

# Course Syllabus



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## ENV H 472: Environmental Risk and Society (3 credits) Autumn 2022

### Instructors:

**Marissa Baker, PhD, Assistant Professor (bakermg@uw.edu)**  
(she/her/hers)

Department of Environmental & Occupational Health Sciences  
Office: Roosevelt Building (4225 Roosevelt Way NE), 1<sup>st</sup> Floor  
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**Ally Clonch, Teaching Assistant (acclonch@uw.edu)**  
(she/her/hers)

PhD Student, Environmental Health Sciences  
Department of Environmental & Occupational Health Sciences

**Class: M, W 10:00am-11:20am, Health Sciences Education Building (HSEB) 325**

**\*\*There is no final exam\*\***

*The University of Washington acknowledges that the land we gather on to learn, teach, and grow is the native land of the Coast Salish people, the land which touches the shared waters of all tribes and bands within the Suquamish, Tulalip, and Muckleshoot nations.*

Please note that all classes will be held in person. I will make attempts to record in-class sessions when possible, but much of class is small group discussion which may not translate well to video. When possible, class content will be recorded and uploaded to Canvas so that if you miss a session you can catch up with the content online. **Please note you will not be penalized for missing an in person class, and no points will be given out for participation or being in person. Also note that there may be technological challenges making it impossible to record lecture. In this case, content from a previous year may be posted, or content may not be available.** If in-person class must be cancelled for any reason, content will be recorded and put online, and I will communicate with you all openly.

Office Hours: Thursdays from 10:00am-11:00am, starting Thursday October 6. No office hours will be held on Thursday November 24 due to Thanksgiving. Office hours are group based, on **ZOOM ONLY**,

**AND WILL BE RECORDED.**

<https://washington.zoom.us/j/5885789148> → <https://washington.zoom.us/j/5885789148>

I am always open to meeting at other times 1:1 if that better fits your needs.

**Textbook:** You will NOT need to buy any textbook for this course. All readings will be provided as PDFs or links to webpages on the Canvas page.

**Overview**

This course examines the development and uses of environmental risk analysis, particularly in regard to public health concerns. Environmental risk analysis is practiced within a context of social and cultural values, leading to differing perceptions, ranking of risks, and challenges in effective risk communication. Students will learn about the technical components of the risk assessment framework, discuss various strategies for risk communication and risk management, and apply what they have learned to a variety of case studies for environmental health risk, including silica, methylene chloride, lead, glyphosate, COVID-19, and others.

**Learning Objectives**

By the end of this course, students will be able to:

1. Describe the primary components of current risk assessment and risk management procedures used for environmental health hazard evaluation and resolution.
2. Explain how social and cultural values shape perceptions and communication of environmental risks.
3. Identify the key aspects of public participation processes aimed at resolving environmental risk conflicts.
4. Apply critical thinking to emerging issues in environmental risk.
5. Demonstrate “environmental literacy” through analysis of news media reports of environmental health risk issues.
6. Apply risk assessment principles to a specific environmental health risk controversy.

**Courses in the Time of COVID**

I understand that this course is being offered in a time of tremendous uncertainty, and I recognize that you (and I) my encounter unexpected challenges during this quarter. That includes challenges related to health and illness, technology, caregiving responsibilities, work responsibilities, and more.

My goal this quarter is to support you in doing the best work you can in light of the challenges you face. I understand that college students face tremendous pressure to work hard, get “good” grades, and be as “successful” as possible. That said, I encourage you to remember that your health and well-being are far more important than the work you do in this class or any class, and I encourage you to take the time you need to care for yourself and your loved ones.

If you are finding it difficult to balance your health and well-being with your work in this class, please let me know. It is ok to ask for help and to acknowledge when you are struggling, and I am happy to help

connect you with resources and services through campus and also make accommodations to our course plan as needed. I am accessible by email, and I will do my best to respond to messages within 24 hrs.

I also ask that you be patient with me if the challenges of this quarter force me to make last-minute changes to the course plan. I will do my best to communicate any changes clearly, and make them with respect for the inconvenience, frustration, and confusion that change may cause.

### **Basic Needs**

Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to contact Juanita Ricks, Director for Student and Academic Services, [jmricks@uw.edu](mailto:jmricks@uw.edu) (<mailto:jmricks@uw.edu>), 206-616-3198.

Furthermore, please notify Dr. Baker about your concerns if you are comfortable in doing so. This will enable her to provide any resources that she may have.

### **Course Format**

All content will be delivered in person in live session, with recordings (hopefully!) made for those who, for whatever reason, are unable to attend in person. You are encouraged to attend in person for the best learning experience.

Most modules will be accompanied by a short reading and reading quiz, which will be due at the start of the class session. These quizzes are just a few points, and I will drop your two lowest scores.

At the end of the quarter, I will hold four live sessions during our class time to discuss some examples of environmental risk assessment. These will not be recorded and they will not have an online equivalent. If you cannot make these sessions, or do not feel comfortable attending these sessions, please let me know so alternate work can be arranged for you. The dates of the sessions will be:

1. Monday Nov. 28: 10am-11:20am Pacific
2. Wednesday Nov. 30: 10am-11:20am Pacific
3. Monday Dec. 5: 10am-11:20am Pacific
4. Wednesday Dec. 7: 10am-11:20am Pacific

### **Grading and Self-Assessment**

In this course, you have an opportunity to determine 50% of your final grade, and your graded course work will determine the other 50%. Thus, your grade will be half determined based on your own self-assessment of your learning and effort in the class, with the possibility of adjustments up or down from me.

At the end of the quarter, you will be asked to complete a short self-reflection questionnaire. This will ask you to discuss your strengths, what you could have done better, and where you could improve.

When assigning final grades, I will strive to honor your assessment of your own performance and progress in this course. However, I reserve the right to alter your proposed grade as appropriate, based on my own evaluation of your performance and progress in the course as a whole.

### Assignments, Examinations, Grading

Student mastery of material will be assessed a variety of ways over the course of the quarter. The point allocations for this course are below. Please keep in mind that assignments and their point allocation are subject to change at instructor discretion throughout the quarter. There is no final exam in this course.

## Point Allocation

Category	Subcategory	Points
Homework	HW #1	25
	HW #2	25
	HW #3	25
	HW #4	25
	Midterm	Midterm
Projects/Exercises	Risk Perception Exercise	10
	Risk Communication Exercise	10
	Mapping Risk Exercise	10
HYRTT Quizzes	Quizzes prior to each module (will drop 2)	20
Case Study Reflections	First Reflection	10
	Second Reflection	10

Category	Subcategory	Points
Self-Assessment	Your assessment of your grade	220
<b>Total</b>		<b>440</b>

## Homework

In the first half of the course, you will be given 4 homework assignments to complete outside of class. You will be given one week to work on each assignment, and while you are encouraged to work in groups with your classmates, and seek help from the instructor and TA as needed, each student must turn in their own, unique homework assignment. The topics for the assignments will be (roughly) as follows:

Homework 1: What is Risk, and how did the field of risk assessment emerge?

Homework 2: The role of Hazard Identification and Toxicology in the Risk Assessment framework

Homework 3: The role Dose-response and Exposure Assessment in the Risk Assessment framework

Homework 4: Risk Communication

It is estimated that each homework assignment should take you less than three hours to complete. If it is taking you more than three hours, please contact your instructor or TA. You will receive feedback on your assignments through Canvas, from either your instructor or TA.

You may have an opportunity to re-submit your homework if you believe that the grade you received does not reflect your mastery of the topic.

## Midterm

We will have a midterm in this course that will be completed outside of class. It will be open on 11/16 and due on 11/21, and will be submitted on Canvas. You are welcome to work on this midterm with your classmates, but each student must submit their own, and can only submit it once. If you would like a group of classmates to work with but cannot find one on your own, please reach out to the instructor and/or TA so we can help you find a study group. The midterm will be a mix of applied problems, short answer, vocabulary terms, and longer questions. It is worth 50 points. You will be given an opportunity after you get your midterm returned to reflect on the midterm and any material you may have not mastered in order to earn back some of the points you lost.

## **Projects/Exercises**

Three of our classes will involve you completing an exercise or short project with a group. You will be guided through the exercises as you work through the module, and will need to upload, present, or hand in a product at the end of class. Each of these will be worth 10 points, and will be graded based on effort. If you are not in class, you will be able to complete these on your own outside of class.

## **Applied Sessions**

There are four sessions at the end of the quarter that will feature discussion of an environmental health risk, based on a short reading. For two of these sessions, you will be asked to write a short reflection to turn in.

These will be discussion-based, around contemporary Risk topics

## **Readings**

Any required readings for this course will be provided as a PDF on the Canvas webpage, or as a link to a publicly-accessible webpage.

## **Late Assignment Policy**


I have set target completion dates for all quizzes/exercises/homework that are at least one week after it has been posted on Canvas. In order to keep up with the course, it is important that you try to meet these deadlines. However, if you need an extension for any reason, please contact the instructor to discuss your options.

Final grades are due December 20 at 5pm, so in order to get your final grade on time, all work will need to reach the instructor by December 19 at 5pm. Otherwise, we will need to discuss options that could result in a delayed grade.

## **Access and Accommodations:**

Your experience in this class is important to me. 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 have already established accommodations with Disability Resources for Students (DRS), please activate your accommodations via myDRS so we can discuss how they will be implemented in this course.

If you have not yet established services through DRS, but have a temporary health condition or permanent disability that requires accommodations (conditions include but not limited to; mental health, attention-related, learning, vision, hearing, physical or health impacts), contact DRS directly to set up an



Access Plan. DRS facilitates the interactive process that establishes reasonable accommodations. Contact DRS at [disability.uw.edu](http://disability.uw.edu)  (<http://depts.washington.edu/uwdrs/>).

### **Multi-cultural Inclusion Commitment**


The UW School of Public Health seeks to ensure all students are fully included in each course. We strive to overcome systemic racism by creating an environment that reflects community and mutual caring, while we ally with others in combating all forms of social oppression. This is a work in progress, as transformation is rarely a fully-completed project. In this course, we will look for opportunities to improve our performance as we seek to break down institutional racism. This can include course readings, class interactions, faculty performance, and/or the institutional environment. We encourage students to talk to your faculty member, the program director, and/or submit your comments in the course evaluation form.

### **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, and other misconduct are serious violations of [the University of Washington Student Conduct Code](https://www.washington.edu/studentconduct/)  (<https://www.washington.edu/studentconduct/>) (WAC 478-120). We expect you to know and follow the university's policies on cheating and plagiarism, and [the SPH Academic Integrity Policy](https://sph.washington.edu/students/academic-integrity-policy)  (<https://sph.washington.edu/students/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 website.

### **COVID-Related Expectations**

Per UW policy, this class will be conducted in person. Therefore, unless you meet the criteria for an accommodation from Disability Resources for Students (DRS) or a special arrangement approved by the SPH Office of the Dean that allows you to take the course remotely [[see student communications here](https://sph.washington.edu/sites/default/files/2021-08/UWSPH_RTC_Student-Email.pdf)  ([https://sph.washington.edu/sites/default/files/2021-08/UWSPH\\_RTC\\_Student-Email.pdf](https://sph.washington.edu/sites/default/files/2021-08/UWSPH_RTC_Student-Email.pdf))] you should only register for this class if you can attend in-person.

Please contact UW Disability Resources for Students (DRS) directly if you feel you may be eligible for an accommodation based on your status as an immunocompromised individual or based on other diagnosed physical or mental health conditions that might prevent you from being able to take classes in-person.

If you are a student enrolled in a program in SPH, and you are either living with an individual who is immunocompromised, OR you are unable to obtain a visa to travel to the US, you may be eligible for a “special arrangement” that will allow you to take this course remotely. Requests for special arrangements to take the class remotely should have been submitted to and approved by the Students and Academic Services team in the Office of the Dean before the beginning of the quarter. If you have questions about

this type of arrangement, please reach out to Student and Academic Services by email at [sphas@uw.edu](mailto:sphas@uw.edu) (<mailto:sphas@uw.edu>).

All UW students are expected to follow all campus-wide COVID-19 policies at the time, in addition to following state, local, and UW COVID-19 policies and recommendations. If you feel ill or exhibit possible COVID symptoms, please do not come to class. If you need to temporarily quarantine or isolate per CDC guidance and/or [campus policy](https://www.washington.edu/coronavirus/2021/08/31/autumn-quarter-health-and-safety-measures-message-to-uw-personnel/) (<https://www.washington.edu/coronavirus/2021/08/31/autumn-quarter-health-and-safety-measures-message-to-uw-personnel/>), you are responsible for notifying your instructors as soon as possible by email. If **you receive a positive COVID-19 test result, you should report to campus Environmental Health & Safety (EH&S) at the form found here:** <https://www.ehs.washington.edu/reporting> (<https://www.ehs.washington.edu/reporting>).

**Please check your email daily BEFORE coming to class.** If we need to conduct class remotely because the instructor or a guest speaker is complying with UW policies and unable to attend in person, we will send all registered students an email with a Zoom link for remote instruction. Thank you for your patience and support as we all transition together back to in-person learning!

### Religious Accommodations

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/) (<https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/>) (<https://registrar.washington.edu/staffandfaculty/religious-accommodatio...>) (<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/) (<https://registrar.washington.edu/students/religious-accommodations-request/>).

Date	Session Topic	Out of Class Assignments
1: Wed 9/28	Course and instructor introductions	
2: Mon 10/3	What is an EH Risk Risk Perception exercise	Problem Set #1 assigned
3: Wed 10/5	Risk Perception 2	



<b>Date</b>	<b>Session Topic</b>	<b>Out of Class Assignments</b>
4: Mon 10/10	Overview of Risk Assessment framework	Problem Set #1 due Problem Set #2 assigned
5: Wed 10/12	Hazard Identification/Toxicity Testing	
6: Mon 10/17	Dose-Response Assessment (for non-carcinogens)	
		Problem Set #2 due
7: Wed 10/19	Exposure Assessment	Problem Set #3 assigned
8: Mon 10/24	Risk Assessment Framework Review and Application	
9: Wed 10/26	Principles of Risk Communication	
		Problem Set #4 assigned
10: Mon 10/31	Risk Communication in class exercise	
11: Wed 11/2	Review Session (TA will lead)	Problem Set #3 due
12: Mon 11/7	Risk Management	
	Mapping Environmental Health Risk in class activity	
13: Wed 11/9		Problem Set #4 due 11/10
14: Mon 11/14	Proposition 65	

<b>Date</b>	<b>Session Topic</b>	<b>Out of Class Assignments</b>
15: Wed 11/16	<b>MIDTERM DAY (Do not come to class)</b>	Midterm released on Canvas
<b>Mon 11/21</b>	<b>No class due to Thanksgiving week</b>	<b>MIDTERMS DUE</b>
<b>Wed 11/23</b>	<b>No class due to Thanksgiving week</b>	
16: Mon 11/28	Case Study 1: Silica	Case study reflection (must complete two out of four)
17: Wed 11/30	Case Study 2: Glyphosate	Case study reflection (must complete two out of four)
		MIDTERMS RETURNED
18: Mon 12/5	Case Study 3: Methylene Chloride	Case study reflection (must complete two out of four)
19: Wed 12/7	Case Study 4: COVID-19	Case study reflection (must complete two out of four)
Mon 12/12	Final self-assessment due	

### Grades for this course

Grades for this course will be assigned based on the table below. Rounding will be done at the instructor's discretion.

Lower Percent Cut-Off	Assigned GPA

97.5	4.0
96.5	3.9
95.5	3.8
94.0	3.7
93.0	3.6
92.0	3.5
91.0	3.4
90.0	3.3
89.0	3.2
88.0	3.1
87.0	3.0
86.0	2.9
84.9	2.8
83.8	2.7
82.7	2.6
81.6	2.5
80.5	2.4
79.5	2.3
78.4	2.2

77.3	2.1
76.2	2.0
75.1	1.9
74.0	1.8
72.9	1.7
71.8	1.6
70.7	1.5
69.6	1.4
68.5	1.3
67.5	1.2
66.4	1.1
65.3	1.0
64.2	0.9
63.1	0.8
62.0	0.7
<62	0.0

## ACCREDITATION REQUIREMENTS & COMPETENCIES MET BY COURSE

1. **Environmental Health Science and Protection Accreditation Council (EHAC)** requirements met by this course include:
2. Core environmental health knowledge areas (pg 11)

### 3. Cross Cutting Knowledge Areas:

- Analysis and Reduction of Environmental Risks (i.e., Risk Assessment, Risk Communication and Risk Management)

#### 1. Environmental health technical areas (pg 11)

“Students shall have been exposed to the foundational principles of environmental health (six starred topic areas) and most of the following topic areas in their program of study. In-depth study shall have been received in at least four of the topic areas listed below.”

This course is an **in-depth study** of the **bolded** topic area in the list of foundation principles for EH.

Air Quality Control\*

All-hazard Preparedness

Built Environment

Global Climate Change and Human Health

Disease Prevention

Environmental Health Planning

Food Protection\*

Geographic Information Systems

Global Environmental Health

Hydrogeology

Injury and Violence Prevention

Institutional Health

Occupational Health and Safety\*

Radiation Health

Recreational Environmental Health

**Risk Analysis**

Soils

Solid and Hazardous Material and Waste Management\*

Water and Wastewater\*

Zoonotic and Vector-borne Diseases and Their Control\*

## 1. Council on Education for Public Health (CEPH) competencies met by this course include:

### D-10-1 Public Health Domains

- Overview of Public Health: Address the history and philosophy of public health as well as its core values, concepts, and functions across the globe and in society (Introduce)
- Role and Importance of Data in Public Health: Address the basic concepts, methods, and tools of public health data collection, use, and analysis and why evidence-based approaches are an essential part of public health practice (Cover)
- Identifying and Addressing Population Health Challenges: Address the concepts of population health, and the basic processes, approaches, and interventions that identify and address the major health-related needs and concerns of populations (Introduce)
- Human Health: Address the underlying science of human health and disease including opportunities for promoting and protecting health across the life course (Cover Science and Protection)
- Determinants of Health: Address the socio-economic, behavioral, biological, environmental, and other factors that impact human health and contribute to health disparities (Cover)
- Project Implementation: Address the fundamental concepts and features of project implementation, including planning, assessment, and evaluation (N/C)
- Overview of the Health System: Address the fundamental characteristics and organizational structures of the U.S. health system as well as to the differences in systems in other countries (N/C)
- Health Policy, Law, Ethics, and Economics: Address the basic concepts of legal, ethical, economic, and regulatory dimensions of health care and public health policy, and the roles, influences and responsibilities of the different agencies and branches of government (Cover Ethical and Regulatory)
- Health Communications: Address the basic concepts of public health-specific communication, including technical and professional writing and the use of mass media and electronic technology (Cover Technical Writing / Introduce Mass media)

### D13-1 Concepts

- Advocacy for protection and promotion of the public's health at all levels of society (Introduce)
- Community dynamics (Introduce)
- Critical thinking and creativity (Cover)
- Cultural contexts in which public health professionals work (N/C)
- Ethical decision making as related to self and society (Introduce)
- Independent work and a personal work ethic (Cover)
- Networking (N/C)
- Organizational dynamics (N/C)
- Professionalism (N/C)
- Research methods (Cover)
- Systems thinking (Cover)
- Teamwork and leadership (Cover)