

Topics in Health and Environment: Risk, Health, and Safety
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In this course, we will explore many scientific, cultural, and perceptual aspects of environmental risk issues. We will discuss, in depth, toxicological and epidemiological concepts, psychological aspects of risk perception and coping, and influences on self-protective behavior. We will also spend time discussing risks and the media, and how to communicate with the public about risks.

This course has three main learning goals. When you have completed the class you should have a demonstrable understanding of the basic principles of toxicology and epidemiology. You should be able to analyze the characteristics of a hazard and identify likely influences on perception of risk; and, you should be able to put together a practical plan to communicate about those risks with the public.

The success of the class depends very much on thoughtful discussion, and active participation by the members of the seminar. That, in turn, requires that you have read, and thought about the books and articles assigned. The emphasis in this class is on critical thinking about risk issues.

Course Learning Objectives

This course is intended to meet the following learning goals for the Environmental Policy, Institutions, and Behavior major, offered by the Department of Human Ecology.

Goal 1: . . . understand and analyze the varied perspectives offered by the social and natural sciences regarding the causes and consequences of social, ecological, and environmental change.

1.5 Evaluate major issues in health, including race, gender, and socio-economic position, food and nutrition access and policies, cultural factors, and understandings of risk and vulnerability.

Goal 2: Students will acquire the skills to use appropriate conceptual and methodological tools to structure inquiries about human-environment interactions:

- 2.1. Assess the relevant contexts for addressing the question this problem, at the appropriate spatial, temporal, and organizational scale(s).
- 2.2. Identify the relevant biological, historical, sociocultural, governance and political issues that need to be addressed.
- 2.3. Identify what constitutes valid and relevant evidence to address the question and demonstrate an ability to understand and work with quantitative information.
- 2.4. Conduct ethical primary and secondary research using appropriate methods and considering relevant community norms.
- 2.5. Analyze and interpret evidence.
- 2.8. Identify different decision-making processes and criteria for selecting from among alternatives.
- 2.9. Evaluate the alternatives' environmental and differentiated social consequences.
- 2.10. Identify relevant audiences, determine communication goals and communicate the results in oral and/or written form in a manner effective for each targeted audience.
- 2.11. Work effectively in team settings

Goal 3: Students will undertake their work guided by ethical considerations. They will identify their own values with respect to environmental, health, and food issues. They will evaluate and address the ethical dimensions and implications of related problems, assessments, plans, and communication, including their differentiated social impacts.

For more about these goals, see:

http://humanecology.rutgers.edu/Documents_PDF/Learning%20Goals%20EPIB.pdf

Attendance

Class meets Tuesdays from 10:55 to 1:55 in Blake 131. Please arrive on time, and silence your cell phones and put them away for the duration of class time. Attendance is mandatory. Missing more than one class for reasons other than those permitted under Rutgers guidelines (serious illness, confidential, or sensitive personal reasons, religious observance, participation in Rutgers-approved activities) can result in a reduction in your final grade. Missing three classes will result in a failing grade. If you will be absent from a class for any reason, please report your absence through the University Absence Reporting Website <https://sims.rutgers.edu/ssra/>. The University also recommends that you contact your professors directly to let them know of your absence.

Grading

Grading will be based on class assignments/homework (10%), two exams, (40%), written group projects (40%), and oral presentations (10%).

Books/Readings

You will need to purchase one book: [The Dose Makes the Poison: A Plain-Language Guide to Toxicology](#), 3rd Edition (Paperback) Publisher: Wiley; (2011). You will read most of the chapters in the book and will answer questions related to them, so this is not simply optional reading material. Used copies are available on Amazon. Just make sure to get the **third** edition. All other readings are available through the Ecompanion site for the course: <https://ecollege.rutgers.edu>.

Class Assignments

Because reading and thinking about the material before class is so important, we are providing some incentive (beyond your own insatiable thirst for knowledge) to do both. As part of your overall grade, you will be required to submit answers to questions about the material using the Ecompanion **drop box**. You are required to print out your answers and to bring them to class so that you may refer to them and take notes as we talk about important issues. We expect a submission for each chapter or article *before* the class date assigned. No late assignments will be accepted. All of the articles will be available in electronic form.

Group Projects

In addition to the chapters and articles assigned to the entire class, each seminar member will be assigned to a group with a specific risk topic to review, summarize, and discuss with the class on a particular day. The assignment for the group is to prepare a written summary of the main scientific, social, political, and communications issues related to their problem. Based on their written summary, the group will design risk communication materials to address the problem and present these to the class.

We will use American Psychological Association (APA) formatting for references in all written reports. For guidance in how to use APA formatting see: <http://libguides.rutgers.edu/writing>. Please refer to the group project rubric for other details.

Academic Honor and Integrity

Plagiarism will not be tolerated in any form. This includes the improper citation of materials from any source, including the Internet. If you have any questions about how to properly attribute information, words or ideas produced by others, please bring them up in class; chances are that others have the same questions.

The Rutgers University Policy on Academic Integrity considers cheating, fabrication, facilitation of academic dishonesty, plagiarism, and the denial of access to others of materials or information as violations of academic integrity. All violations will be dealt with according to the procedures described in the policy found at <http://academicintegrity.rutgers.edu/>. The consequences of violations of academic integrity range from loss of class credit to expulsion from the University.

Contact Information

Dr. Hallman's office hours (202 Cook Office Building) are by appointment. Dr. Hallman's office number is: 848-932-9227. His email is: hallman@aesop.rutgers.edu

Dr. Robson's office hours (263 Foran Hall) are by appointment. Please contact Ms. Long at 848-932-6371 or long@aesop.rutgers.edu for an appointment. Dr. Robson's e-mail is robson@aesop.rutgers.edu his number is: 848-932-6276.

Note: Readings and Assignments are DUE in the DROP BOX on the Date Listed.

- Sept. 5 **Introduction to Risk Issues – Hallman and Robson.** Begin reading *The Dose Makes the Poison*. Start collecting warning labels. Review Dr. Robson's Lecture slides.
- Sept. 12 **Basic Toxicological Concepts - Robson.** Read the Introduction to the 3rd Edition, Preface to the 2nd Edition, and Chapters 1-2 and pages 31-35 in Chapter 3 of Ottoboni, *The Dose Makes the Poison*. Remember to answer questions related to the chapters and submit to the drop box before class. Read FAQ – Dihydrogen Monoxide, answer questions at the end, and submit to drop box.
- Sept. 19 **Basic Toxicological Concepts II - Robson.** Read chapter 4 and chapter 6 of *The Dose Makes the Poison*. Remember to answer questions related to the chapter and submit to the drop box before class.
- Sept. 26 **Epidemiological Concepts – McWilliams**
Read chapter 10 of *The Dose Makes the Poison*. Read Introduction to Epidemiology. Complete worksheet on major causes of death in the United States and submit to drop box.
- Oct. 3 **First hour: Exam 1 – Turn in Bibliography for Paper 1**
Second hour: Group work on Student Presentations
- Oct. 10 **Mutagenesis, Carcinogenesis and Reproductive Toxicity & Regulating Toxins - Robson.** Read pages 36-45 from Chapter 3, and Chapters 7, 8, and 9 of Ottoboni, *The Dose Makes the Poison*. Remember to answer questions related to the chapter and submit to the drop box before class. Read Introduction to the 11th report on Carcinogens. Choose *one* carcinogen [known or reasonably anticipated] to report on in class. Pick one that begins with the same first letter as your last name. Read (but don't summarize): The Story of the Laws Behind the Labels, Parts I, II, and III; The 'Poison Squad' and the Advent of Food and Drug Regulation; Sugar, a Cautionary Tale; and, The Apple Bites Back.
- Oct. 17 **Student Presentations – Paper 1**
- Oct. 24 **Perception of Risks - Hallman.** Read and summarize: Brewer: *Goals for Risk Communication*; Philley, *Acceptable Risks?* Read (but don't summarize): Chapter 11 of *The Dose Makes the Poison*;
- Oct. 31 **Warnings – Hallman.** Read and summarize: Wilde: *Intervention by Education*; Roser: *Is it a Drink? No, it's Cleaning Fluid*; Collins, *Why Do We Ignore Safety and Warning Signs – Sometimes With Tragic Results?*
- *Remember to bring in warning labels*
- Nov. 7 **Communicating about Risks with the Public - Hallman.** Read and summarize: Lindheim, *Distress Signals*; Weinstein, *Optimistic Biases about Personal Risks*.
- Nov. 14 **Communicating about Risks with the Public II - Hallman.** Read and summarize: Ropeik, *Bounded Rationality*.
- Nov. 28 **First hour: Exam 2**
- Dec. 5 **Risks and the Media – Hallman** Read and summarize: *The Different Worlds of Scientists and Reporters*; Sandman, *Telling Reporters about Risk*; Adams, *The Role of Media Relations in Risk Communication*; Weigold, *Communicating Science*.
- Dec. 12 **Student Presentations – Paper 2 - Robson**