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ENV H 311: Introduction to Environmental Health

Autumn Quarter 2015 Course Syllabus

Course Description

This course explores the relationship of people to their environment -- how it affects their health and 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 Health Sciences Center

Course Instructors

Charles D. (Chuck) Treser, Principal Lecturer in Environmental Health
Department of Environmental & Occupational Health Sciences
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Office Hours: 9:30 - 11:30 p.m. and 1:30 - 3:30 Daily; Other times by appointment.

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Office Hours: 4:00 - 6:00 p.m. on 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. Participation: Students are expected to come to class having read the reading assignment for the day. Questions and comments on the subject matter are encouraged.

2. Examinations: There will be two progress assessment tests -- one at approximately the halfway mark, and the other at the end of the regular 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.

Both exams will consist of 40 multiple-choice questions plus at least one essay question. Student will need to come to class prepared with a number 2 pencil and a scantron form (1158-OEA -- the purple one at the University Bookstore).

- Progress Assessment Test #1: Monday, 2 November 2015
- Progress Assessment Test #2: Friday, 11 December 2015

3. 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 15th. 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 14th 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 online 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.

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

a. Office Visit: Recognizing that the Instructor and TA offices can be difficult to find, we will award 5 extra credit points to any student who comes down to one of our offices to talk with one of us (during their office hours, or at a scheduled appointment) BEFORE the mid-term examination. However, you can only earn the points once -- you can not get duplicate points by visiting one of instructors and the TAs

b. Exercise #1: 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 successfully complete all of Exercise #1. To receive extra credit points you will need to use your audience response device (ARD) to correctly identify the title slide for each class lecture, and provide your guess as to why that particular slide was chosen for the lecture, i.e., what does the picture have to do with the topic under discussion for the day. One point will be awarded for correctly identifying 60% (or 18 sessions) of the 30 possible title slide pictures; two points will be awarded for correctly identifying 64% (or 19 sessions), and so on to 10 points for correctly identifying all 30 or 31 title slide pictures.

c. Related Articles and Seminars: Beginning after the first progress assessment test, we will award up to 2 points/paper based on a peer reviewed journal article or seminar that students have read (articles) or attended (seminars, conferences or meetings) that is relevant to one of the course topics. To receive credit (to a maximum of 20 points), students must submit a one-page summary (double spaced) summary of the article or seminar, and a brief explanation of how it relates to the course, to the "Assignments" section of this site. The one page paper must be uploaded to the Canvas website and contain:

- the student's name and date
- the title of the seminar, article or meeting
- a complete citation, i.e., time date and location of the seminar or meeting; or title, volume, page, numbers and date of the article.
- a synopsis of the information presented; and,
- a brief description of how it relates to the course.

Extra credit options include:

- The DEOHS holds a weekly seminar.
- The Program on the Environment (PoE) provides a weekly listing of environmental related seminars on campus. (However, be aware that not all of these are relevant to Environmental Health.)
- Any peer reviewed article in a relevant journal, e.g., *The Journal of Environmental Health*, *Emerging Infectious Disease Journal*, etc.
- The course schedule posted on the course website lists some optional supplementary readings for each week. Some of these are links to website run by government agencies, non-governmental organizations (NGOs), etc.; the articles marked with an asterisk (*) 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

Audience Response Device (ARD): This quarter we will be trying out the Top Hat classroom response system. Unlike Turning Technologies' "Clickers" students can use their smart phone, tablet or laptop computer to answer questions posed during the lectures. NOTE: There is a charge to register your device. Information on the costs and on the method for registering your device is contained at: <https://support.tophat.com/hc/en-us/articles/200664710-Student-Purchasing-a-Subscription-for-Top-Hat->

Top Hat: You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message.

You can visit tinyurl.com/TopHatStudentGuide for the Student Quick Start Guide which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up and running on the system. An email invitation will also be sent to your school email account (if you don't receive this email, you can register by visiting our course website tophat.com/e/825880).

Top Hat will require a paid subscription, and the standard pricing for the cheapest option is \$24 for 4-months of unlimited access. For a full breakdown of all subscription options available please visit www.tophat.com/pricing.

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. a. Frumkin, H. *Environmental Health: From Global to Local*, Jossey-Bass, San Francisco, 2005. [An excellent text with a new edition recently published.]
- b. Friis RH. *Essentials of Environmental Health*, 2d Edition, Jones & Bartlett Learning, Burlington, MA, 2012.
- c. Mawell, NI. *Understanding Environmental Health*, 2d Edition, Jones & Bartlett Learning, Burlington, MA, 2014.
- d. Nemerow NL, Agardy FJ, Salvato JA. *Environmental Engineering* [6th Ed.], John Wiley & Sons. 2009. [This has classic reference is the best, up-to-date, comprehensive environmental health textbook available. [Originally written by Joseph A. Salvato, a Sanitary Engineer in New York, it has been updated and revised, and split into three separate book covering: *Water & Wastewater*; *Environmental Health & Safety*; and, *Prevention & Response*. However, it is expensive, technical and somewhat tedious to read.]

Course Policies

1. **Academic Integrity:** (<http://sph.washington.edu/students/academicintegrity/>) 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.

- 2. Access and Accommodation:** (<http://depts.washington.edu/uwdrs/faculty-resources/syllabus-statement/>) 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.

If you have any questions, please contact myself, Trina Sterry, Sara Mackenzie or Anna Frazer.

- 3. 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.
- 4. Tests:** There will be two progress assessment 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.
- 5. Grading:** Your final grade will be the average of the two course exams, your course project, any participation points, and any extra credit points.



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Autumn Quarter 2015 Tentative 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	Wed.	09/30/2015	Course Introduction C. Treser, DEOHS	Chapters 1-2	A Common Agenda
2	Fri.	10/02/2015	Principles of Ecology Movie / C. Treser, DEOHS	Chapters 3-4 Reading #1	WWIC: Environment
3	Mon.	10/05/2015	Population Dynamics & Health T. Busch Isaksen, DEOHS	Chapters 5-6	WWIC: Population
4	Wed.	10/07/2015	Limits to Growth Movie / C. Treser, DEOHS	Chapter 7	Gilman* Meadows*
5	Fri.	10/09/2015	Principles of Toxicology C. Treser, DEOHS	Reading #2 Rethinking	A Small Dose of Tox
6	Mon.	10/12/2015	Principles of Risk Assessment T. Busch Isaksen, DEOHS	Reading #3 Seattle Cancer	Do you Dare . . . ? Teflon
7	Wed.	10/14/2015	Principles of Epidemiology C. Treser, DEOHS	Reading #4 Cholera	Occ. death among healthcare workers*
8	Fri.	10/16/2015	Disease Trans. & Control C. Treser, DEOHS	Watersedge	Border Medicine* Population biology*
9	Mon.	10/19/2015	Assignment of Group Projects C. Treser, DEOHS	Group Projects Template	
10	Wed.	10/21/2015	Water Quality C. Treser, DEOHS	Chapter 15	WWIC: Water
11	Fri.	10/23/2015	Wastewater - Municipal C. Treser, DEOHS	Chapter 16	EPA Wastewater
12	Mon.	10/26/2015	Wastewater - Onsite J. Hutchison, SHD	Reading # 5 EPA Wastewater Primer	Survey of On-site Systems
13	Wed.	10/28/2015	Vector Control C. Treser, DEOHS	Chapter 8	Compendium of measures*
14	Fri.	10/30/2015	Zoonotic & Vector-borne Disease Liz Dykstra, DOH	Reading #6 Animal-borne	Urban Rodent Control*
15	Mon.	11/02/2015	Progress Assessment Test #1	Test #1 Study Guide	
16	Wed.	11/04/2015	Foodborne Illness L. French, Washington DOH	Chapter 9	MMWR FBI 1998- 2008
17	Fri.	11/06/2015	Food Protection T. Busch Isaksen, DEOHS	Reading #7 Ethnic Foods	Grains of Hope*
18	Mon.	11/09/2015	Radiation K. Makinson, UW EH&S	Chapter 10	UV Radiation*
	Wed.	11/11/2015	HOLIDAY: Veterans' Day		

No.	Day	Date	Lesson Topic / Lecturer	Required Reading	Optional Readings
19	Fri.	11/13/2015	Air & Air Quality C. Treser, DEOHS	Chapter 11	EPA Air Quality
20	Mon.	11/16/2015	Air Pollution & Health A. Gagney, ALAMP	Chapter 13	EPA Air Trends
21	Wed.	11/18/2015	Indoor Air Quality C. Treser, DEOHS	Reading #8 Air Quality	EPA IAQ
22	Fri.	11/20/2015	Noise Protection M. Cohen, DEOHS, FRCG	Chapter 14	Eng. a Quieter Workplace*
23	Mon.	11/23/2015	Occupational Health & Safety C. Miele, AMEC.	Reading #9 OH History	IH Fact Sheets JSHQ Vol. 14:3
24	Wed.	11/25/2015	Accidents & Injuries C. Treser, DEOHS	Reading #10 Injuries	CDC: Injuries and Violence
	Fri.	11/27/2015	HOLIDAY: Thanksgiving Break		
25	Mon.	11/30/2015	Solid Wastes T. Busch Isaksen, DEOHS	Chapter 17 Reading #11	EPA Wastes Site MSW & Greenhouse
26	Wed.	12/02/2015	Waste Reduction/Recycling T. Busch Isaksen, DEOHS	Reading #12 EPA 3 Rs	EPA Handbook
27	Fri.	12/04/2015	Energy & Health C. Treser, DEOHS	Chapter 17 Reading #13	
28	Mon.	12/07/2015	Housing & Health C. Treser, DEOHS	Reading #14 Basic Principles	
29	Wed.	12/09/2015	Urban Sprawl & Health C. Treser, DEOHS	Reading #15 Healthy Envir.	Design. & Build. Healthy Places
30	Fri.	12/11/2015	Progress Assessment Test #2	Test #2 Study Guide	
31	Tue	12/15/2015	Final Examination Period Poster Presentations		IMPORTANT: This session is mandatory

* =These articles qualify for extra credit