

ENV H 472: Environmental Risk and Society (3 credits)
Autumn 2019

Instructors:

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(she/her/hers)

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Class: Monday and Wednesday, 10:00-11:20 AM, South Campus Center (SOCC) 301

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.

TA office hours: Mondays 12pm-1pm, Rotunda (and other times by appointment)

Instructor office hours: By appointment; review session will be scheduled the week of the midterm

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 consumer products, methylene chloride, wildfire smoke, glyphosate, and others. Students will frequently be asked to work with their fellow students, including discussions and exercises in class, and to produce a poster explaining an environmental health risk scenario.

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.

Required Readings

There will be a short required reading prior to most sessions. These will all be available on the Canvas site (under

“Modules”). Each reading will be accompanied by a low stakes HYRTT (Have You Read the Text?) quiz, which students will complete on Canvas, and must have done prior to the start of each class session.

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
Out of class Homework	HW #1	25
	HW #2	25
	HW #3	25
	HW #4	25
Class participation and pre-class Exercises	In-class Poll Everywhere	30
	Pre-class HYRTT quizzes	30
	General In-class participation	10
	Risk Communication in class exercise	10
	Neighborhood mapping in class exercise	10
Quizzes	In-class Midterm	100
	End of class quiz	50
Final Project	Group Poster	25
	Draft of Final Paper (credit/no credit)	10
	Individual Final Paper	50
Total		425

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: Thinking about risk

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. You will receive feedback on your assignments through Canvas, from either your instructor or TA.

Poll Everywhere, Attendance, Class Participation

Our course is held in an active learning classroom. Scientific evidence around teaching and learning has repeatedly shown that students learn best in an environment where they can practice active based learning, and the instructors are supportive of these techniques. Additionally, evidence confirms that active based learning is the most equitable way for students to learn in a classroom setting. For these reasons, our course will rely heavily on discussions, exercises, and projects with your classmates. Therefore, your attendance and participation is required during class time, and students are expected to attend all classes, and participate fully in the activities. We will not be recording lectures. Student attendance and participation will be assessed by using Poll Everywhere. Poll Everywhere is also used to assess understanding of the material so the instructor can adapt content presented in class in real-time. Poll Everywhere will be used in 17 class sessions, and you will receive two points for each class session you attend and participate with Poll Everywhere. I will drop your Poll Everywhere score from two class sessions, as I understand that some absences are unavoidable.

A few sessions will have a more substantive in-class group project, so specific points (credit/no credit) will be assigned to these sessions. This includes our Risk Communication session and a Neighborhood Mapping in-class

exercise, each worth 10 points. An additional 10 points will be awarded by the instructor for general participation—asking questions, volunteering information, actively working with your group, etc.

If you know you will need to miss a session for a university-sanctioned event, health/family reason, or religious reason please let the instructor know as far in advance as possible in writing (email). This way, we can come up with make-up activities if necessary, or help you to have access to the material you will miss.

Random Call

In this course we will utilize random call to answer questions posed by the instructor. The reason for using random call is it helps to create a more equitable classroom by ensuring that voices from all different backgrounds and life experiences are heard. The instructor WILL NOT use random call unless you have already had an opportunity to discuss a question with a partner or group. It is okay to answer “I don’t know” or “I don’t want to share” if the instructor calls on you. If you would like to be removed from the random call list, please contact the instructor.

HYRTT Quizzes

Prior to most sessions, you will complete a HYRTT (Have you read the text?) quiz on Canvas. These are low-stakes quizzes that are open book and open note to help you prepare for the following class. The questions cover basic course content that you should be familiar with to get the most out of class. The readings are intentionally kept short in this class in order for you to be more likely to complete them and retain information. By completing the reading and finishing the HYRTT quiz prior to class, you will be well prepared for the new content that will be presented in class. Pre-class quizzes close at 10:00am on the day of the class to which they apply, and your two lowest HYRTT quiz scores will be dropped at the end of the quarter.

Midterm & Final Quiz

This course will have a midterm, scheduled for Wednesday October 30. This midterm will be taken in class and include an individual portion and a group portion. It will be a mix of applied problems, short answer, vocabulary terms, and longer questions. It is worth 100 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.

On Monday December 2, you will also take an in-class “final” quiz. This will be worth 50 points as is a way to assess your mastery of the material in the 2nd half of the course.

Final Project

The second half of the course will feature a final project, which will consist of three parts:

(1) Group Poster presentation—you will work in a group of 4 to identify and research an environmental health risk. You will produce an academic poster about this risk, and present it during our final class session with your group. All members of the group will receive the same grade for the poster, half of which will be determined by peer evaluation.

(2) Draft individual paper—Each group member will write an individual paper about a subtopic of risk assessment. Each group member will receive their own grade, and submitting the draft is scored as credit/no credit. You will receive instructor or TA feedback on your draft.

(3) Final Individual Paper—Building off of your draft submission, you will write your final report on a subtopic related to the environmental health risk that you researched for your group poster. Each member of the group will choose one section of the paper to write, and each group member will receive their own grade. This paper should also include a 250 word summary of the environmental health risk, which you can work with your group to develop (or develop on your own—this page isn’t counted in the page count)

As I understand it can be challenging to find times for groups to meet, you will be given opportunities to meet and work in class with your group throughout the second half of the course. However, finding time to meet outside of class may still be necessary. You will be able to choose your own group,

Late Assignment Policy

I expect that all assignments be turned in by the deadline indicated on the course website. If an assignment is turned in late, it is subject to a 10% per day grade reduction (e.g., the score on a 3-day-late assignment will be reduced by 30%). If the assignment is late due to an unforeseen emergency, an explanation is required in writing (via email), and will be considered on a case-by-case basis. Similarly, the instructor will ensure feedback is returned promptly to students (within a week for homework and midterm).

Access and Accommodations:

Your experience in this class is important to me. If you have already established accommodations with Disability Resources for Students (DRS), please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs 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), you are welcome to contact DRS at 206-543-8924 or uwdrs@uw.edu or disability.uw.edu. 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. It is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law.

Religious Accommodations Policy

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](#). Accommodations must be requested within the first two weeks of this course using [the Religious Accommodations Request form](#).

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 (WAC 478-120). 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 website](#).

Plagiarism (which is using someone else's work, answers, phrases or sentences and calling them your own) is often misunderstood and careful attention should be paid to avoid plagiarism in the course. Students are expected to reference all work and give appropriate attribution for all materials cited, including any reference to websites or articles. More info at: <http://depts.washington.edu/grading/conduct/index.html>. In addition, we recommend the following online tools to help you avoid plagiarism:

1. The University has a license agreement with **VeriCite**, an educational tool that helps prevent or identify plagiarism from Internet resources. **VeriCite is activated on all of your writing assignments**. As soon as you submit your assignment, you can view the originality report. The report will include a score which will indicate the amount of original text in your work and whether all material that you quoted, paraphrased, summarized, or used from another source is appropriately referenced. Please use this tool and resubmit your assignment if you are not happy with the VeriCite score.
2. Watch "Getting Real About Plagiarism," the 7-part video by Assistant Professor of English, Leisha Stolt, at Ivy Tech Community College, available at https://www.youtube.com/watch?v=m0GJ_bErmRc
3. Read the Purdue University Online Writing Lab website to learn more about "Avoiding Plagiarism."
 - a. Overview and Contradictions: <http://owl.english.purdue.edu/owl/resource/589/1/>
 - b. Is it Plagiarism Yet?: <http://owl.english.purdue.edu/owl/resource/589/02/>
 - c. Safe Practices: <http://owl.english.purdue.edu/owl/resource/589/03/>
4. Use the UW Writing Center and Librarians as tools for improving your writing and finding peer-reviewed resources for your written assignments.

- a. Writing Center one-on-one tutoring: <http://depts.washington.edu/owrc/signup.php>
 b. Librarian appointment scheduler: <http://lib.washington.libcal.com/booking/owrc>

Tentative Course Schedule

Subject to change at instructor's discretion

Date	Topic	Out of class exercises	In class exercises	Preclass exercises
Week 1				
1: Wed 9/25	Course and instructor introductions What is an EH Risk?	Problem Set #1 assigned	Risk Bites Poll Everywhere	None
Week 2				
2: Mon 9/30	Risk Perception		Poll Everywhere	Slovic "Risk Perception" + HYRTT quiz
3: Wed 10/2	Overview of Risk Assessment framework	Problem Set #1 due	Poll Everywhere	ACS Risk Overview + HYRTT quiz
Week 3				
4: Mon 10/7	Hazard Identification/Toxicity Testing/Tox 21	Problem Set #2 assigned	Poll Everywhere Ryan Babadi, PhC to Lecture	Rodricks pp. 65-71 + ToxTutor pages + HYRTT quiz
5: Wed 10/9	Dose-Response Assessment (for non-carcinogens)		Poll Everywhere	Rodricks pp. 72-75 + ToxTutor pages + HYRTT quiz
Week 4				
6: Mon 10/14	Exposure Assessment	Problem Set #2 due; Problem Set #3 assigned	Poll Everywhere	Exposure Assessment Terms + ToxTutor Pages + HYRTT quiz
7: Wed 10/16	Risk Assessment Framework Review and Application		Poll Everywhere we will go over review questions similar to HW 3	Cohen Hubel et al. + HYRTT quiz
Week 5				
8: Mon 10/21	Risk Communication: in class group exercise	Problem Set #3 due Problem Set #4 assigned	In-class communication exercise Poll Everywhere	Reading + HYRTT quiz
9: Wed 10/23	Risk Management 1: The role of government and industry		Poll Everywhere [Last session that will be covered on midterm]	Rodricks pp. 282-293, 304-311 + HYRTT quiz
Week 6				
10: Mon 10/28	Risk Management 2: Other ways to manage risk -Proposition 65 -IARC	Problem Set #4 due	Poll Everywhere	Reading + HYRTT quiz
11: Wed 10/30	In-class Midterm		Individual and group components; No Poll Everywhere	Nothing

Week 7				
12: Mon 11/4	Mapping Environmental Health Risk, Environmental Justice		Poll Everywhere In class exercise	Reading + HYRTT quiz
13: Wed 11/6	Risk Management: The role of media -Form groups/write group norms	Submit group norms Submit group topic	Group selection Midterms returned	Reading + HYRTT quiz
Week 8				
Mon 11/11	No Class – Veterans Day	NA	NA	NA
14: Wed 11/13	Case Study 1: Glyphosate -Group work time	Optional midterm response due	Poll Everywhere	Reading + HYRTT quiz
Week 9				
15: Mon 11/18	Case Study 2: Wildfire Smoke -Group work time		Poll Everywhere	Reading + HYRTT quiz
16: Wed 11/20	Case Study 3: Personal Consumer Products -Group work time		Poll Everywhere	Reading + HYRTT quiz
Week 10				
17: Mon 11/25	Case Study 4: Methylene Chloride CBS News -Group work time	Draft report due	Poll Everywhere	Video + Reading + HYRTT
Wed 11/27	No Class – Thanksgiving	NA	NA	NA
Week 11				
18: Mon 12/2	Grad student presentation (30 mins) In-class quiz (30 mins)		Poll Everywhere Draft feedback In class quiz	None
19: Wed 12/4	Group Poster Presentations	Final poster uploaded to Canvas	Peer Poster evaluations	None
Finals Week				
Tue 12/10	Final papers due (submit online)	Final paper including 250 word summary		
No final in this class—enjoy your Winter break!				

ACCREDITATION REQUIREMENTS & COMPETENCIES MET BY COURSE

I. Environmental Health Science and Protection Accreditation Council (EHAC) requirements met by this course include:

B. Core environmental health knowledge areas (pg 11)

2. Cross Cutting Knowledge Areas:

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

C. 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*

II. 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)