



ENVIRONMENTAL & OCCUPATIONAL HEALTH SCIENCES
SCHOOL OF PUBLIC HEALTH · UNIVERSITY of WASHINGTON



ENVH 311: Introduction to Environmental Public Health Fall Quarter 2022 Course Syllabus

Course Instructor

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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. This course is also intended to be a survey course, meaning that 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

Lectures: posted on Canvas

Discussion sessions: Mondays, Wednesdays, OR Fridays, 10:30–11:20am; Magnuson Health Sciences Center, T-435

Make-up discussion sessions: Fridays, 10:30–11:20am, online on Zoom

Fall quarter will be delivered using a **flipped classroom model**, where **lectures will be posted online**, and **students will meet in person for discussion and group work ONLY 1x/week – either on Monday, Wednesday, or Friday at 10:30 - 11:20 a.m. in T-435.** Students will sign up for the discussion days they want to attend for the entire quarter on the Canvas website. **In-person discussion sessions begin the week of Oct 3rd.** So, the first time you will be in person in T-435 will be Mon. Oct. 3rd, Wed. Oct. 5th OR Fri Oct. 7th.

Alternatively, for those unable to meet in person (e.g. you are sick during your normally scheduled discussion day), there will be a remote discussion section offered on Fridays at 10:30-11:20. The first time the online zoom opportunity will be Fri Oct. 7th. See the Canvas site for the zoom link.

NOTE: There are 2 UW-observed holidays that fall on a Friday this Fall quarter. We will not meet those Fridays (Nov. 11th & 25th). Instead, Friday groups need to pick between Monday or Wednesday of that week to attend instead. For example: Veterans Day is on Nov. 11th so groups meeting on Fridays would choose either Monday Nov. 5th or Wednesday Nov 7th to attend. We will also shift our drop-in remote session for people who are ill during these weeks, from Friday to Wednesday (Nov. 7th and Nov. 23rd).

If you are normally scheduled for an in-person discussion group on either M, W, or F and you feel ill that day, please drop into our Friday zoom discussion session instead – Do NOT come to class ill.

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. We honor the people on whose land we are guests.

Washington state is home to 29 federally recognized and five unrecognized tribes. I encourage you to visit the [Native Land](#) website and look up which tribe(s) or band(s)' land you currently reside on.

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

This course will be delivered using a **flipped classroom model**. All lectures are recorded and available to watch on your own schedule. Students will pick **ONE** of the three regularly scheduled days (M/W/F) as their **in-person** group discussion day. Starting the second week of the quarter, students will be expected to attend their chosen discussion day each week (10:30-11:20). **Students are expected to come to the discussion, each week, having read and watched materials from the previous week.** For students that are unable to attend in person due to illness, a Friday zoom-based discussion session is available; you will be placed randomly into a group. *You do not need permission to miss an in-person discussion session.* If you are sick, please use the remote discussion opportunity on Fridays.

1. **Individual Assignments:**
 - a. For most class sessions, the required readings come with a quiz. Most quizzes are ~2-4 questions, 1 pt/question (~60 pts total);
 - b. Students are expected to come to their weekly discussion session having watched the previous week's lectures, reviewed reading materials, and

prepared for the day of discussion. Each discussion summary is worth 5 points (~50 points total);

- c. Throughout the quarter, several self-assessment and End-of-Case 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 Panopto lectures and weekly discussion sessions (~100 pts total).

2. Group Projects:

- a. The previously designed/scheduled group project programming has been discontinued, brought to you by COVID19;
 - b. Instead, 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 mins. scheduled for your discussion group.
 - c. Each group member will be expected to facilitate group discussion at least one week and take notes on another week. For the weeks you are responsible, you must come prepared to engage fully in your role. We will discuss facilitation tools and notetaker expectations on the first day your group meets. (~10 pts)
3. **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, Nov. 4th (11:30 am)** – Closes **Sunday, Nov. 6th (11:59 pm)**
- Progress Assessment Test #2: Available **Friday, Dec. 9th (11:30 am)** – Closes **Sunday, Dec. 11th (11:59 pm)**

There will be NO final scheduled during the final's scheduled timeslot for this class on Monday, Dec. 12th.

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' Canvas website for each lesson module.

- 2) **Textbooks used in this class are *optional* to purchase – all materials needed will be provided on Canvas:**
 - a) Nadakavukaren, Anne, *Our Global Environment: A Health Perspective*, 7th Ed., Waveland Press, Prospect Heights, Illinois, 2011. (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](#).)
 - b) 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 list several 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 private 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 a number of journals related to environmental health currently available. People wishing to stay abreast of this fast-changing field should at least scan the journals most related to their interests every month. 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. **COVID-related expectations:** All UW students are expected to follow [state](#), [local](#), and [UW COVID-19 policies and recommendations](#). Please be extra conscientious about masking during the first few weeks of the quarter, because we will have a lot of members of the community traveling and can reasonably expect to see a surge in COVID cases. If you feel ill or exhibit possible COVID symptoms, you should not

come to class. If you need to temporarily quarantine or isolate per CDC guidance and/or [campus policy](#), you are responsible for notifying your instructors as soon as possible by email. **If you receive a positive COVID-19 test result, you must report to campus Environmental Health & Safety (EH&S) by emailing covidehc@uw.edu or calling 206-616-3344.**

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, 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.

Notice: The University has a license agreement with TurnItIn, 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 TurnItIn. The TurnItIn 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.

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 assignments for each lecture are listed on the course Canvas website in the module for each day. Lectures will be recorded and posted, at the latest, by 10:30 am of the date listed below. **Be sure that you have read the *previous week's* readings and watched the posted Panopto lectures before attending your weekly group meeting!!**

No	Day	Date	Lesson Topic	Lecturer
1	Wed	9/28	Course Introduction	Tania Busch Isaksen, DEOHS
2	Fri	9/30	Population Dynamics & Public Health	Tania Busch Isaksen, DEOHS
Flint, MI				
3	Mon	10/3	Environmental Public Health/Risk Assessment Framework	Tania Busch Isaksen, DEOHS
4	Wed	10/5	Toxicology	Tania Busch Isaksen, DEOHS
5	Fri	10/7	Epidemiology	Tania Busch Isaksen, DEOHS
6	Mon	10/10	Exposure Assessment & Control	Tania Busch Isaksen, DEOHS
7	Wed	10/12	Water Resources	TBD, DEOHS
8	Fri	10/14	Drinking Water Quality	Sydney Gerig, DEOHS
9	Mon	10/17	Flint, MI wrap up	Tania Busch Isaksen, DEOHS
Norovirus & Food Safety				
10	Wed	10/19	Human Disease Transmission, prevention & Control	Tania Busch Isaksen, DEOHS
11	Fri	10/21	Foodborne Illness/Outbreak investigation	Tania Busch Isaksen, DEOHS
12	Mon	10/24	Food Protection & Policy	Tania Busch Isaksen, DEOHS
Climate Change and Health				
13	Wed	10/26	Climate Change Basics	Tania Busch Isaksen, DEOHS
14	Fri	10/28	Climate Change Health Risks	Tania Busch Isaksen, DEOHS

No	Day	Date	Lesson Topic	Lecturer
15	Mon	10/31	Air Pollution & Health	Mae Belle Coker, DEOHS
16	Wed	11/2	Wildfire Smoke & Public Health Practice	Tania Busch Isaksen, DEOHS
17	Fri	11/4	Climate Change and Nutrition	Yona Sipos, DEOHS
18	Mon	11/7	Zoonotic/ Vector-borne Disease Transmission & Control	Sydney Gerig, DEOHS
19	Wed	11/9	Climate Change Communication: Myths & Denial	John Cook, Skeptical Science
	Fri	11/11	No Class - Veterans Day Extra Credit Available today	Student Directed!
			Duwamish River Clean-up	
20	Mon	11/14	Historical Overview / Legacy Waste	Tania Busch Isaksen, DEOHS
21	Wed	11/16	Solid Waste Disposal	Tania Busch Isaksen, DEOHS
22	Fri	11/18	Alternatives to Landfilling	Tania Busch Isaksen, DEOHS
23	Mon	11/21	Sustainability & Green Chemistry	Nancy Simcox, DEOHS
24	Wed	11/23	Wastewater Treatment – Centralized	Tania Busch Isaksen, DEOHS
	Fri	11/25	No Class – Thanksgiving Native American Heritage Day	
25	Mon	11/28	Wastewater Treatment – Decentralized	Tania Busch Isaksen, DEOHS
26	Wed	11/30	Environmental Justice & Community Action	Esther Min, DEOHS & Front and Centered
27	Fri	12/2	Housing Precariousness & Health	Jamie Vickery, UW CEER
			Occupational Health-focused	
28	Mon	12/5	Occ. Health & Safety Overview	Marissa Baker, DEOHS
29	Wed	12/7	Radiation Health & Safety	Kevin Makinson, UW EH&S
30	Fri	12/9	Course Wrap Up	Tania Busch Isaksen, DEOHS

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** 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)