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# ENV H 311: Introduction to Environmental Health

Spring Quarter 2014

## Course Syllabus

### Course Description

This course explores the relationship of people to their environment -- how it affects their physical well-being, and what they can do to protect and enhance their health, and to influence the quality of the environment. The course is a survey course intended to give students a basic understanding of how environmental factors impact the health of people and the community, and of the efforts made to prevent or minimize the effects of negative impacts. The course is designed to acquaint the student with the scientific and technical foundations of the field, and examines both the practice of environmental health and the problems which are addressed by the practitioners in this career discipline. Emphasis is on providing a general understanding of how environmental factors are involved in the transmission of communicable diseases and on some of the health hazards resulting from exposure to chemical and physical materials in our environment.

### Course Meeting Times and Location

8:30 - 9:20 a.m.  
Monday, Wednesday & Friday  
Room T-435 HSB

### Course Instructors

**Charles D. (Chuck) Treser**, Senior Lecturer in Environmental Health  
Department of Environmental & Occupational Health Sciences  
Office: F-561A, Health Sciences Center  
Phone: 206-616-2097  
E-Mail: <mailto:ctreser@u.washington.edu>  
Office Hours: 9:30 - 11:30 p.m. and 1:30 - 3:30 Daily; Other times by appointment.

**Julie Weicheld**, Graduate Teaching Assistant  
Department of Environmental & Occupational Health Sciences  
Office: E-179F, Health Sciences Center  
Phone: (206) 616-4086 -- during office hours only  
E-mail: [juliaw24@uw.edu](mailto:juliaw24@uw.edu)  
Office Hours: Mondays 1:30 – 4:30 pm and Tuesdays 12:30 – 3:30 pm; other times by appointment.

**Katie Fellows**, Graduate Teaching Assistant  
Department of Environmental & Occupational Health Sciences  
Office: F-226, Health Sciences Center  
Phone: (206) 616-7601 -- during office hours only  
E-mail: [fellowsk@uw.edu](mailto:fellowsk@uw.edu)  
Office Hours: 9:30 a.m. - 12:30 p.m. Tuesdays and Thursdays; other times by appointment.

## Learning Objectives

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

1. Describe, and document by case example, ways in which environmental factors in community, occupational and residential settings impact health;
2. Explain the pertinent scientific principles associated with the major environmental health program areas;
3. Explain, and be able to illustrate with examples, how factors, such as community perceptions, public health law, traditions, socioeconomic conditions, politics and interpersonal communications, may influence the practice of environmental health;
4. 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;
5. Explain the theoretical framework which guides environmental health practitioners and differentiates them from other environmental and health professionals;
6. List the major agencies and organizations involved in environmental health protection and explain their basic responsibilities, programs and problems; and,
7. Analyze at least one environmental health program in the Puget Sound area for its theoretical and legal base, its organization and management, and its interaction with and impact on the community and other agencies.

## Course Requirements

**1. Examinations:** There will be two progress assessment test; one at approximately the halfway mark and the other at the end of the class lectures. The tests 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.

- Progress Assessment Test #1: Monday, 2 May 2014
- Progress Assessment Test #2: Friday, 6 June 2014

**2. Course Project:** During the third week of the course, the class will be divided into groups which will analyze an environmental health issue or problem, assigned by the instructors, that is currently topical and/or controversial. Each group will be responsible for preparing a poster to be presented to the entire class on Tuesday, December 6th. The poster presentation should:

- a. present a description of the problem -- its size, scope and affected population(s); stressing the available information or data that best supports the group's position with regard to the public health significance of the problem or issue and its relationship to, or impact on, members of the community;
- b. discuss the etiologic or causative factors involved with this particular problem, including the agent(s), mechanism(s) of injury or health impact, and the transmission pathway(s);
- c. discuss the prevention or control strategies and programs -- including the statutory basis for government regulation or intervention in this area and the major agency or agencies (if any) responsible for dealing with the problem and describe the activities, procedures, etc. employed or under discussion by the agencies; and,
- d. present the group's conclusions and recommendations including an assessment of how well the agency is (or agencies are) dealing with the problem and your reactions/observations concerning the relevancy of the agency program/activities to community needs.

The project is to be based on information gathered by the group from: the periodic literature; government, NGO and other websites; and, the popular press. A visit to a federal, state or local government agency

(or attendance of a city or county council meeting, a regional planning council meeting, or a public hearing), dealing with your environmental health program or issue would also be helpful and encouraged, but is not required.

Each group should meet with me at least once to discuss their selection of a topic and to insure that each of the members of the group have sufficient background information with regard to the topic to be able to make the necessary observations and ask intelligent questions during a field visit. The first visit should be made no later than the fifth week of the quarter.

The final report will consist of a "poster" presentation and accompanying written report. The posters will be presented to the class during the last week of the quarter. In order to reduce wastes, conserve resources and save the students money, the "poster" presentation will consist of a single PowerPoint slide (using the template provided on the course website) and submitted electronically to the instructor by noon on Monday, December 9th and include the following:

- the project title;
- the names of each of the group members;
- the date;
- a statement of the problem or issue being investigated;
- a discussion of the legal, political and social issues affecting the problem;
- identification of the major government agencies, private sector and non-governmental organizations or citizens groups involved; and, the results found and conclusions drawn by the group.

Each group should download the PowerPoint template available here for use in constructing their "poster".

In addition to the above elements of the poster, the written report should include information on any field visits, any desired additional information or discussion, and a bibliography of the literature cited. (A word of caution with regard to the bibliography. While the internet is a tremendous resource for obtaining information, it is neither comprehensive nor necessarily authoritative. There is a lot of misinformation on the net -- be sure to use only credible sites and even then read the material critically. And remember, the library is not obsolete! Not all the journals you may need are available online [or free] and there may be important background materials and insights in books.)

**Note:** A single grade will be assigned to each group. However, the grade for each member of the group will be adjusted based on a peer evaluation performed by each member of the group. It is critically important to your grade that everyone complete the peer evaluation form -- failure to do so will negatively affect your grade in the course as your final grade for the project will be adjusted according to the grades submitted by your peers. A major purpose of the group project is for each member of the class to gain experience working together as a group to solve a current issue or problem. This is a skill which has become increasingly important in both private and public agencies and organizations. Additional details are contained on the "Projects" page of this web site.

**3. Extra Credit Points:** There are several opportunities for students to earn extra credit points.

a. Office Visit: Recognizing that the TA's office can be difficult to find, we will award 5 extra credit points to any student who comes down to E-179 to talk with one of the TAs (during their office hours, or at a scheduled appointment) BEFORE the mid-term examination. Students can also earn these points by visiting Chuck in his office (F-561A) before the midterm. However, you can only earn the points once -- you can not get duplicate points by visiting the instructor and the TAs.

b. Exercise #1: To encourage prompt attendance and to get you started thinking about the topic for the day's lecture, after the first lecture the course title slide (not the lesson title slide) shown before the start of each lecture session will depict a scene from Ireland, taken by Chuck on one of his trips over there. Up to 10 extra credit points will be awarded to students who correctly identify these pictures using their "Clickers".

c. Related Articles and Seminars: Beginning after the mid-term exam, we will award up to 2 points/article or seminar (to a maximum of 20 points) to students who read an article or attends a relevant seminar and submits a one page summary (double spaced) of the article and a brief explanation of how it relates to the course. This opportunity includes:

- The weekly DEOHS seminar.;
- Some Program on the Environment (PoE) seminars; (PoE provides a weekly listing of environmental related seminars on campus, however, be aware that not all of these are relevant to Environmental Health.)
- Certain journal articles related to Environmental Health; and,
- Some of the optional readings. (The schedule posted on the course website lists an optional supplementary reading for each week. Some of these are links to website run by government agencies, non-governmental organizations (NGOs), etc.; the articles count, but the web sites do NOT count as an extra credit option.)

d. Other: There may be additional extra credit opportunities made available during the quarter.

### Course Materials

**Textbook**: Nadakavukaren, Anne, *Our Global Environment: A Health Perspective*, 7th Ed., Waveland Press, Prospect Heights, Illinois, 2011. (The textbook is available at the South Campus Center branch of the University Bookstore.)

**Required Readings**: The materials in the above textbook 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 a sample or case that illustrates the principles covered in the text and lectures. All of these readings available as PDF files that can be read or downloaded to your computer by following the links on the course schedule. In a few cases, the linked optional readings will take you to a web site that contains additional information.

**Optional Readings**: Your syllabus also lists a number of 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 on-line. In some cases, the suggested readings may be links to a government or other web site. These links also provide you with additional information on the topic of the lesson, and provide you with an opportunity to explore the type and scope of information available from these various sources.

Also 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) are in the Department of Environmental Health Library (F-459) and include:

- *Journal of Environmental Health*;
- *American Journal of Public Health*
- *Emerging Infectious Disease Journal*;
- *Environment*; and
- *EPA Journal*.

In addition there are a number of general textbooks in ecology, environmental engineering and environmental health which are recommended for students desiring to obtain greater technical information in the practice of environmental health.

- a. Bernarde, Melvin, *Our Precarious Habitat: Fifteen Years Later*, John Wiley & Sons, New York, 1989. [seriously dated but still interesting textbook, written from a different perspective than Nadakavukaren's book.]
- b. Frumkin, H. *Environmental Health: From Global to Local*, Jossey-Bass, San Francisco, 2012. [An excellent text.]
- c. Blumenthal DS [Ed.] *Introduction to Environmental Health*, Springer Publishing Co., New York, 1985. [This book gives good coverage of certain problems like toxic substances and occupational hazards but is very sketchy on the traditional areas like food and water.]

- d. Moeller DW. *Environmental Health*, 3rd Edition, Harvard University Press, Cambridge, 2005.
- e. Moore GS. *Living with the Earth: Concepts in Environmental Health Science*, Lewis Publishers, New York, 1999.
- f. Salvato JA. *Environmental Engineering and Sanitation* [6th Ed.], John Wiley & Sons. 2009. [This has been the best, up-to-date, comprehensive environmental health textbook available, however, it is expensive, technical and somewhat tedious to read, and it has now been split into three books.]

### Course Policies

1. **Written Assignments:** All written assignments, including the group paper must be typewritten. Your report will be graded on the substance of your report and on the effectiveness of its organization and presentation. Groups should see me or one of the TAs if they need help with making their PowerPoint slide, including graphics.
2. **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.
3. **Grading:** Your final grade will be the average of the two course exams, your course project and any extra credit points.
4. **Disability Accommodations:** The University is committed to ensuring facility and program access to students with either permanent or temporary disabilities through a variety of services and equipment. The Disability Resources for Students Office (DRS) coordinates academic accommodations for enrolled students with documented disabilities. Accommodations are determined on a case-by-case basis and may include classroom relocation, sign language interpreters, recorded course materials, note taking, and priority registration. DRS also provides needs assessment, mediation, referrals, and advocacy as necessary and appropriate. Requests for accommodations or services must be arranged in advance and require documentation of the disability, verifying the need for such accommodation or service. If you would like to request academic accommodations due to a disability, please contact Disabled Student Services, 448 Schmitz, Box 355839, (206) 543-8924, (TTY) 543-8925, [uwdss@u.washington.edu](mailto:uwdss@u.washington.edu). If you have a letter from Disabled Student Services indicating you have a disability that requires academic accommodations, please present the letter to me so we can discuss the accommodations you might need for class.



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# ENV H 311: Introduction to Environmental Health

## Spring Quarter 2014 Course Schedule

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

No.	Day	Date	Lesson Topic / Lecturer	Required Reading	Optional Readings
1	Mon.	03/31/2014	Course Introduction C. Treser, DEOHS	Chapters 1-2	A Common Agenda
2	Wed.	04/02/2014	Principles of Ecology Movie / C. Treser, DEOHS	Chapters 3-4 Reading #1	WWIC: Environment
3	Fri.	04/04/2014	Population Dynamics & Health C. Treser, DEOHS	Chapters 5-6	WWIC: Population
4	Mon.	04/07/2014	Limits to Growth Movie / C. Treser, DEOHS	Chapter 7	Gilman* Meadows*
5	Wed.	04/09/2014	Principles of Toxicology C. Treser, DEOHS	Reading #2 Rethinking	A Small Dose of Tox
6	Fri.	04/11/2014	Principles of Risk Assessment C. Treser, DEOHS	Reading #3 Seattle Cancer	Do you Dare . . . ? Teflon
7	Mon.	04/14/2014	Principles of Epidemiology K. Fellows, DEOHS	Reading #4 Cholera	Occ. death among healthcare workers*
8	Wed.	04/16/2014	Disease Trans. & Control C. Treser, DEOHS	Watersedge	Border Medicine* Population biology*
9	Fri.	04/18/2014	Assignment of Group Projects C. Treser, DEOHS	Group Project Website	
10	Mon.	04/21/2014	Water Quality J. Weicheld, DEOHS	Chapter 15	WWIC: Water
11	Wed.	04/23/2014	Wastewater - Municipal C. Treser, DEOHS	Chapter 16	EPA Wastewater
12	Fri.	04/25/2014	Wastewater - Onsite J. Hutchison/R. Oliver, SHD	Reading #5 Wastewater Primer	Survey of On-site Systems
13	Mon.	04/28/2014	Foodborne Illness L. French, Washington DOH	Chapter 9	MMWR Foodborne Illnesses 1998-2008
14	Wed.	04/30/2014	Food Protection C. Treser DEOHS	Reading #6 Ethnic Foods	Grains of Hope*
15	Fri.	05/02/2014	<b>Progress Assessment Test #1</b>	<b>Test #1 Study Guide</b>	
16	Mon.	05/05/2014	Air & Air Quality C. Treser, DEOHS	Chapters 11	EPA Air Quality
17	Wed.	05/07/2014	Air Pollution & Health A. Gagney, ALAW	Chapter 13	EPA Air Trends
18	Fri.	05/09/2014	Indoor Air Quality C. Treser, DEOHS	Reading #10 Air Quality	EPA IAQ
19	Mon.	05/12/2014	Occupational Health & Safety A. Mak, The Boeing Co.	Reading #9 OH History	IH Fact Sheets JSHQ Vol. 14:3
20	Wed.	05/14/2014	Accidents & Injuries C. Treser, DEOHS	Reading #8 Injuries	CDC: Injuries and Violence
21	Fri.	05/16/2014	Noise Protection M. Cohen, DEOHS, FRCG	Chapter 14	Engineering a Quieter Workplace*

No.	Day	Date	Lesson Topic / Lecturer	Required Reading	Optional Readings
22	Mon.	05/19/2014	Zoonotic & Vector-borne Disease Liz Dykstra, DOH	Chapter 8	Compendium of measures*
23	Wed.	05/21/2014	Vector Control C. Treser, DEOHS	Reading #7 Animal-borne	Urban Rodent Control*
24	Fri.	05/23/2014	Radiation Protection P. Campbell, UW EH&S	Chapter 10	Ultraviolet Radiation*
	Mon.	05/26/2014	HOLIDAY: Memorial Day		
25	Wed.	05/28/2014	Solid & Hazardous Wastes C. Treser, DEOHS	Chapter 17 Reading #11	EPA Wastes Site MSW & Greenhouse
26	Fri.	05/30/2014	Waste Reduction/Recycling C. Treser, DEOHS	Reading #12 EPA 3 Rs	EPA Handbook
27	Mon.	06/02/2014	Housing & Health C. Treser, DEOHS	Reading #13 Basic Principles	
28	Wed.	06/04/2014	Urban Sprawl & Health C. Treser, DEOHS	Reading #14 Healthy Envir.	Design. & Building Healthy Places
30	Fri.	06/06/2014	Progress Assessment Test #2	Test #2 Study Guide	
30	Tue	06/10/2014	Final Examination Period Poster Presentation		<b>IMPORTANT: This session is mandatory</b>
* =These articles qualify for extra credit					