ENVH 311: Introduction to Environmental Public Health
Spring Quarter 2025
Course Syllabus

Course Instructor

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Course Locations

Health Sciences Education Building Room 345

Graduate Teaching Assistants

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This course is taught on Coast Salish land - the land which touches the shared waters of all tribes and bands within the Duwamish, Suquamish, Tulalip and Muckleshoot nations.

> *Washington State is home to 29 federally recognized and five unrecognized tribes. We commit to demonstrating our collective humility and respect for the original caretakers of the land upon which the UW School of Public Health sits.*

Course Description

This course explores the relationship people have with their environment, the risk management choices made, and the resulting associations that affect health and physical

well-being for the individual, communities, and susceptible populations. The field of Environmental Public Health (EPH) is a professional, interdisciplinary field focused on the science and practice of preventing injury and illness from exposures to hazards in our environments.

ENVH 311 is designed as a survey course and is intended to introduce students to foundational and technical concepts in the field of EPH. Primarily, students will learn how a variety of environmental factors impact health outcomes, the current control measures on preventing or minimizing the health effects from the negative environmental impacts, and where to access additional information to make a difference at the individual, community, or higher level. The course is designed to acquaint the student with the scientific and technical foundations of the field and examines both practice and research contributions to understanding and controlling environmental hazards. Everyone is touched by EPH principles and topical areas of concern every day; we all eat, drink, produce waste, and breathe air each day. This course delivers important information and resources for the students' own health and wellness advocacy as they move out beyond this institution.

Course Meeting Times and Location

This course is being taught through a didactic lecture format for two days/week and a flipped lecture plus discussion format for one day/week (please refer to the tentative quarter schedule on page 8 or the canvas homepage). Students are expected to come to each class having read the pre-class materials, and on the discussion days, having watched a short, posted lecture video(s). The weekly discussion style class sessions are designed to dig deep into the course content, apply learning objectives to new scenarios, explore online tools and resources in a small group setting, and practice interpersonal communication, facilitation, and negotiation skills.

Classroom: Health Sciences Education Building Room 345.

NOTE: There is one UW-observed holiday this quarter. There will be no class on Monday, May 26th (Memorial Day).

Course Learning Objectives

It is intended that at the completion of this course, each student should be able to:

1. Describe and illustrate, through case example(s), ways in which environmental factors in community, occupational and residential settings impact health;
2. List the major agencies and organizations involved in environmental health protection and explain their basic responsibilities, programs and problems;
3. Explain the pertinent scientific principles associated with the major environmental health program areas;

4. Explain and illustrate, through case example(s), how factors, such as community perceptions, public health law, traditions, socioeconomic conditions, politics and interpersonal communications, may influence the practice of environmental health;
5. Describe the benefits and limitations of the various methodologies (such as regulation, education, impact statements and public funding) through which society attempts to minimize negative environmental health impacts;
6. Examine personal contributions to environmental degradation and their potential health consequences; and
7. Analyze at least one environmental health topic for its impact on health and propose solutions based on what is known about the challenges/barriers.

Course Requirements

Individual Assessments:

1. **Reading quizzes**: For most class sessions, the required readings come with a quiz. Most quizzes are ~2-4 questions, 1 pt/question (~60 pts total);
2. **Weekly discussion reflections**: Students are expected to come to the weekly discussion sessions having watched the recorded lecture(s), reviewed reading materials, prepared for the day of discussion, and complete an individual discussion summary afterwards. Each discussion summary is worth 5 points (~50 points total). Up to 2 discussion sessions can be made up by emailing your TA in advance.
3. **Synthesis assignments**: Throughout the quarter, several End-of-Module synthesis assignments will be used to supplement the student's self-awareness on a particular topic AND to assess comprehension at the end of a case. These assignments will be listed on the Canvas website, as well as introduced and discussed during lectures and discussion sessions (~100 pts total).
4. **Examinations:** There will be two progress assessment tests (100 pts each) -- one at approximately the halfway mark, and the second at the end of the quarter. The second test will be cumulative only in the sense that the basic principles and concepts learned in the early portions of the course are applicable to the problems examined in the later portions.

   Both exams will consist of 50 multiple-choice questions (2 pts/question). They will be delivered through Canvas. They will open on their respective Friday and close at 11:59 pm, Sunday. Each exam can only be taken once and will be time-limited to 60 minutes (continuous, no stop-restart option). **Just like in a classroom, once you start the exam, you must finish it in its entirety within the next 60 minutes**. Make sure you start your exam before 10:58 pm on Sunday, as the exam window-of-opportunity will close at 11:59 pm.

   - Progress Assessment Test #1: Available **Friday, May 2nd (11:30 am)** – Closes **Sunday, May 4th (11:59 pm)**

- Progress Assessment Test #2: Available **Friday, June 6th (11:30 am)** – Closes **Sunday, June 8th (11:59 pm)**

The use of AI tools to complete your coursework is prohibited unless explicitly authorized. The Use of generative AI will be considered academic misconduct and subject to investigation.

Group Work:

1. **Flipped discussion classes**: Your discussion groups are designed for skill-building, as well as an opportunity to discuss and reach a group consensus on synthesis questions posed by the instructor throughout the quarter. The expectation is that you will be able to complete the question/assignment in the 50 minutes on discussion class days and base your reflection assignment for that week on the work.
2. **Facilitation skill development**: Each group member will be expected to facilitate group discussion for at least two weeks and take notes on two other weeks. For the weeks you are responsible, you must come prepared to engage fully in your role. We will discuss facilitation tools and notetaker expectations during our first discussion class session.

There will be NO in person class scheduled during the final's scheduled time slot for this class on Monday, June 6th.

Course Materials

1. **Required Readings:** The materials in the below textbooks will be supplemented by a series of readings. These readings are designed to enrich your learning experience by providing increased depth in a topic or by presenting an example that illustrates the principles covered in the text and lectures. All readings are available as PDF files that can be viewed on Canvas or downloaded to your computer by following the links provided on the class's Canvas website for each lesson module.

2. **Textbooks used in this class are *optional* to purchase – all materials needed will be provided on Canvas:**
   2.1. Nadakavukaren, Anne, Our Global Environment: A Health Perspective, 8th Ed., Waveland Press, Prospect Heights, Illinois, 2020. (Relevant sections will be posted on Canvas, while the full text is also available via Amazon as an e-book for a variety of different digital devices here.)
   2.2. Frumkin, H. (2016). Environmental health: From global to local (Third ed.). San Francisco, CA: Jossey-Bass, A Wiley Brand. [This text is found online through UW libraries. It is an E-book and is found FREE here OR look it up via UW online libraries system.]

3. **Supplementary (Optional) Readings:** The course modules also contain journal articles, reports, and other materials that expand upon or illuminate specific aspects of

the topics covered in this course. Most of these are also available online. In some cases, the suggested readings may be links to government or organizational websites. These links provide you with additional information on the topic of the lesson and an opportunity to explore the type and scope of information available from these various sources.

There are several journals related to environmental health currently available. Some of the best of them (or at least the ones most directly related to this course) include:

- *Environmental Health Perspectives*
- *Journal of Environmental Health*
- *American Journal of Public Health*
- *Emerging Infectious Disease Journal*
- *Environment*
- *EPA Journal*

Course Policies

1. **Illness-related expectations**:

   If you feel ill or exhibit respiratory or other symptoms, you should not come to class. Seek medical attention, if necessary. You do NOT need to notify us of an absence. UW Environmental Health & Safety recommends that you wear a well-fitting mask while you are symptomatic.

   Additional recommendations include getting your annual flu shot and getting boosted with the updated COVID vaccines (available at clinics and pharmacies, as well as through UW Medicine 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 post a CANVAS announcement with a Zoom link for remote instruction or a plan for making up the class.

   The most recent University policies can be found here
   https://www.washington.edu/coronavirus/category/campus-operations/

2. **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). 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.

Notice: "The University has a license agreement with SimCheck, an educational tool that helps prevent or identify plagiarism from Internet resources. Your instructor may use the service in this class by requiring that assignments are submitted electronically to be checked by SimCheck. The SimCheck Report 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." UW ITConnect

3. **Access and Accommodation:** 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.
4. **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. Accommodations must be requested within the first two weeks of this course using the Religious Accommodations Request form.
5. **Anti-Racism Commitment:** The faculty of the School of Public Health commit to facilitating student learning that occurs in an inclusive, anti-racist environment. We view our courses and co-curricular activities as opportunities to demonstrate program-wide efforts to challenge systemic racism within a caring community. We also seek alliances with other individuals and organizations involved in combating all forms of social oppression. We acknowledge that programmatic transformation requires sustained effort and periodic self-reflection, thus, our movement forward on a continuum of anti-racism is a work in progress that requires feedback from all community members. We invite all members of our community to identify opportunities to improve our performance in this regard, including classroom interactions, faculty facilitation, and the institutional environment. You may offer feedback through your course instructor, faculty advisor, the program director, and/or anonymous comments in course evaluation forms.

6. **Written Assignments:** All written assignments must be submitted electronically through Canvas. Your written assignments will be graded on the substance of the content and on the effectiveness of its organization and presentation.
7. **Tests:** There will be no make-up examinations unless approved by the instructor in advance. If a test is missed because of an unexcused absence, it will not be rescheduled.
8. **Grading:** Your final grade will be calculated from the two course exams (100 pts each), group discussion reflections (~50 pts), individual assignments and any extra credit points (~150+pts). A 4.0 scale will be calculated using the following conversion:

% = GPA	% = GPA	% = GPA	% = GPA
≥ 97.0 = 4.0	≥ 86.9 = 3.1	≥ 76.8 = 2.2	≥ 66.7 = 1.3
≥ 95.9 = 3.9	≥ 85.8 = 3.0	≥ 75.7 = 2.1	≥ 65.6 = 1.2
≥ 94.8 = 3.8	≥ 84.7 = 2.9	≥ 74.6 = 2.0	≥ 64.5 = 1.1
≥ 93.6 = 3.7	≥ 83.5 = 2.8	≥ 73.5 = 1.9	≥ 63.4 = 1.0
≥ 92.5 = 3.6	≥ 82.4 = 2.7	≥ 72.3 = 1.8	≥ 62.2 = 0.9
≥ 91.4 = 3.5	≥ 81.3 = 2.6	≥ 71.2 = 1.7	≥ 61.1 = 0.8
≥ 90.3 = 3.4	≥ 80.2 = 2.5	≥ 70.1 = 1.6	≥ 60.0 = 0.7
≥ 89.2 = 3.3	≥ 79.1 = 2.4	≥ 69.0 = 1.5	
≥ 88.0 = 3.2	≥ 77.9 = 2.3	≥ 67.8 = 1.4	

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Tentative Course Schedule

(**NOTE:** This schedule is still under construction and the list of lectures and assignments is subject to change.)

IMPORTANT: The reading/viewing preparation for each lecture/discussion session are listed on the course Canvas website in the module for each week.

No	Day	Date	Lesson Topic	Lecturer
Week 1				
Our class starts off with a case study module about the **Flint, MI water crisis**				
1	Mon	Mar 31	Course Introduction	Dr. Tania Busch Isaksen, DEOHS
2	Wed	Apr 2	**Recorded pre-lecture:** Population Dynamics & Public Health **Discussion session:** Pop. Dynamics IHME exercise	Dr. Tania Busch Isaksen, DEOHS Dr. Tania Busch Isaksen, DEOHS
3	Fri	Apr 4	Risk Assessment Framework / Flint Timeline	Dr. Tania Busch Isaksen, DEOHS
Week 2				
4	Mon	Apr 7	Toxicology	Dr. Tania Busch Isaksen, DEOHS
5	Wed	Apr 9	Epidemiology **Interactive/Group work session**	Dr. Tania Busch Isaksen, DEOHS
6	Fri	Apr 11	Exposure Assessment & Control	Dr. Tania Busch Isaksen, DEOHS
Week 3				
7	Mon	Apr 14	Green Chemistry & Sustainability	Nancy Simcox, DEOHS & CE
8	Wed	Apr 16	**Recorded pre-lecture:** Housing Precariousness & Health **Discussion session:** Flint, MI Epi/Exposure assessment discussion	Dr. Jamie Vickery, NOAA Dr. Tania Busch Isaksen, DEOHS
9	Fri	Apr 18	Environmental Justice & Community Action	Resham Patel, DEOHS
Week 4				
10	Mon	Apr 21	Water Resources	Dr. Tania Busch Isaksen, DEOHS
11	Wed	Apr 23	Drinking Water Quality	Dr. Tania Busch Isaksen, DEOHS
12	Fri	Apr 25	**Recorded pre-lecture:** Flint, MI Wrap Up **Discussion session:** Synthesis Assignment prep	Dr. Tania Busch Isaksen, DEOHS
Week 5 - During week 5 we move into a new short module: **Food Safety Rocks!**				

No	Day	Date	Lesson Topic	Lecturer
13	Mon	**Apr 28**	Human Disease Transmission, prevention & Control	Tania Busch Isaksen, DEOHS
14	Wed	**Apr 30**	**Recorded pre-lecture:** Food Protection & Policy video **Discussion session:** Food Safety Rocks/Primary-Tertiary prevention activity	Tania Busch Isaksen, DEOHS
15	Fri	May 2	Foodborne Illness/Outbreak investigation	Emily Hovis, DEOHS
Week 6 - During week 6 we move into a new module: **Climate Change and Health**				
16	Mon	May 5	Climate Change Basics	Dr. Tania Busch Isaksen, DEOHS
17	Wed	May 7	Climate Change Health Risks	Dr. Tania Busch Isaksen, DEOHS
18	Fri	May 9	**Recorded Lecture:** Dig Deeper **Discussion Session:** Climate Change Mitigation	Dr. Tania Busch Isaksen, DEOHS
Week 7				
19	Mon	May 12	Air Pollution & Health	Mariana Cortes Espinosa, DEOHS
20	Wed	May 14	**Recorded Lecture:** Climate Change Communication: Myths & Denial **Discussion Session:** Climate Change Adaptation + preview/prep for synthesis assignment	Dr. John Cook, Skeptical Science Dr. Tania Busch Isaksen, DEOHS
21	Fri	May 16	Climate Change and Nutrition	Dr. Yona Sipos, DEOHS
Week 8 During week 8 we move into a new module: **Duwamish River Superfund Site**				
22	Mon	May 19	Occupational Health & Safety	Dr. Marissa Baker, DEOHS
23	Wed	May 21	Zoonotic/ Vector-borne Disease Transmission & Control	Dr. Tania Busch Isaksen, DEOHS
24	Fri	May 23	**Recorded pre-lecture:** Frontline **Discussion Session:** Historical Overview / Legacy Waste + prep for synthesis assignment	Dr. Tania Busch Isaksen, DEOHS
Week 9				
	Mon	May 26	NO Class – Memorial Day	
25	Wed	May 28	Solid/Hazardous Waste Disposal	Dr. Tania Busch Isaksen, DEOHS
26	Fri	May 30	Alternatives to Landfilling **Discussion/class session:** Solid waste	Dr. Tania Busch Isaksen, DEOHS
Week 10				
27	Mon	June 2	Radiation Health & Safety	Phil Cambell, UW EH&S

No	Day	Date	Lesson Topic	Lecturer
28	Wed	June 4	Wastewater Treatment – Centralized	Hannah McKinley, DEOHS
29	Fri	June 6	**Posted pre-lecture:** Wastewater Treatment – Decentralized **Discussion/class session:** The Perfect Storm / Course Wrap Up	Mariana Cortes Espinosa & Hannah McKinley, DEOHS
Week 11				
			No in-class Final	

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." This course exposes students to the **bolded topics** 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 (Cover)
- 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 (Cover)
- Human Health: Address the underlying science of human health and disease including opportunities for promoting and protecting health across the life course (Cover)

- 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 (Introduce)
- 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 (Cover)
- 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 (Introduce)
- 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 (Introduce)

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)