

# Course Syllabus

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## ENVH 501 Foundations of Environmental and Occupational Health Autumn Quarter 2022


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**Days/Times and Location:** Tuesday & Thursdays, 3:30-5:20 PM SOCC 303 (South Campus Center) and (as scheduled) by zoom <https://washington.zoom.us/j/95428356273>   
(<https://washington.zoom.us/j/95428356273>)

## Course Description

This course covers the foundational environmental and occupational public health knowledge domains, provides a comprehensive overview of an environmental and occupational public health framework, the risk assessment and management paradigm, and One Health and Planetary Health systems models for assessing and managing environmental health risks on a local and global scale.

## Learning Objectives

At the end of this course, the student should be able to:

1. Explain public health history, philosophy, and values with a focus on environmental and occupational public health at local and "planetary" scale.
2. Identify core functions and the 10 essential services of environmental public health.
3. List major causes and trends of morbidity and mortality in the US and globally with a focus on the contribution of environmental factors.
4. Discuss the science of primary, secondary and tertiary prevention in population health, including health promotion, screening, and the hierarchy of controls approach.
5. Explain the critical importance of evidence in advancing environmental and occupational public health knowledge.
6. Explain the effects of environmental factors on individual and population health, including biological, physical, and social factors.
7. Explain the biological and genetic factors that affect population health and susceptibility to adverse health outcomes from environmental exposures.
8. Explain behavioral and psychological factors that affect population health and susceptibility to adverse health outcomes from environmental exposures.
9. Explain how social, political, and economic determinants of health influence vulnerability to environmental exposures, population health, and the role that environmental justice plays in understanding and addressing those vulnerabilities.
10. Explain the effect of globalization and planetary level environmental change on the global burden of disease.
11. Explain an ecological perspective on the connections among human health, animal health, and ecosystem health (One Health) using the ECOHAB acronym.
12. Apply the major components of the environmental and occupational health framework (problem formulation, hazard identification, dose-response assessment, exposure assessment, risk characterization, risk communication, risk management, evaluation, stakeholder engagement, and research) in order to address environmental or occupational public health problems experienced in the community or work environment.
13. Explain the process of problem formulation in addressing environmental public health problems.
14. Explain the process of hazard identification as part of risk assessment.
15. Identify the major chemical, physical, and biological agents of concern in environmental public health, and health effects associated with these agents.


16. Describe the processes of dose response assessment, exposure assessment, and risk characterization as part of risk assessment for environmental agents.
17. Discuss the processes of risk communication, risk management, and evaluation as part of the environmental and occupational health framework.
18. Discuss the importance of stakeholder engagement in addressing environmental public health problems.
19. Employ system mapping techniques and a One Health approach to describe a complex system ("wicked problem") relevant to environmental or occupational health.
20. Explain key environmental health aspects of agricultural, manufacturing, energy, and built environment and transportation systems.
21. Propose an effective policy to address a "wicked" environmental or occupational health problem and effectively communicate it in a policy brief format.
22. Develop a personal vision and mission statement related to your career in environmental and occupational health.

## Accreditation Requirements & Competencies Met by This Course

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

- Explain public health history, philosophy and values (D17.1)
- Identify the core functions of public health and the 10 Essential Services (D17.2)
- List major causes and trends of morbidity and mortality in the US or other community relevant to the school or program (D17.4)
- Discuss the science of primary, secondary and tertiary prevention in population health, including health promotion, screening, etc. (D17.5)
- Explain the critical importance of evidence in advancing public health knowledge (D17.6)
- Explain effects of environmental factors on a population's health (D17.7)
- Explain behavioral and psychological factors that affect a population's health (D17.9)
- Explain the social, political and economic determinants of health and how they contribute to population health and health inequities (D17.10)
- Explain how globalization affects global burdens of disease (D17.11)
- Explain an ecological perspective on the connections among human health, animal health and ecosystem health (eg, One Health) (D17.12)
- Apply the major components of the environmental and occupational health framework (problem formulation, hazard identification, dose-response assessment, exposure assessment, risk characterization, risk communication, risk management, evaluation, stakeholder engagement, and research) in order to address environmental public health problems experienced in the community or work environment (MS-EHS department-level competency)
- Assess the magnitude, determinants, and impacts of a community-level environmental health issue (MPH-EHS department-level competency)
- Develop strategies to communicate about environmental health policy issues for different audiences or sectors, using different media (MPH-EHS department-level competency)

## Classroom Climate

Diverse backgrounds, embodiments, and experiences are essential to the critical thinking endeavor at the heart of university education. Therefore, I expect you to follow the UW Student Conduct Code in your interactions with your colleagues and me in this course by respecting the many social and cultural differences among us, which may include, but are not limited to: age, cultural background, disability, ethnicity, family status, gender identity and presentation, citizenship and immigration status, national origin, race, religious and political beliefs, sex, sexual orientation, socioeconomic status, and veteran status. I will acknowledge from the beginning that all of us, including your instructor, have a lot to learn about combatting racism, sexism, classism, and other forms of discrimination and bias, and that this learning process will continue throughout our careers. Please talk with me right away if you experience disrespect in this class, and I will work to address it in an educational manner. UW students can also report incidents of bias or violations of UW policies for non-discrimination using the Bias Reporting Tool available at: <http://www.washington.edu/bias/>  [\(http://www.washington.edu/bias/\)](http://www.washington.edu/bias/).

## Course Organization

**The course is organized in weekly modules on the Modules Page of the Canvas site.** After an introductory module, and modules explaining the Environmental and Occupational Health, Planetary Health, and One Health approach to problems, ecosystems and demographic factors, we will examine a number of major environmental “systems”, including food systems, energy systems, etc. For each system, we will examine representative biological, physical, chemical, and social hazards and human health effects (as well as effects on the health of animal populations and the ecosystem). We will also discuss common mechanisms of exposure, risk and health impact; population vulnerability, including occupational exposures and occupational health vs. community exposures, social determinants of health, inequity; and strategies to control exposure and promote health--favorable change.


Students need to complete assigned preparatory reading, viewing and short tasks before each class session.

**Class sessions:** a combination of instructor-led, active lecture format to reinforce the preparatory material and “flipped classroom” approaches requiring students to have already reviewed materials on the Canvas site, including at times prerecorded lectures.

Students in general must come to class prepared to answer discussion questions about the assigned material, and also be able to define any of the terms on vocabulary list for that week's module.

**Case Studies:** there will be several case studies presented, including Yakima and Minamata and Alcoa. Background materials about the cases will be provided.

**Concept Mapping:** for attacking “wicked problems” and complex systems, we will use the technique of concept mapping to explore the relevant systems.

For creating concept maps, I recommend trying the [draw.io software program](https://app.diagrams.net/)  (<https://app.diagrams.net/>) which is available for free as an online version.

Using this program will allow you to create concept maps about particular systems. There will be a number of concept map assignments. For each assignment, please save your concept map as a pdf file and upload it to the Canvas site. During some class discussions, we will review these concept maps to further our understanding both of the system being discussed as well as the systems thinking approaches that are appropriate. You will be also doing concept mapping in your groups. The final policy brief will also include creation of a concept map/diagram by your group to help the group explain the problem and policy recommendation.

## Required Reading and Viewing

Students are required to complete preparatory reading and viewing assignments before each class session. Students need to come to class prepared to discuss in depth the questions on the weekly question list, and be able to define the vocabulary for the module.


A detailed list of assigned reading and viewing materials for each module will be maintained on the Canvas website.


Typical assigned materials include:

- Chapters from the Planetary Health textbook (see below)
- Short video lectures by the instructor or other faculty speakers (approximately 20 minutes) covering learning objectives, key concepts and definitions for the weekly module.
- Other required background reading that may include textbook chapters, journal articles, and policy documents.
- List of questions and vocabulary (based on the background reading) relevant to each module for discussion in the class sessions (There will be a master list of vocabulary on the Canvas site).
- Additional background materials: not required but available if you are interested in further exploration of particular topics

### Textbook:

Planetary Health: Safeguarding Human Health and the Environment in the Anthropocene, by Andrew Haines and Howard Frumkin (Cambridge University Press 2021)

It is available through UW Health Sciences Library [here](https://www.cambridge.org/offcampus.lib.washington.edu/core/books/planetary-health/33E5DF80318C63C41606E106FF85D99D)  (<https://www.cambridge.org/offcampus.lib.washington.edu/core/books/planetary-health/33E5DF80318C63C41606E106FF85D99D>).

Also, for students who wish to purchase the textbook it is available through the [publisher](https://www.cambridge.org/core/books/planetary-health/33E5DF80318C63C41606E106FF85D99D)  (<https://www.cambridge.org/core/books/planetary-health/33E5DF80318C63C41606E106FF85D99D>) (links to an external site) or through Amazon, etc.

***This text should be acquired by the student before the first class.***

# Assignments

## Daily Assignments:

- **Reading or viewing background materials and lectures, and list of questions and vocabulary for the module:** To be completed before the first module class session, as described above. This preparation is essential for success in the course.

**Concept Maps:** There will be several concept mapping assignments, two will be graded. For the graded concept map assignments, students will post a pdf copy on Canvas before class when it is due. Concept mapping is a “systems thinking” exercise to portray ideas about connections between environmental and social causative factors, other influential factors or stakeholder-agents, and impacts on health and well-being. The instructor will provide guidance on concept mapping, including an in class demonstration about how to create a concept map. Students are encouraged to use free software to create their maps, although with permission of the instructor they may use other methods. The first map will be of the Yakima nitrate problem. The second concept map will be related to the group "wicked problem" that is being addressed. For each graded concept map assignment, we will provide comments through the Canvas site.

**Weekly Vocabulary Quizzes:** There will be seven short in-class quizzes that will cover the vocabulary and hazard terms in the different modules


**Exams:** There will be an in-class midterm and final exam. These will be based heavily on the learning objectives outlined in each lecture as well as the terms and definitions presented each week in the recorded lecture.

**Final Project (Policy Brief supported by a compelling concept map):** Students will work in groups over the course of the term to choose and address a "wicked problem" related to an environmental or occupational health topic. This group project will include completing a concept map to help illustrate the identified problem, relevant stakeholders, and proposed solutions (leverage points). Groups will produce a 4-5-page executive summary level policy brief document, outlining the problem being addressed and presenting some policy priorities for addressing the problem as well as the economic case. In addition, each student will write a 7-10 page individual paper, with references, on an aspect of the problem that their group is addressing.

*What is a policy brief?*

“A policy brief is a concise summary of a particular issue, the policy options to deal with it, and some recommendations on the best option. It is aimed at government policymakers and others who are interested in formulating or influencing policy. Policy briefs can take different formats. A typical format...contain[s] perhaps 700 words. It has an attractive design, and may have one or more photograph[s]” [source: FAO Food Security Communications Toolkit]

The policy brief for this assignment should be approximately 1000 words, not counting references. Since this is an academic exercise, the policy brief should include line--item reference notations linked to a separate reference list.

Each group will present an oral presentation about the problem, including the concept map diagram they have created, and the policy/activity that they are recommending during the last sessions of the class. A written version of the policy brief document as well as the concept map will be due on the same day as the final exam. The write-up should conform to principles of “plain language” as outlined by NIH (see <https://www.nih.gov/institutes-nih/nih-office-director/office-communications-public-liaison/clear-communication/plain-language>  (<https://www.nih.gov/institutes-nih/nih-office-director/office-communications-public-liaison/clear-communication/plain-language>)).

**Personal Values, Vision/Mission Statement and Goals:** Graduate study is a time of intense and rapid professional and personal individual growth. Having a clear sense of your personal values and goals regarding your study and training in environmental and occupational health will help you be a proactive and effective learner and professional. NIH, NSF, and other agencies that provide funding for graduate training are increasingly requiring students and their mentors to complete “individual development plans” that ideally are based on the student’s personal values and sense of mission. In this course, students will work on drafting their personal mission statement related to environmental and occupational health, as well as a set of goals for their graduate study based on their mission statement. The mission statement can be based on the student’s personal statement but can also be completely different! The key idea is to encourage student self-reflection and assist students with goal-setting for their education and training and beyond.

The process of creating a mission statement will begin on the first day of class, and students will do a short writing exercise and use it to introduce themselves to other students. Students are also encouraged to discuss this assignment with potential or actual mentors or advisors. A draft of the mission statement and goals will be due halfway through the course, and a revised statement due at the end of the course. The finished assignment for this class will include:

- 2-3 short statements about your career and personal vision
- 4-5 short statements describing your career and personal mission
- A set of goals (with timelines) for your graduate study at DEOHS
- At least 3 academic goals
- At least 3 career goals
- At least 3 personal goals

A rubric for the mission statement and goals will be on the Canvas site.

## Participation

Preparation before class, participation in class discussion, and engagement in the group work and the case studies are essential for successful instruction and learning in this course. While you will not be

explicitly graded on attendance, participation in class discussions is an important part of your learning. At the same time, we recognize that the COVID pandemic and other events such as illness can disrupt plans to attend classes- and ask students to notify the instructor if there is a reason for missing classes on a regular basis.

## Communication

One goal of this course is to provide experience with a variety of communication formats, and to cultivate skills in “plain language” communication. See NIH guide to plain language

<https://www.nih.gov/institutes-nih/nih-office-director/office-communications-public-liaison/clear-communication/plain-language/training>.  (<https://www.nih.gov/institutes-nih/nih-office-director/office-communications-public-liaison/clear-communication/plain-language/training>)

Students usually have a wide range of comfort levels regarding speaking up in class- but this course really encourages students to actively participate in group discussions as well as class-wide discussions.

Use of graphics for communication is also important and will be emphasized in the concept map and policy brief assignments.

## Use of Computers or Other Electronic Devices in Class


During the in-class concept mapping sessions, computers may be used for specific activities such as displaying work on a concept map. Please do not check email, instagram, news, etc. during class time.

## Grading

Course grades are determined on the basis of the following weighting:



Personal mission statement	5%
Concept map ( 2X7.5%)	15%
Vocabulary/Hazard Quizzes: 7X5%	35%
Midterm Exam	15%
Final Exam	20%
Final Project paper	10%
<b>TOTAL</b>	<b>100%</b>

## COVID-19 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 complete their [vaccine attestation](#)  (<https://www.washington.edu/coronavirus/vaccination-requirement/>) before arriving on campus and to follow the campus-wide face-covering policy at all times. You are expected to follow state, local, and UW COVID-19 policies and recommendations. 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](#) , (<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 must report to campus Environmental Health & Safety (EH&S) by emailing [covidehc@uw.edu](mailto:covidehc@uw.edu) (<mailto:covidehc@uw.edu>) or calling 206-626-3344.**

**No food or drinks are allowed in the classroom.**

**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!

## 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](mailto:uwdrs@uw.edu) (<mailto:uwdrs@uw.edu>) or [disability.uw.edu](http://depts.washington.edu/uwdrs/)  (<http://depts.washington.edu/uwdrs/>). 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

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

## 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](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.

## Safety

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

## Session-by-Session Schedule

### Session-by-Session Schedule

Session #	Activities and Topics Covered	Learning Objectives	Assignments/Assessments Due
<b>Module 1: Introduction</b>			

1 (9/29/22)	<p><u>Lecture</u>: Intro to Course</p> <p><u>Lecture</u>: Introductions and values, personal mission statement and goals</p> <p><u>Exercise</u>: share and report</p> <p><u>Exercise</u>: personal values, vision, mission draft</p>	21	<p><u>Readings</u>:</p> <p><u>Textbook</u>: Chapter 1</p> <p><u>Document</u>: Basic principles of mission statements</p> <p><u>Document</u>: Example of Mission Statement</p> <p><u>Document</u>: Example of IDP</p> <p><u>Web resource</u>: How to build a mission statement</p> <p><u>Web resource</u>: Online mission statement builder</p>
<b>Module 2: EOH Approach</b>			
2 (10/4/22) (PMR OUT) Gardner guest lecture	<p><u>Lecture</u>: EOH Approach: Risk paradigm, One Health (Yost)</p> <p><u>Lecture</u>: Gardner: Environmental Justice</p> <p><u>Exercise</u>: Intro to diagram/drawing online program (Janzing)</p>	1, 2, 4, 12-17	<p><u>Readings</u>:</p> <p><u>Textbook</u>: Chapters 2 and 4</p> <p><u>Document</u>: Schell paper</p> <p><u>Pages</u>: Quiz 1 vocabulary list</p> <p><u>Online</u>: Diagram program</p>
3 (10/6/22)	<p><u>Lecture</u>: History of Environmental Health, The core functions of environmental public health,</p> <p><u>Lecture</u>: Systems thinking and concept mapping</p> <p><u>Exercise</u>: Concept mapping- Yakima ground water case example (Slides: Yakima Case)</p> <p><u>Hazards</u>: Nitrates, Harmful algae blooms, Ecoli/other enterics, parasites, Stress</p>	8, 9, 14, 18	<p><u>Readings</u>:</p> <p><u>Document</u>: History of Public health</p> <p><u>Document</u>: Yakima Valley groundwater (page 1-17)</p> <p><u>Document</u>: Intro to systems thinking</p>

	GROUP WORK: Session 1: wicked problems		<u>Document</u> : interrelationship diagrams  additional materials
<b>Module 3: Manufacturing Systems and Environmental and Occupational Health</b>			
4 (10/11/22)	<p><u>In class quiz- Vocabulary Quiz 1</u></p> <p><u>Lecture</u>: Manufacturing systems: History of manufacturing/History of occupational health, OSHA/NIOSH, etc. occupational and environmental hazards in manufacturing</p> <p><u>Lecture</u>: Minamata case study.</p> <p><u>Discussion</u>: Minamata case</p> <p>Guest: Julia Cui PhD</p>	1, 14, 19	<p><u>Quiz 1</u>: EOH Approach and Ecosystems Vocabulary and concepts</p> <p><u>Readings</u>:</p> <p><u>Textbook</u>: Haines and Frumkin Chapter 3: pages 77-97 only</p> <p><u>Document</u>: Minamata Background</p> <p><u>Watch</u>: Minamata video</p> <p><u>Pages</u>: <u>Quiz 2 vocabulary list</u></p>
5 (10/13/22)	<p><u>Lecture</u>: Prevention in Manufacturing</p> <p><u>Hazards</u>: Beryllium, chromium, nickel, manganese, cobalt, PAHs, noise, ergonomic MSDs, plastics, mercury, EDCs.</p> <p><u>Group Discussion</u>: aluminum manufacturing and health</p> <p>GROUP WORK: Session 2- Theory of Change</p>	10, 11	<p><u>Due</u>: Concept maps/ charts of Yakima ground water</p> <p><u>Reading</u>:</p> <p>Hazards in manufacturing (slides)</p> <p>Alcoa Story (slides)</p> <p><u>Document</u>: IARC Aluminum</p> <p><u>Document</u>: Doubleday paper</p>

Document: Industrial ecology

## Module 4: Built Environment and Transportation Systems: Environmental and Occupational Health Aspects

<p>6 (10/18/22)</p>	<p><u>In class quiz- Vocabulary Quiz 2</u></p> <p><u>Dannenber Lecture- built environment</u></p> <p><u>Discussion</u>: Built environment</p>	<p>1, 14, 19</p>	<p><u>Quiz 2</u>: Manufacturing Systems Vocabulary and concepts</p> <p><u>Readings</u>:</p> <p>Textbook: Chapter 9</p> <p><u>Pages</u>: Quiz 3 vocabulary list</p>
<p>7 (10/20/22)</p>	<p><u>Lecture</u>: Built environment</p> <p><u>Lecture</u>: Hazards and Outcomes in Built environment: Mold , TB, Legionella, Warfarin, lead, VOCs, Lyme disease, radon, rodents, Heat</p>	<p>19, 20</p>	<p><u>Readings</u>:</p> <p>Document: Urbanization and health in china paper</p> <p>Document: Radeloff wildfire paper</p> <p>Document: Urban form, transportation and air pollution paper</p> <p>Prevention in Built Environment and Transportation (slides)</p>

## Module 5: Plant Agriculture Food Systems: Environmental and Occupational Health Aspects

<p>8 (10/25/22)</p>	<p><u>In class quiz- Vocabulary Quiz 3</u></p> <p><u>Lecture</u>: Hazards and outcomes in Plant agriculture: Hazards: Pesticides/Insecticides: DDT, OPs, pyrethrins, lead arsenate, neonicotinoids Herbicides/Fungicides: Atrazine,</p>	<p>1, 14, 19</p>	<p><u>Quiz 3</u>: Built Environment and Transportation Systems Vocabulary and concepts</p> <p><u>Readings</u>:</p> <p>Document: Omnivores Dilemma, chapter 2</p>
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	<p>glyphosate, 24D, 245T, paraquat, azoles, Dioxins, aflatoxin, BPA endocrine disruptors, plant toxins (nicotine).</p> <p>GROUP WORK: Session 3: Concept Map</p>		<p>Document: Partners in Ag Environmental health in agriculture</p> <p>Textbook: chapter 10</p> <p><u>Pages:</u> Quiz 4 vocabulary list</p> <p><u>Due:</u> Draft mission statement</p> <p>Due: Second graded concept map</p>
<p>9 (10/27/22) (MY OUT)</p>	<p><u>Lecture:</u> Plant agriculture food systems and health</p> <p><u>Lecture:</u> Animal Agriculture Part 1</p> <p><u>Discussion:</u> carbon footprint / diet calculator</p>		<p><u>Readings:</u></p> <p>Document: Omnivore's dilemma: Chapter 4</p> <p><u>Resources:</u> online calculator</p> <p><u>hand in:</u></p> <p>analysis of carbon footprint</p>
<p><b>Module 6: Animal Agriculture Food Systems and Environmental and Occupational Health, Midterm</b></p>			
<p>10 (11/1/22)</p>	<p><u>In-Class Quiz:</u> Quiz 4 Vocab</p> <p><u>Lecture:</u> Animal Agriculture Part 2</p> <p>Midterm review</p>		<p>Document: read: Omnivore's Dilemma Chapter 11</p> <p>video:audit of dairy farm</p>

11 (11/3/22) (PMR OUT)	<b>Midterm exam</b>	All to date	Midterm - covers Quiz 1-4 vocabulary lists as well!
<b>Module 7: Energy Systems and Environmental and Occupational Health</b>			
12 (11/8/22) PMR Out	<u>In class quiz</u> - Vocabulary Quiz 5 <u>Guest Lecture</u> : Karin Martin - Policy <u>Discussion</u> : Policy brief, (final project) (?) GROUP WORK: Session 4: Choose Leverage point, Actors/Stakeholders Instruction Sheet:session #4	1, 5, 14, 19	<u>Quiz 5</u> : Animal Agriculture Systems <u>Readings</u> : Policy brief PPIA, policy example: OECD brief <u>Pages</u> : Module 6 vocabulary list
13 (11/10/22) PMR out	<u>Guest Lecture</u> : Yona Sipos (Soil Health) Discussion: integrative, regenerative agriculture <u>Hazards</u> : fracking, silica (if necessary- additional time for group work session #4)		<u>Readings</u> : textbook Haines and Frumkin Chapter 8 Fontana paper Pre-Recorded lecture: <u>Lecture</u> : Basics of energy systems, Hill criteria
14 (11/15/22)	<u>Lecture</u> : Fracking example, Focus on particular hazards in different types of energy-group discussion <u>Hazards</u> : PCBs, Sulfur dioxide, methane, radiation GROUP WORK: Session 5: Finalize Theory of Change, begin planning policy brief presentation	19	<u>Readings</u> : EHP fracking study (Rabinowitz et al), Fedak Hill criteria paper

**Module 8: Global Demographics and Global Burden of Disease due to Environment and Work**

15 (11/17/22) (MY OUT)	In class quiz- Vocabulary Quiz 6 GBD and environmental factors (IHME guest - Dr. Burkart)	3, 6, 7	<u>Quiz 6: Energy Systems</u> <u>Readings:</u> textbook Haines and Frumkin Chapter 11 IHME risk factor GBD report, EHP paper expanding burden
16 (11/22/22) (MY OUT)	<u>Lecture:</u> Pandemics and Ecosystem health Hazards: vectors, heat, biowarfare agents, GROUP WORK: Session 6: Futures Planning Reading: ?	10, 11	<u>Readings:</u> Document: Cartwright: Pandemic drivers
17 (11/24/22)	<b>THANKSGIVING - NO CLASS</b>		
<b>Module 9: Future Trends and Policies ;</b>			
18 (11/29/22)	Guest Lecture: Frumkin Wrap up: How to work for environmental and occupational health in a changing world	10	<u>Readings:</u> <u>textbook Haines and Frumkin</u> <u>Chapter 12</u> <u>Watch:</u> Economics Ted Talk on Donut economics



19 (12/1/22)	<u>In class quiz- Vocabulary Quiz 7</u> GROUP WORK: Session 7: Finalization of policy briefs for presentation	20	<u>Quiz 7: Global Burden of Disease</u> Personal vision/Mission/goals statements due
<b>Week 11: Policy Briefs</b>			
20 (12/6/22) PMR out	Final group presentations (3)	20	
21 (12/08/22)	Final group presentations (2) Final Review	20	Final Project Due
<b>Finals Week</b>			
(12/15/22)	Final Exam (DEC 15: 4:30-6:20 SOCC 303)	All	