

June 8, 2019 Draft

**Advanced Academic Programs
Zanvyl Krieger School of Arts and Sciences
Johns Hopkins University
AS.420.690.81
Environmental Health**

Course Syllabus

Contact Information for Instructor

Instructor: Paul Lewis

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Email Address: plewis30@jhu.edu

Office Hours: To be arranged via communication with instructor

Course Description:

The environment plays an important role affecting public health. This course will explore major topics in the area of environmental health, examining sources, routes, and health outcomes associated with exposure to microbial, chemical and physical agents in the environment. This course will cover how such agents affect human disease at the individual, community, and population level.

Prerequisite: General biology; environmental science

Course Goals and Learning Objectives

When you complete the course successfully, you will be able to

1. Identify the major environmental exposures (i.e. chemical, microbial, physical) that cause effects on human health.
2. Identify the major sources of their exposures, including their methods of detection and their pathways to humans.
3. Characterize the range of environmental and occupational health challenges associated with these agents
4. Describe the tools that are used to analyze and assess health impacts of environmental exposures (i.e.. toxicology, exposure assessment, risk assessment, epidemiology).
5. Explain existing regulatory framework and policy options for managing environmental exposures and corresponding environmental health impacts.
6. Synthesize and communicate (verbal and in writing) environmental health principles in development of policy recommendations to address environmental health challenges

Course Materials

1. Required: Environmental Health: From Global to Local. Third Edition. Howard Frumkin (Jossey-Bass).

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Specific Technology Requirements for Course

- Access to a computer
- Updated JAVA. Adobe Flash Player system plug-in.
- Access to Internet
- Head phone/microphone set
- Browser: download and install Chrome and Firefox for PCs. Safari for Mac computers.

Technological Skills Requirements for Course

- Ability to work with computers
- Navigate in and use Blackboard; the Blackboard Student Orientation course on your “My Institution” page
- Create and save MS Word documents; see [MS Word training and tutorials](#) for PC users (all versions); [Word Help](#) for Mac users
- Send e-mails
- Upload and download files
- Use browsers and Internet
- Participate on the Discussion Board and chat sessions
- Use the Internet for research

Technical Support for Online Learners

Help Desk: 24/7 phone line: **855-593-0086**

Assignments and Grading Policy

Assignments	Point value x Number of such assignments in the course	Points Possible	= % of total grade
Assignment 1: Weekly discussion via discussion prompts prompt review of paper	7 x 13	90	
Assignment 2: Case studies Research proposal (outline and literature)	20 x 2	40	
Assignment 3: Term paper Research proposal	20 x 1	20	
Annotated bibliography	20 X 1	20	
FLOWCHART OF RESEARCH PLAN	20 X 1	20	
Final paper	300 X1	300	
Assignment 4: Presentation of paper	150 x 1	150	
Assignment 5: Final exam (week 15)	200 x 1	200	
Total Points for the course			

Course Grading

Letter Grade	Percentage
A+	98% to 100%
A	94% and less than 98%
A-	90% and less than 94%
B+	88% and less than 90%
B	84% and less than 88%
B-	80% and less than 84%
C	70% and less than 80%
F	0% and less than 70%

This course will follow the [Advanced Academic Programs Grading Policies](#).

Assignment Feedback

The instructor will aim to return assignments to you within 5-7 days following the due date, depending on the length of the assignment. You will receive feedback in the My Grades area of the course which can be accessed via the navigation menu.

Course Schedule and Readings

Course Structure

Lectures

Each week there will be asynchronous course content to be reviewed/listened based on the environmental health topic for learning. This may also include PowerPoint slides, or other material to enhance learning objectives. In addition, there may be a few questions to assess your learning of the course content material.

Weekly Discussions

Each week, there will be weekly discussion prompts providing students the opportunity for further thought and reinforcement of topics discussed. Students are to provide their responses by Wednesday 11:59 EST and provide respond to at least 2 student responses by Friday 11:59 EST.

Case Studies – discussion board activity

For several classes, there will be a case study/research paper to review. The papers represent timely thought providing environmental health issues aligning with the topic for the week. Many of the papers are long. While you are not required to read the entire paper, focus on the abstract. You may also find the introduction useful to gain an understanding of the topic. After reviewing the case presentation, provide your responses addressing the following questions:

- what are the strengths of the study/article;
- what are the limitations of the study/article;

- what additional research questions should be pursued;
- what conclusions can be drawn for environmental health practice intervention.

Each student is to provide responses to two cases studies. All students respond to the case study for week 2 and one case study of their choice for the remainder of the semester.

Research paper

Students will have the opportunity to investigate an environmental health issue of their choice. The topic can be further exploring a topic discussed in class or one that intrigues you. The paper and presentation will provide each student the experience to explore a topic of their interest and present their findings to decision makers (see instruction on paper below). Seek feedback from the instructor as needed to refine your topic. The research paper will provide the student the opportunity to provide analysis and recommendations/conclusions. A review of the available literature through websites, publications, interviews or other source should be utilized in developing the paper.

Outline of paper

Identify a challenging environmental health topic. Focus on scientific research not unsubstantiated opinions or hyperbole. In preparing your paper, consider the following:

Introduce the subject, discuss the current issues/research, and present any controversies.

- The target audience for this paper is an environmental health scientist. You are preparing a paper (and a subsequent briefing) addressing a challenging and complicated environmental health issue and recommendations for decision-makers.
- Consider the stakeholders – government, industry, environmental community, etc.
- What are your recommendations to address the problem.

Format of paper:

- At least 12-15 pages, 1 inch margins, double spaced, Times Roman 12 font
- Include a cover page with a title, your name, and date (not part of the paper requirements)
- Tables and figures can be included.

Literature

- A review of the available literature through websites, publications, interviews or other sources should be utilized in developing the paper.
- Use and cite at least 10 references (at least 6 from the peer-review literature/journals)

Development of paper

As development of the research paper is a semester long project, step-wise progression and feedback are important to assist the student in preparing their paper. The following milestones for paper development are listed below

Presentation

Each presentation should last approximately 10 minutes utilizing necessary visuals (e.g. slides) and a 1 page (same page requirements as above). The summary should be written in plain English, geared to an audience not trained in environmental health.

Research project schedule

Week 3 – identify research proposal and submit project outline. The abstract should be 200 words or less providing an overall outline of the topic to be studied.

Week 6 - provide annotated bibliography. This should entail include at least 6 citations (with 3 peer-review articles)

FLOWCHART OF RESEARCH PLAN

Week X – Peer review draft

Week X – Final draft for Turn-it-in

Week 13 – paper due

Week 14 – presentation due

Exams

I will administer a final exam. The exam will be composed of short answer and essay questions. You can use any reference materials (e.g. textbook, articles discussed in class, etc.) to prepare your answers. The exam must be completed independently, on your own. Make-up exam will not be given unless arranged *in advance*.

Course Schedule and Readings

Tentative Course Schedule and Readings: The instructor reserves the right to modify by adding or deleting learning materials, including readings, to help learners achieve the goals of the course. You will be informed through Blackboard Announcements if there is a change.

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Each week starts on a Sunday and ends on a Saturday.

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Topic	Readings	Weekly Activities
Environmental health foundations		
Week 1: Course overview; Introduction to environmental health/Principles of environmental health	<p>Frumkin. Chapter 1</p> <p>Video: Healthy Habit https://www.youtube.com/watch?v=UfmR0LPfBX8</p> <p>No review required</p>	1: Due by Saturday 11:50 PM ET
Week 2: Environmental Exposure Assessment	<p>Frumkin. Chapter 8.</p> <p>Case study 1: Ginsburg et al. (2016). Approaches to Children's Exposure Assessment: Case Study with Diethylhexylphthalate (DEHP). International Journal of Environmental Research and Public Health.</p>	
Week 3: Environmental Toxicology*	<p>Fumkin Chapter 6.</p> <p>Case study 2: Vandenberg et al. (2012). Hormones and endocrine-disrupting chemicals: low-dose effects and nonmonotonic dose responses. Endocr Rev. 2012 Jun;33(3):378-455. http://www.ncbi.nlm.nih.gov/pubmed/22419778</p> <p>EPA's Endocrine Disruptor Screening Program http://www.epa.gov/endo/</p> <p>PROJECT OUTLINE DUE (SEE RESEARCH PROJECT SCHEDULE ABOVE)</p>	
Week 4: Environmental and Occupational Epidemiology	<p>Frumkin. Chapter 4.</p> <p>Case study 3: Miralles-Marco and Harrad (2015). Perfluorooctane sulfonate: a review of human exposure, biomonitoring and the environmental forensics utility of its chirality and isomer distribution. Environment International. Environ Int. 2015 Apr;77:148-59.</p>	

<p>Week 5: Environmental health risk assessment</p>	<p>Frumkin et al. Chapter 27.</p> <p>Case study 4: Brown et. 2016. Toward the definition of specific protection goals for the environmental risk assessment of chemicals: A perspective on environmental regulation in Europe. Integrated Environmental Assessment and Management. Vol 13, issue 1</p>	
Environmental Stressors		
<p>Week 6: Global Climate Change</p>	<p>Frumkin et al. Chapter 12.</p> <p>Case study 5: Applebaum et al. 2016. An Overview of Occupational Risks From Climate Change. <u>Current Environmental Health Reports</u>. March 2016, Volume 3, <u>Issue 1</u>, pp 13–22</p> <p>LITERATURE OUTLINE DUE (SEE RESEARCH PROJECT OUTLINE)</p>	
<p>Week 7: Water and health</p>	<p>Frumkin et al. Chapter 16.</p> <p>Case study 6: Fewtrell et al. (2005). Water, sanitation, and hygiene interventions to reduce diarrhea in less developed countries: a systematic review and meta-analysis. <i>The Lancet</i>. Volume 5, Issue 1.</p> <p>Optional Fallik D. 2013. This New Study Found More Drugs in Our Drinking Water Than Anybody Knew. <i>New Republic</i>. December 11, 2013. http://www.newrepublic.com/article/115883/drugs-drinking-water-new-epa-study-finds-more-we-knew</p>	
<p>Week 8: Chemical risks from a pesticide perspective</p>	<p>Frumkin et al. Chapter 18.</p> <p>Case study 7:</p>	

	<p>Raanan et al (2017). Elemental Sulfur Use and Associations with Pediatric Lung Function and Respiratory Symptoms in an Agricultural Community (California, USA). <i>Environmental Health Perspectives</i>. Volume 125.</p>	
Week 9: Food safety	<p>Frumkin et al. Chapter 19.</p> <p>Case study 8: Casey et al (2016). Industrial food animal production and community health. <i>Current Environmental Health Reports</i>. 2015;2(3):259-71.</p>	
Week 10: Air quality	<p>Frumkin et al. Chapter 13.</p> <p>Case study 9: Pope and Dockery (2016). Health effects of fine particulate air pollution: lines that connect. <i>Journal Air Waste Management Association</i>. Jun;56(6):709-42.</p>	
Week 11: Occupational health	<p>Frumkin et al. Chapter 21</p> <p>Case study 10: Liebler and Perry. 2017. Self-reported occupational injuries among industrial beef slaughterhouse workers in the Midwestern United States. <i>J Occup Environ Hyg</i>. 2017 Jan;14(1):23-30.</p>	
Week 12: Solid and hazardous waste	<p>Frumkin et al. Chapters 17</p> <p>Supplemental reading Jackson, R. 2014. The Environmental Costs and Benefits of Fracking. <i>Annual Review of Environment and Resources</i>. Vol. 39: 327-362. http://www.annualreviews.org/doi/abs/10.1146/annurev-</p>	

	environ-031113-144051	
Environmental health in practice		
Week 13: Environmental justice/ environmental ethics	<p>Frumkin et al. Chapters 10 and 11.</p> <p>Supplemental reading (no assignment required)</p> <p>Gutierrez and LePrevost (2016). Climate Justice in Rural Southeastern United States: A Review of Climate Change Impacts and Effects on Human Health. <i>International Journal and Environmental Research and Public Health</i>.</p> <p>RESEARCH PAPER DUE (SEE RESEARCH PROJECT OUTLINE)</p>	
Week 14: Environmental communication	<p>Frumkin Chapter 28.</p> <p>No journals to review</p> <p>Research presentation due (see research presentation outline)</p>	
Week 15: Final Exam	No reading	

Course Polices

Participation Requirements:

You are expected to log into Blackboard regularly throughout the week - a daily check-in is recommended. It is your responsibility to read all announcements and discussion postings within your assigned forums. You should revisit the discussion multiple times over the week to contribute to the dialogue.

Network Etiquette (i.e. "Netiquette")

In this course, online discussion will be primarily take place in our online discussion board. In all online communication, it's important to follow proper rules of netiquette. What is netiquette? Simply stated, it's network etiquette -- that is, the etiquette of cyberspace. And "etiquette" means the social and culture norms of communicating with others in a proper and respectful way. In other words, netiquette is a set of rules for behaving and interacting properly online.

The Netiquette “Core Rules” linked below are a set of general guidelines for cyberspace behavior. They probably won't cover all situations, but they should give you some basic principles to use in communicating online.

For Netiquette Core Rules visit this web page: [Ground Rules for Online Discussions](#).

(CC)

Document Submission Policies

Please post your assignments in the assignment tool within the Lessons folder. If submitting documents to an assignment or forum, please specify the assignment name in the discussion thread and/or the document title. When creating files, include your name and the name of the assignment in the file title. Also, please be sure to only include one period in file names. The period should be between the file name and the extension. For example: msmith_assignment1.doc

Citation Format: APA

The instructor uses the [SafeAssign](#) tool for written assignments. Please review the JHU Ethics Statement below prior to submission.

Late Submission

You are expected to contact your instructor in advance if you think you cannot meet an assignment deadline. However, if an assignment is late and prior arrangements have not been made with the instructor, the assignment score will be zero.

Discussion Board Policies

You must submit your initial post by Wednesday 11:59 PM. You must respond to two of your peers' posts between Thursday and Saturday 11:59 PM. Late discussion postings will not get any credit.

Changes to the Course

Frequently, you will find new announcements posted in the Announcements, which contain information about current course activities that you are working on and any changes to the course, which may include changes to readings or assignments. Please check announcements every time that you log into Blackboard.

Communicating with Others

The majority of communication will take place within the Discussion forums. When you have a question about an assignment or a question about the course, please post your question in the course's “Syllabus & Assignment Question” forum. Please send questions about your grade to Blackboard Email. Questions on the Discussion Board and email messages will be given response within 24-48 hours.

Contacting the Instructor

Click on the Blackboard Email tab on the main menu. Click on Create Message > Highlight the instructor's name and the > arrow which will bring the instructor's name to the recipient column. Write the Subject in the Subject Line> Write the Message> click submit. I will check email every day. This is the fastest way to contact me.

You can also send messages to my jhu.edu address. Replies to messages sent to my jhu.edu address will be sent to you via your JHU email account.

Requirements for Sending E-mail Messages

When you send an e-mail message to the instructor or to another participant in the course, please observe the following guidelines:

- Include the title of the course in the subject field (e.g., JHU Renaissance Literature).
- Keep messages concise, and check spelling and grammar.
- Send longer messages as attachments.
- Sign your full name (the sender's email is not always obvious).

General

This course adheres to all University policies described in the academic catalog. Please pay close attention to the following policies:

Students with Disabilities

Johns Hopkins University is committed to providing reasonable and appropriate accommodations to students with disabilities. Students with documented disabilities should contact the coordinator listed on the [Disability Accommodations](#) page. Further information and a link to the Student Request for Accommodation form can also be found on the [Disability Accommodations](#) page.

Ethics & Plagiarism

JHU Ethics Statement: The strength of the university depends on academic and personal integrity. In this course, you must be honest and truthful. Ethical violations include cheating on exams, plagiarism, reuse of assignments, improper use of the Internet and electronic devices, unauthorized collaboration, alteration of graded assignments, forgery and falsification, lying, facilitating academic dishonesty, and unfair competition. Report any violations you witness to the instructor. Read and adhere to JHU's [Notice on Plagiarism](#).

Dropping the Course

You are responsible for understanding the university's policies and procedures regarding withdrawing from courses found in the current catalog. You should be aware of the current deadlines according to the [Academic Calendar](#).

Getting Help

You have a variety of methods to get help on Blackboard. Please consult the resource listed in the "Blackboard Help" link for important information. **If you encounter technical difficulty in completing or submitting any online assessment, please immediately contact the designated help desk listed on the [AAP online support page](#).** Also, contact your instructor at the email address listed in the syllabus.

Copyright Policy

All course materials are the property of JHU and are to be used for the student's individual academic purpose only. Any dissemination, copying, reproducing, modification, displaying, or transmitting of any course material content for any other purpose is prohibited, will be considered misconduct under the [JHU Copyright Compliance Policy](#), and may be cause for disciplinary action. In addition, encouraging academic dishonesty or cheating by distributing information about course materials or assignments which would give an unfair advantage to others may violate [AAP's Code of Conduct and the University's Student Conduct Code](#). Specifically, recordings, course materials, and lecture notes may not be exchanged or distributed for commercial purposes, for compensation, or for any purpose other than use by students enrolled in the class. Other distributions of such materials by students may be deemed to violate the above University policies and be subject to disciplinary action.

[Code of Conduct](#)

To better support all students, the Johns Hopkins University non-academic Student Conduct Code has been integrated and updated to include all divisions of the University. In addition, it is important to note that all AAP students are still accountable for the Code of Conduct for Advanced Academic Programs in the link below: [Graduate Academic Misconduct Policy](#)

Title IX

Confidentiality and Mandatory Reporting

As an instructor, one of my responsibilities is to help create a safe and inclusive learning environment on our campus. I also have mandatory reporting responsibilities related to my role as a Responsible Employee under the Sexual Misconduct Policy & Procedures (which prohibits sexual harassment, sexual assault, relationship violence and stalking), as well as the General Anti-Harassment Policy (which prohibits all types of protected status based discrimination and harassment). It is my goal that you feel able to share information related to your life experiences in classroom discussions, in your written work, and in our one-on-one meetings. I will seek to keep information you share private to the greatest extent possible. However, I am required to share information that I learn of regarding sexual misconduct, as well as protected status based harassment and discrimination, with the Office of Institutional Equity (OIE). For a list of individuals/offices who can speak with you confidentially, please see Appendix B of the [JHU Sexual Misconduct Policies and Laws](#).

For more information on both policies mentioned above, please see: [JHU Relevant Policies, Codes, Statements and Principles](#). Please also note that certain faculty and other University community members also have a duty as a designated Campus Safety Authority under the Clery Act to notify campus security of certain crimes, as well as a duty under State law and University policy to report suspected child abuse and/or neglect.

Time Management

It is expected that you look ahead to schedule your time. Plan to complete coursework across several days of the week rather than all in one day. Some assignments require that you work on them for multiple weeks. Be sure to review the assignment directions at the beginning of the course so that you can plan your time accordingly. Please seek help before becoming frustrated and spending a significant amount of time trying to resolve an issue on your own.