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Topics in Health and Environment: Risk, Health, and Safety

3 Credits

Fall 2024

Tuesday 10:20 – 1:20

Blake 131

CONTACT INFORMATION:

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COURSE WEBSITE, RESOURCES AND MATERIALS:

- Please see the online course resources on Canvas. <https://canvas.rutgers.edu/>
- Text: The Dose Makes the Poison: A Plain-Language Guide to Toxicology, 3rd Edition ISBN-10: 0470381124

COURSE DESCRIPTION:

In this course, we will explore scientific, cultural, and perceptual aspects of environmental risk issues. We will discuss toxicological and epidemiological concepts, psychological aspects of risk perception 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.

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. You should also be able to put together a practical plan to communicate about those risks with the public.

LEARNING GOALS:

Course Learning Objectives

This course meets 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/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/problem 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

ASSIGNMENTS/RESPONSIBILITIES, GRADING & ASSESSMENT:

Class Assignments

The emphasis in this class is on critical thinking about risk issues. What students gain from the course depends on thoughtful discussion, and active participation by the members of the seminar. That, in turn, requires that you have read, and thought about the chapters, articles, and videos assigned, and have completed the readings and assignments prior to class.

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 Canvas Submit Assignment function. You should bring your answers 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 the articles will be available in electronic form through Canvas.

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.

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

ACCOMODATIONS FOR STUDENTS WITH DISABILITIES

Please follow the procedures outlined at <https://ods.rutgers.edu/students/getting-registered>. Full policies and procedures are at <https://ods.rutgers.edu/>

Enter additional text here if you wish

ABSENCE POLICY

Class meets Tuesdays from 10:20 to 1:20 in Blake 131. Please arrive on time and silence your cell phones and put them away for the duration of class time. Students are expected to attend all classes. However, if you feel unwell, please DO NOT come to class. 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>. Please also contact your professors directly to let them know of your absence.

COURSE SCHEDULE:

See Attached

FINAL EXAM/PAPER DATE AND TIME

Online Final exam Schedule: <http://finalexams.rutgers.edu/>

ACADEMIC INTEGRITY

The university's policy on Academic Integrity is available at

<https://academicintegrity.rutgers.edu/sites/default/files/pdfs/current.pdf>. The principles of academic integrity require that a student:

- properly acknowledge and cite all use of the ideas, results, or words of others.
- properly acknowledge all contributors to a given piece of work.
- make sure that all work submitted as his or her own in a course or other academic activity is produced without the aid of impermissible materials or impermissible collaboration.
- obtain all data or results by ethical means and report them accurately without suppressing any results inconsistent with his or her interpretation or conclusions.
- treat all other students in an ethical manner, respecting their integrity and right to pursue their educational goals without interference. This requires that a student neither facilitate academic dishonesty by others nor obstruct their academic progress.
- uphold the canons of the ethical or professional code of the profession for which he or she is preparing.

Adherence to these principles is necessary in order to ensure that

- everyone is given proper credit for his or her ideas, words, results, and other scholarly accomplishments.
- all student work is fairly evaluated, and no student has an inappropriate advantage over others.
- the academic and ethical development of all students is fostered.
- the reputation of the University for integrity in its teaching, research, and scholarship is maintained and enhanced.

Failure to uphold these principles of academic integrity threatens both the reputation of the University and the value of the degrees awarded to its students. Every member of the University community therefore bears a responsibility for ensuring that the highest standards of academic integrity are upheld. Enter optional text or delete. Copy and paste elsewhere if you wish to edit. Here is an example from a syllabus: *Cheating on tests or plagiarizing materials in your papers deprives you of the educational benefits of preparing these materials appropriately. It is personally dishonest to cheat on a test or to hand in a paper based on unacknowledged words or ideas that someone else originated. It is also unfair, since it gives you an undeserved advantage over your fellow students who are graded on the basis of their own work. In this class we will take cheating very seriously. All suspected cases of cheating and plagiarism will be automatically referred to the Office of Judicial Affairs, and we will recommend penalties appropriate to the gravity of the infraction. To help protect you, and future students, from plagiarism, we require all papers to be submitted through Turnitin.com.*

SEBS DEI STATEMENT

Click here to add your DEI statement. A DEI statement **MUST** be included in ALL course syllabi. Instructors should discuss their DEI Statement with their students on the first day of class. The components of a DEI statement typically include ideas such as:

- Respect for classmates and their identities
- Diversity of students' experiences and ideas
- The historical context and possible biases of the subject area
- Information regarding who to contact in the event of an issue, such as the Office of Academic Programs and/or <http://inclusion.rutgers.edu/report-bias-incident/>

Faculty are free to choose the wording of their DEI Statement. More information and examples can be found here: <https://sebscourseapproval.rutgers.edu/policies/syllabus-dei-statements-policy/>

The Rutgers University Student Assembly urges that the following resource information be included at the end of every syllabus. Edit or delete as you wish:

STUDENT WELLNESS SERVICES

Counseling, ADAP & Psychiatric Services (CAPS)

(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901 / www.rhscaps.rutgers.edu/

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

Violence Prevention & Victim Assistance (VPVA)

(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / www.vpva.rutgers.edu/

The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To

reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

Disability Services

(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 / <https://ods.rutgers.edu/>

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: <https://ods.rutgers.edu/students/documentation-guidelines>. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: <https://webapps.rutgers.edu/student-ods/forms/registration>.

DoSomething button through Rutgers Dean of Students office:

<http://health.rutgers.edu/do-something-to-help/>

Wellness Coaching through Rutgers HOPE:

<http://health.rutgers.edu/education/hope/wellness-coaching/>

Self-Help Apps found on the Rutgers Student Health website:

<http://health.rutgers.edu/education/self-help/self-help-apps/>

NJ Hopeline - (1-855-654-6735) | **National Suicide Hotline** - (1-800-273-8255)

BASIC NEEDS RESOURCES

Any student who has difficulty affording groceries or accessing sufficient food, or who lacks a safe and stable place to live, is urged to contact the Rutgers Student Food Pantry and/or the Dean of Students (details below). Furthermore, please notify the professor if you are comfortable doing so, as they may be able to provide additional support.

Rutgers Student Food Pantry

848-932-5500 / College Ave Student Center, Room 115 (126 College Ave) /

<http://ruoffcampus.rutgers.edu/food/>

Check their website for hours and additional locations. The Rutgers Student Food Pantry is dedicated to helping all Rutgers students in need of food, no questions asked. Students will be provided with groceries that typically last about one week.

Dean of Students Office

848-932-2300 / 88 College Avenue, New Brunswick, NJ 08901 / <https://deanofstudents.rutgers.edu/>

Mon-Fri, 8:30am-5:00pm

The Dean of Students Office at Rutgers University-New Brunswick provides solutions, services, and support to help students navigate Rutgers University. The Office serves as a student support network by providing

advocacy, problem resolution, and critical incident intervention for those times when additional assistance is needed. Please call to schedule an appointment to meet with a representative from the Dean's office.



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Department of Plant Biology**

Note: Readings and Assignments are DUE PRIOR to the Date Listed.

- Sept. 3 **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. 10 **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 assignment before class. Read FAQ – *Dihydrogen Monoxide*, answer questions at the end, and submit assignment before class. Read *Effects of gaseous and solid constituents of air pollution on endothelial function*.
- Sept. 17 **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 assignment before class. Download a copy of the [EPA's Exposure Factors Handbook](#). Pick one food and write a paragraph describing the variations in exposure that you find. Submit the paragraph before class
- Sept. 24 **Epidemiological Concepts – Robson.** Read chapter 10 of *The Dose Makes the Poison*. Read Introduction to Epidemiology. Complete worksheet on major causes of death in the United States. Read *The Burden of Disease and the Changing Task of Medicine*. Read: *Universal Health Coverage: An Opportunity To Address Antimicrobial Resistance?* Read: *Surveillance for Coccidioidomycosis*. Read: *Racial/Ethnic Disparities in HIV Preexposure Prophylaxis Among Men Who Have Sex with Men*.
- Oct. 1 **Mutagens, Carcinogens, & 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 chapters and submit before class. Write a brief summary of *Intuitive Toxicology* and submit before class. Read Introduction (pages 3-10) to the 12th 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): *How cancer can kill you*, *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*; *Lye Made Biscuits*; *The Apple Bites Back*; *Asbestos, Cancer Prevention and Control*; *Polish 40 Year Study*, *The Town Manville Built*.
- Oct. 8 **First hour: Exam 1**
Second hour: Group work on Student Presentations
Turn in preliminary list of references for Paper 1 before class (use APA formatting: https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/index.html)



Oct. 15 **Student Presentations – Paper 1**

Oct. 22 **Perception of Risks - Hallman.** Read and summarize: Brewer: *Goals for Risk Communication*; Philley, *Acceptable Risks?* Submit assignment. Read (but don't summarize): Chapter 11 of *The Dose Makes the Poison*.

Oct. 29 **Communicating about Risks - Hallman.** Read and summarize: Ropeik, *Bounded Rationality*. Lindheim, *Distress Signals*; Weinstein, *Optimistic Biases about Personal Risks*. Submit assignment before class.

Nov. 5 **Misinformation** - Read and summarize: West and Bergstrom, *Misinformation in and about science*. Scheufele *Science audiences, misinformation, and fake news*. Submit assignment before class. **Please Vote Today.**

Nov. 12 **Risks and the Media.** 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*. Submit assignment before class.

Nov. 19 **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?*; Wilde *Intervention by education. FDA Proposes Graphic Warning Labels*.
Remember to bring in warning labels Submit assignment before class.

Nov. 26 Thursday Classes

Dec. 3 **Student Presentations – Paper 2** - Submit paper and all supporting materials to Canvas.

Dec. 10 **Exam 2 - Complete the Effort Reporting worksheet and submit under Week 14**