

1-2014

PUBH 560.50: Environmental and Rural Health

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Recommended Citation

Ward, Tony J., "PUBH 560.50: Environmental and Rural Health" (2014). *Syllabi*. 746.
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**The College of Health Professions & Biomedical Sciences
School of Public & Community Health Sciences**

**PUBH 560
Environmental and Rural Health
3 credit hours
Spring 2014**

- Instructor:** Tony Ward, PhD, Associate Professor
Center for Environmental Health Sciences
School of Public & Community Health Sciences
Department of Biomedical & Pharmaceutical Sciences
The College of Health Professions & Biomedical Sciences
- Format:** Online.
For purposes of assignments and class activities, the week starts on Monday, 12:01 a.m. and ends on Sunday at Midnight.
- Office Hours:** Fridays 1-2 pm.
Dr. Ward will be available by phone, via e-mail, and in his office during office hours.
Dr. Ward will post exceptions as a class announcement on Moodle.
- Contact Info:** tony.ward@umontana.edu
Skaggs Building Room 176
Phone: 406-243-4092
Fax: 406-243-2807

Required Text (Course Materials)

- 1) Frumkin, Howard, 2010 (2nd edition), Environmental Health: From Global to Local. Second Edition. John Wiley & Sons: San Francisco, CA. ISBN 0470404876.
- 2) Johnson, Steven, 2006. The Ghost Map. Penguin Group: New York, NY. ISBN 1594489254.

Required Additional Readings

Additional readings or web assignments will be posted as necessary.

Course Description

This course will provide students with a comprehensive introduction to environmental health. This includes an overview of the methods and paradigms used in the field, ranging from ecology to epidemiology, from toxicology to environmental psychology, and from genetics to ethics.

Course Objectives

1. Understand and provide examples of the impact of environmental hazards (air pollutants, water pollutants, etc.) on human health.
2. Understand and list genetic, physiologic, and psychosocial factors that affect susceptibility to adverse health outcomes following exposure to environmental hazards (air pollutants, water pollutants, etc.).
3. Provide examples of local, state, and federal environmental regulatory programs, and how they might protect the health of populations.
4. Understand and provide examples of current risk assessment methodologies used in the field of public health.

5. Understand and provide examples of specific exposure assessment and mitigation techniques for environmental hazards.
6. Understand the basic mechanisms of toxicity from environmental exposures.
7. Understand and provide examples of current risk management and risk communication methodologies.
8. Provide examples of data sets typically used in epidemiological studies.
9. Understand the purpose (including strengths and limitations) of several public health screening programs.
10. Provide examples of different types of public health problems at the local, regional, and global levels.
11. Understand, list, and describe the basic principles of epidemiology in public health.
12. Understand the purpose of epidemiology in public health.
13. Provide examples of legal/ethical bases in public health.
14. Understand how social and behavioral sciences influence and dictate public health research/practice.
15. Provide examples of social/behavioral factors that affect health of individuals/populations.
16. Understand the role that different types of stakeholders might have in public health issues.
17. Understand the different components that comprise public health programs, policies, and interventions.
18. Understand and provide examples of social/community factors that influence public health issues.
19. Understand and provide examples of how social and behavioral science interventions and policies influence public health issues.
20. Understand different types of ethical principles (and importance of) in public health issues.
21. Understand and provide examples of targets and levels of intervention in public health programs/policies.
22. Understand and provide examples of how the roles of history, power, privilege and structural inequality influence health disparities.
23. Provide examples of why cultural competence alone cannot address health disparity.
24. Understand the concept of community-based participatory research, and provide examples where these programs improve health in diverse populations.
25. Understand and cite examples of where culture-specific needs resulted in a more appropriate health intervention.
26. Understand the importance of these traits (ethics) in all actions.
27. Understand the importance of collaborative methods in achieving organizational and community health goals.
28. Understand the importance of social justice and human rights principles when addressing community needs.
29. Identify and understand how different strategies can motivate others for collaborative problem solving, decision-making, and evaluation.
30. Through exposure assessment, understand and identify examples of how these agents affect human health.
31. Using exposure assessment and toxicology principles understand and identify examples of how molecular concepts can inform public health issues.
32. Through exposure assessment and toxicology principles, understand the importance of integrating general biological and molecular concepts into public health.
33. Identify sentinel events in the history of the public health profession.
34. Describe and apply specific basic principles of ethical analysis to the public health profession.
35. Understand the core functions of assessment, policy development, and assurance in the analysis of public health problems/solutions.
36. Encourage students to embrace a definition of public health that captures the unique characteristics of the field.

37. Encourage students to work collaboratively with diverse communities and constituencies.
38. Encourage students to value lifelong learning and professional service.
39. Identify and understand those factors (social, behavioral, environmental, and biological) that contribute to specific individual and community health outcomes.
40. Ability to identify program implementation tasks in final project.
41. Understand the purpose of program evaluations, and give examples of specific evaluation strategies used in the public health field.
42. Provide specific examples of how changes in public health systems influence the quality of life.
43. Provide specific examples of how inter-relationships among systems influence the quality of life.
44. Give specific examples of how different types of policies impact health systems at the local, state, national, and international levels.
45. Give specific examples of how global trends impact public health problems / systems.
46. Describe the air pollution, drinking water, and wastewater systems existing in rural communities.
47. Describe the economic characteristics associated with rural communities impacting their environmental pollution issues.
48. Describe how rural public health workforce issues impact wastewater and drinking water treatment.

Program Public Health Competencies Addressed in PUBH 560:

1. Prepare Community Data for Public Health Analyses and Assessments
2. Contribute to Public Health Program and Policy Development
3. Communicate in Public Health Settings
4. Practice Public Health with People from Diverse Populations
5. Collaborate with the Community in the Practice of Public Health
6. Base Public Health Practice on Scientific Evidence
7. Participate in Financial Planning and Management of Public Health Units
8. Exercise Public Health Leadership and Systems Thinking
9. Respond to Public Health Issues in Rural Settings
10. Uses Global Insight in Responding to Local Public Health Issues

Course Format

This course will be delivered online with support from UOnline. Readings and assignments designed to develop applied skills will form the basis for review and discussion during the weekly class postings on the discussion board. A self-study format (e.g., reading assignments and web links) will be used to present key points. **The emphasis will be on discussion and application of the course material in discussion threads.**

UOnline Moodle Tutorial

UOnline has made available an interactive tutorial for using Moodle as a student. The tutorial and other resources can be found at the following web site: <http://umonline.umt.edu/>

Library Resources

Some assignments may require library resources. To access the UM's Mansfield Library resources from off-campus, students will be required to enter their SCAUID and password. This is the same ID and password that you use to login to Moodle and use for your official UM e-mail address. Information on resources available through the Mansfield Library can be found at: <http://www.lib.umt.edu/howto>.

According the UM library web page: "When connecting to licensed library resources from off-campus, users will be prompted to login using the "standard UM-M computer access user ID" (SCAUID) and password. This is the same account used for campus wireless accounts and students' Cue1 email. Creation of a separate library remote access account will no longer be necessary. For students this is the "first

initial" + "last initial" + six digit unique number sign-on name, e.g. "jd123456". Students and employees can now look up their SCAUID on [CyberBear](http://weblib.lib.umt.edu/remote.html): (<http://weblib.lib.umt.edu/remote.html>)

If you need assistance with library resources, please contact the library's distance learning coordinator. The toll-free number for the reference desk is 1-800-240-4939.

Student Assessment

- 1) Class participation 50% (5% for each of two discussion questions; 40% for each of 12 weekly postings to discussion board)
- 2) Wastewater Treatment Facility Report, 10%.
- 3) Midterm exam, 20%.
- 4) Final exam, 20%.

This course will use the traditional letter grade option. Therefore, final grades will consist of the following: A, B, C, D, F. Grades will be calculated based on the standard formula (90-100% = A; 80-89% = B; 70-79% = C; 60-69% = D; 59% and below = F).

Discussion Questions

The Course Schedule is arranged to allow for students to participate in the Week's Discussion Topics throughout the week. It is encouraged that all discussion threads be finalized by the end of the week that questions are posted (i.e. Friday evening). Each week, Dr. Ward will post up to two questions for discussion. In addition, students will be assigned as discussion leads. The student's questions should pertain to the readings assigned for that week.

Student discussion questions must be posted by Monday at noon. This will allow adequate time for the other students to discuss the items and/or questions presented by the week's discussants.

Weekly Postings to the Discussion Board – Class Participation

All students are required to participate in each posted discussion every week by Friday evening (Mountain Standard Time). As needed, the instructor will present follow-up comments to individual postings or to the class as a whole by noon on the following Monday. Students should revisit the week's discussion to view and respond to comments from classmates and the instructor. Comments to colleagues throughout the discussion week are not only highly encouraged, but expected. This format necessitates completion of readings as well as participation in the discussion boards. Class participation constitutes a significant portion (50%) of your grade.

Wastewater Treatment Facility Report

Approximately midway through the semester, students will make arrangements to visit a wastewater treatment facility in their area. Following this visit, a paper will be written that summarizes the site visit.

Exams

One midterm and one final exam will be administered through the Moodle system. The exams will be "open book" with a combination of multiple choice, short answer, and essay questions. The exams are timed and must be completed once the student has begun.

Announcements

Weekly class announcements will be posted by the instructor. Moodle system administrators will sometimes post announcements about the Moodle system.

Communication

Communication will take place using e-mail, discussion boards, the virtual classroom, and Skype.

E-mail should be used for “private” communication with the instructor or other students. *Any questions regarding grades or communication about more personal issues should be handled via email or by phone.* Please include PUBH 560 in the subject line for e-mail communication with the instructor.

Discussion boards are appropriate for questions or discussions that would normally occur in the classroom. Remember that the discussion board is public and your classmates can read what you post there!

Submitting Assignments Electronically

All assignments will be submitted electronically on the Moodle site.

Important:

- Assignments are due at midnight, Mountain Time.
- Save your completed assignments as a Word document with the file name YourLastNameAssignmentNumber (e.g. SmithAssignment1.doc).
- Do not include any symbols (such as # @ %) in the assignment name. Documents that have names that include symbols will not be successfully uploaded in the instructor area.
- Make sure that your name, the date, and the assignment number are also included at the top of your completed assignment.
- Submit your assignment through the Assignments area in Moodle.

If you need assistance with viewing or submitting your assignments, please call the Help Desk at 406-243-4357 or refer to the UOnline student resources at <http://umonline.umt.edu/>.

UM Public Health Course Syllabus Addendums

Please click on this link: <http://publichealth.health.umt.edu/content/spchs-program-policies>

to see the latest information on program policies, including:

University of Montana Mission Statement
School of Public and Community Health Science’s (SPCHS) Mission Statement
Leave of Absence Policy
Academic Probation Policy
Plagiarism Warning

ADDITIONAL NOTES

Students with disabilities will receive reasonable accommodations in this online course. To request course modifications, please contact me as soon as possible. I will work with you and Disability Services in the accommodation process. For more information, visit the Disability Services website at <http://www.umt.edu/dss/> or call (406) 243-2243 (Voice/Text).

This syllabus is subject to change by the instructor. Any changes will be announced in the announcement section of Moodle.

Course Schedule

	Topic(s)	Assigned Reading
Week 1 1/27-1/31	Methods and Paradigms: Ecology and environmental health, toxicology.	Frumkin: Intro, Chapters 1-2. Ghost Map: p. 1-56.
Week 2 2/3-2/7	Environmental and occupational epidemiology, exposure assessment, and environmental psychology.	Frumkin: Chapters 3-5. Ghost Map: p. 57-138.
Week 3 2/10-2/14	Genetics, environmental health ethics, and environmental justice.	Frumkin: Chapters 6-8. Ghost Map: p. 139-191.
Week 4 2/17-2/21 2/17, President's Day, UM Holiday	Global scale: Population pressure, climate change, and developing nations.	Frumkin: Chapters 9-11. Ghost Map: p. 192-256.
Week 5 2/24-2/28	Regional scale: Air pollution and energy production.	Frumkin: Chapters 12-13.
Week 6 3/3-3/7	Healthy communities and water/health.	Frumkin: Chapters 14-15.
Week 7 3/10-3/14	Local scale: Solid and hazardous waste, pest control and pesticides, and food safety. Midterm Review.	Frumkin: Chapters 16-18.
Week 8 3/17-3/21 3/21	Healthy buildings and workplace health/safety. Midterm.	Frumkin: Chapters 19-20.
Week 9 3/24-3/28	Radiation, injuries, and environmental disasters.	Frumkin: Chapters 21-23.
Week 10 3/31-4/4	Spring Break.	
Week 11 4/7-4/11	Nature contact and children.	Frumkin: Chapter 24-25.
Week 12 4/14-4/18	The Practice of Environmental Health: Prevention and environmental health practice. Wastewater Treatment Facility Site Visit.	Frumkin: Chapters 26-27.
Week 13 4/21-4/25	GIS and risk assessment.	Frumkin: Chapters 28-29.
Week 14 4/28-5/2	Environmental health policy and risk communication.	Frumkin: Chapters 30-31.
Week 15 5/5-5/9	Legal remedies. Final Review. Wastewater Treatment Facility Reports Due.	Frumkin: Chapter 32.
Week 16 5/12-5/16	Final.	