the Director of Program Operations for Student and Academic Services and tracked for resolution and areas are identified for further training.






Personal Pronouns

We share our pronouns because we strive to cultivate an inclusive environment where people of all genders feel safe and respected. We cannot assume we know someone's gender just by looking at them. We invite everyone to share their pronouns.



Sexual Harassment

Sexual harassment is a form of harassment based on the recipient's sex that is characterized by:

1. Unwelcome sexual advances, requests for sexual favors, or other verbal or physical conduct of a sexual nature by a person who has authority over the recipient when:
 - o Submission to such conduct is an implicit or explicit condition of the individual's employment, academic status, or ability to use University facilities and services, or
 - o Submission to or rejection of the conduct affects tangible aspects of the individual's employment, academic status, or use of University facilities.
2. Unwelcome and unsolicited language or conduct that creates an intimidating, hostile, or offensive working or learning environment, or has the purpose or effect of unreasonably interfering with an individual's academic or work performance.


If you believe that you are being harassed, or have observed harassment, you can report it to SPH using the [bias concerns link](https://sph.washington.edu/about/diversity/bias-concerns) . The University also has designated offices to help you: [SafeCampus](https://www.washington.edu/safecampus/) ; [Office of the Ombud](https://www.washington.edu/ombud/) ; [Title IX Investigation Office](https://www.washington.edu/titleix/report/) ; and [University Complaint Investigation and Resolution Office](https://www.washington.edu/compliance/uciro/) .

Religious Accommodation Statement

Washington state law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW's policy, including more information about how to request an accommodation, is available at [Religious Accommodations Policy](https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/) . Accommodations must be requested within the first two weeks of this course using the [Religious Accommodations Request form](https://registrar.washington.edu/students/religious-accommodations-request/) .

Access and Accommodations

Your experience in this class is important to us, and it is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law. If you experience barriers based on a disability or temporary health condition, please seek a meeting with DRS to discuss and address them. If you have already established accommodations with DRS, please communicate your approved accommodations to your instructor at your earliest convenience so we can discuss your needs in this course.

Disability Resources for Students (DRS) offers resources and coordinates reasonable accommodations for students with disabilities and/or temporary health conditions. Reasonable accommodations are established through an interactive process between you, your instructor(s) and DRS. If you have not yet established services through DRS, but have a temporary health condition or permanent disability that requires accommodations (this can include but not limited to; mental health, attention-related, learning, vision, hearing, physical or health impacts), you are welcome to contact DRS at 206-543-8924 or uwdrs@uw.edu (mailto:uwdrs@uw.edu) or [disability.uw.edu](http://depts.washington.edu/uwdrs/) .

Safety

Call SafeCampus at 206-685-7233 anytime – no matter where you work or study – to anonymously discuss safety and well-being concerns for yourself or others. SafeCampus's team of caring professionals will provide individualized support, while discussing short- and long-term solutions and connecting you with additional resources when requested.

Illness protocol

If you feel ill or exhibit respiratory or other symptoms, you should not come to class. Seek medical attention if necessary and notify your instructor(s) as soon as possible by email. [UW Environmental Health & Safety](https://www.ehs.washington.edu/covid-19-prevention-and-response/face-covering-policy) [↗](https://www.ehs.washington.edu/covid-19-prevention-and-response/face-covering-policy) (<https://www.ehs.washington.edu/covid-19-prevention-and-response/face-covering-policy>) recommends that you wear a well-fitting mask while you are symptomatic.

Additional recommendations include getting your [annual flu shot \(https://wellbeing.uw.edu/flu-vaccination/\)](https://wellbeing.uw.edu/flu-vaccination/) and getting boosted with the updated COVID vaccines (available [at clinics and pharmacies, as well as through UW Medicine](https://www.washington.edu/coronavirus/vaccines/) [↗](https://www.washington.edu/coronavirus/vaccines/) (<https://www.washington.edu/coronavirus/vaccines/>) and local health agencies).

Please check your email and CANVAS announcements daily BEFORE coming to class. If we need to conduct class remotely because the instructor or a guest speaker is unable to attend in person, we will send all registered students an email and/or post a CANVAS announcement with a Zoom link for remote instruction or a plan for making up the class.

Excused Absence from Class

Students are expected to attend class and to participate in all graded activities. A student who is anticipating being absent from class due to a Religious Accommodation activity needs to complete the Religious Accommodations request process by the second Friday of the quarter. Students who anticipate missing class due to attendance at academic conferences or field trips, or participation in university sponsored activities should provide a written notice to the instructor ahead of the absence. The instructor will determine if the graded activity can be rescheduled or if there is equivalent work that can be done, as determined by the instructor.

Medical Excuse Notes

Students are expected to attend class and to participate in all graded activities, including midterms and final examinations. To protect student privacy and the integrity of the academic experience, students will not be required to provide a medical excuse note to justify an absence from class due to illness. A student absent from any graded class activity due to illness must request, in writing, to reschedule work as appropriate.

UW Writing and Research Center:

The Odegaard Writing & Research Center (OWRC) offers free, one-to-one, 45-minute tutoring sessions for undergraduate, graduate, and professional writers in all fields at the UW. They will work with writers

on any writing or research project, as well as personal projects such as applications or personal statements. Their tutors and librarians collaborate with writers at any stage of the writing and research process, from brainstorming and identifying sources to drafting and making final revisions. For more information or to schedule an appointment, please see their website

(<http://depts.washington.edu/owrc> ([Links to an external site.](#)) ↗ (<https://depts.washington.edu/owrc>))

or visit in person on the first floor of Odegaard Undergraduate Library.

Microsoft Word: It is beneficial in this course for students to have access to Microsoft Word. The Microsoft Office suite is available for free to all UW students and can be downloaded from this [online site \(https://itconnect.uw.edu/wares/uware/microsoft/microsoft-software-for-students/\)](https://itconnect.uw.edu/wares/uware/microsoft/microsoft-software-for-students/). If you have additional questions, please contact the TA.

Email Policy

Emails received after 5 pm will be answered within 24 hours whenever possible, and not before 9 am the following morning.

Course Requirements

Assigned textbook and readings. Readings will be assigned every week to be completed before class. The readings will be from the assigned textbook or other sources. Alternative media sources such as videos may be included.

Textbook:

Lemery J, Knowlton K, Sorensen C. Global Climate Change and Human Health, 2nd Edition: From Science to Practice. Wiley, 2021

Reading questions: Reading assignments will be given most weeks. These readings will supplement the lectures, as well as be a source for in-class discussion. Most of these readings will come from the textbook, while others will come from other sources and be provided on the canvas page. To facilitate discussion and contribute to your grade, you will be asked to submit two questions or comments on each reading by Midnight the day before class. Questions or comments will be submitted through the Canvas discussion page, which will close by Midnight the day before class. **No late submissions will be accepted.** You will be allowed to miss two reading questions submissions and still receive full credit.

Exams: The *midterm exam* will take place **Wednesday, 31 January**, covering course materials until that point. It will be an in-class exam consisting of multiple choice, short answer, and essay questions.

The *final exam* will take place in class **11 March at 8:30 am** during finals week and will be cumulative with a focus on the new materials after the midterm. The exam will consist of multiple choice, short answer, and essay questions.

Paper: Students will write a paper on some aspect of the health risks of global environmental change, reviewing a particular health risk, or describing adaptation or mitigation options to reduce that risk, in the context of a specific country or city. The paper will be at least 10 double-spaced pages and contain a minimum of 10 references that are peer-reviewed, scholarly articles found in scientific journals. A grading rubric will be provided for the paper. A one-paragraph summary and outline of the topic for the individual paper will be due one week after the mid-term exam on **Wednesday, February 7**. The paper will be due at the start of class on **Monday, March 4**. Please include your name in the file name.

Extra Credit: Students may receive extra credit for attending any event throughout the quarter relevant to the course materials and submitting a short essay about the event.

Grading criteria


- **30%**midterm exam
- **30%**final exam
- **30%**paper
- **10%** reading questions


We will use the UW's grading guidelines, available at

<http://depts.washington.edu/grading/practices/guidelines.html> 

<http://depts.washington.edu/grading/practices/guidelines.html>).

Course session schedule:

Class	Instructor	Topic	Assigned Readings
WEEK 1			
Class 1 WED 1/3	Ebi	Welcome to the Anthropocene	No reading assignments
WEEK 2			
Class 2	Ebi	International organizations and	https://sdgs.un.org/goals  https://sdgs.un.org/goals

MON		processes	
1/8			https://www.ucsusa.org/resources/ozone-hole-and-global-warming#.VsV2NfIrIU0  (https://www.ucsusa.org/resources/ozone-hole-and-global-warming#.VsV2NfIrIU0)

<https://www.youtube.com/watch?v=IBu3vltczRw>

WEEK 2

Class 3	Bumbaco	Weather, climate, climate variability, and climate change	Chapter 1: Primer on Climate Science
WED			
1/10			

WEEK 3

MON	<i>Martin Luther King Day</i>	No class	No reading assignments
1/15			

WEEK 3

Class 4	Boyer	Framework for understanding and managing risks; vulnerability and adaptation assessments	Chapter 14: Climate and Health Vulnerability Assessments: New Approaches and Tools for Adaptation
WED			
1/17			

WEEK 4

Class 5	Ebi	Methods for assessing current and projecting health risks of climate change	Chapter 13: Climate Modeling for Health Impacts
MON			Chapter 15: Climate Change Health Impact Projections: Looking into the Future
1/22			

WEEK 4

Class 6
Ebi
WED
1/24

Thermal extremes
and their health
impacts

Chapter 3: Health Impacts of Extreme Heat

WEEK 5

Class 7
Morin
MON
1/29

Infectious diseases

Chapter 4: Climate Change Impacts on the Hydrologic Cycle and Waterborne Diseases

Chapter 8: Climate and its Impacts on Vector-borne Diseases

WEEK 5

Class 8
WED
1/31

MIDTERM EXAM

WEEK 6

Class 9
Ebi
MON
2/5

Communicating risks

Chapter 16: Protecting Environmental Justice Communities from the Detrimental Impacts of Climate Change

Chapter 17: Climate Change Communication

Chapter 2: Climate Related Disasters: The Role of Prevention for Managing Health Risks

WEEK 6

Class 10
Errett
WED
2/7

Disaster policy and risk management

Chapter 22: Climate Change and Disaster Risk Reduction

Paper topic paragraph due

WEEK 7 Ebi Air quality Chapter 5: Degraded Air Quality

Class 11

MON

2/12

WEEK 7

Class 12

Ebi

Food security

Chapter 9: Food Systems Transformation: Toward Sustainable and Healthy Diets for All

WED

2/14

WEEK 8

MON

President's Day No class

No reading assignments

2/19

WEEK 8

Class 13

Pineo

Urban issues

WED

2/21

Chapter 18: International Perspective on Climate Change Adaptation

WEEK 9

Class 14

Ebi

Health benefits of mitigation policies

Chapter 19: Health Co-Benefits of Climate Mitigation Strategies

MON

2/26

Chapter 31: The Global Energy Transition and Public Health in a Changing Climate

WEEK 9

Hess

Biodiversity loss

Chapter 28: Climate Change and Loss of Biodiversity

Class 15

WED

Chapter 29: Ecosystem Services

2/28

WEEK 10SPM IPCC Special Report on the Ocean and
Cryosphere in a Changing Climate

Class 16

Oceans

Vecchione

MON

Final paper due

3/4

WEEK 10

Class 17

Course review

No reading assignments





WED

3/6

3/11

8:30-10:20 FINAL EXAM
am

Course Summary:

Date	Details	Due
Mon Jan 8, 2024	 Readings for 1/8: Sustainable Development Goals and the Ozone Hole (https://canvas.uw.edu/courses/1696473/assignments/8989037)	due by 10am
Wed Jan 10, 2024	 Reading for 1/10: Chapter 1 Primer on Climate Science (https://canvas.uw.edu/courses/1696473/assignments/8989134)	due by 10am
	 Student Introduction Activity (https://canvas.uw.edu/courses/1696473/assignments/8988354)	due by 10am
Fri Jan 12, 2024	 Week 2 Discussion (https://canvas.uw.edu/courses/1696473/assignments/9022989)	due by 11:59pm

Date	Details	Due
Sun Jan 14, 2024	 Student Introduction Activity https://canvas.uw.edu/courses/1696473/assignments/8988354 due by 11:59pm (1 student)	
Wed Jan 17, 2024	 Reading for 1/17: Chapter 14 Climate and Health Vulnerability Assessments https://canvas.uw.edu/courses/1696473/assignments/8990059	due by 10am
Fri Jan 19, 2024	 Week 3 Discussion https://canvas.uw.edu/courses/1696473/assignments/9050972	due by 11:59pm
Mon Jan 22, 2024	 Readings for 1/22: Chapter 13 Climate Modeling & Chapter 15 Health Impact Projections https://canvas.uw.edu/courses/1696473/assignments/8990094	due by 10am
	 Readings for 1/24: Chapter 3 Health Impacts of Extreme Heat https://canvas.uw.edu/courses/1696473/assignments/8990133	due by 10am
Wed Jan 24, 2024	 Student Introduction Activity https://canvas.uw.edu/courses/1696473/assignments/8988354 due by 11:59pm (2 students)	
	 Week 2 Discussion https://canvas.uw.edu/courses/1696473/assignments/9022989 due by 11:59pm (2 students)	
	 Extra Credit: Submit Potential Questions for Midterm https://canvas.uw.edu/courses/1696473/assignments/9029548	due by 11:59pm
Fri Jan 26, 2024	 Week 4 Discussion https://canvas.uw.edu/courses/1696473/assignments/9050978	due by 11:59pm
Mon Jan 29, 2024	 Readings for 1/29: Chapter 4: Climate Change Impacts on the Hydrologic Cycle and Waterborne Diseases & Chapter 8: Climate and its Impacts on Vector-borne Diseases https://canvas.uw.edu/courses/1696473/assignments/9022439	due by 10am

Date	Details	Due
	 Extra Credit Sports & Climate Change Short Paper (https://canvas.uw.edu/courses/1696473/assignments/9029492)	due by 11:59pm
Fri Feb 2, 2024	 Week 5 Discussion (https://canvas.uw.edu/courses/1696473/assignments/9051013)	due by 11:59pm
Mon Feb 5, 2024	 Readings for 2/5: Chapter 16: Protecting Environmental Justice Communities from Climate Change & Chapter 17: Climate Change Communication (https://canvas.uw.edu/courses/1696473/assignments/9022467)	due by 10am
Wed Feb 7, 2024	 Readings for 2/7: Chapter 2 Climate Related Disasters & Chapter 22 Disaster Risk Reduction (https://canvas.uw.edu/courses/1696473/assignments/8990736)	due by 10am
	 Paper Topic Introductory Paragraph (https://canvas.uw.edu/courses/1696473/assignments/9059977)	due by 11:59pm
Fri Feb 9, 2024	 Week 6 Discussion (https://canvas.uw.edu/courses/1696473/assignments/9060090)	due by 11:59pm
Mon Feb 12, 2024	 Readings for 2/12: Chapter 5: Degraded Air Quality (https://canvas.uw.edu/courses/1696473/assignments/9059980)	due by 10am
Wed Feb 14, 2024	 Readings for 2/14: Chapter 9: Food Systems Transformation: Toward Sustainable and Healthy Diets for All (https://canvas.uw.edu/courses/1696473/assignments/9059987)	due by 10am
Mon Feb 26, 2024	 Readings for 2/26: Chapters 18, 19, and 31: Global Perspectives on Climate Mitigation (https://canvas.uw.edu/courses/1696473/assignments/9064690)	due by 10am
Wed Feb 28, 2024	 Readings for 2/28: Chapter 28: Loss of Biodiversity, Chapter 29:	due by 10am

Date	Details	Due
	Ecosystem Services (https://canvas.uw.edu/courses/1696473/assignments/9064705)	