The Ohio State University College of Public Health
Fundamentals of Environmental Health Risk Assessment
PUBHEHS 3320
3 credits - Spring 2026
Online

Instructor: Karen C. Dannemiller PhD
Associate Professor, Course Director
Department of Civil, Environmental and Geodetic Engineering
Division of Environmental Health Sciences
Email: Contact me via Canvas inbox (see Communication section below)
Office Hours: Held weekly, see times on Syllabus page online
Office Location: Hitchcock 491B
Phone: 614-292-4031

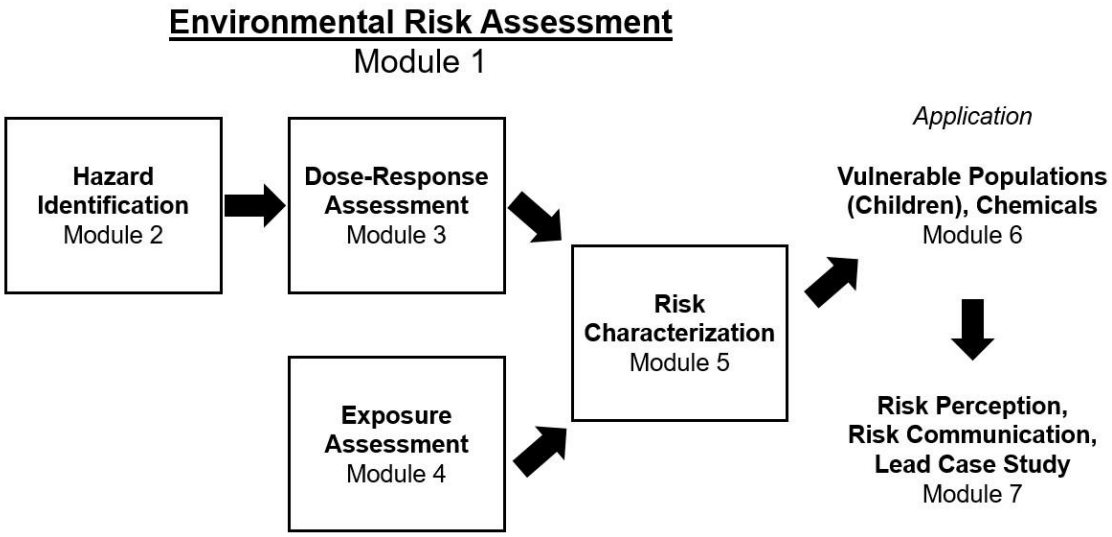
DEGREE INSTITUTION AND LOCATION	DEGREE	COMPLETION DATE	FIELD OF STUDY
Brown University, Providence, RI	ScB	05/2009	Chemical & Biochemical Engineering
Yale University, New Haven, CT	MS	12/2011	Chemical & Environmental Engineering
Yale University, New Haven, CT	MPhil	05/2012	Chemical & Environmental Engineering
Yale University, New Haven, CT	PhD	12/2014	Chemical & Environmental Engineering
Yale University, New Haven, CT	Postdoctoral Fellow	12/2015	Chemical & Environmental Engineering

TAs: Ayomipo (Ayo) Adeniji, Doctoral Student
Environmental Science Graduate Program
Email: adeniji.9@buckeyemail.osu.edu or Contact via Canvas inbox

Office Hours: Held weekly, see times on Syllabus page online

Course Learning Objectives: Upon completion of this course, students will be able to:

1. Summarize the role of risk assessment in public health policy and distinguish it from risk management.
2. Describe the fundamental components of, and procedures for, conducting a risk assessment.
3. Analyze sources of uncertainty in risk assessments and explain the implications of that uncertainty for regulatory and precautionary action.
4. Deconstruct and evaluate a risk assessment.
5. Apply risk assessment concepts to assess health risks in a real-life scenario.
6. Demonstrate effective communication techniques for environmental health.



TA responsibilities: The TA assigned to the course will hold regular office hours for any students who need help with class material. This course also has a grader. The TA may assist with grading some assignments, and the professor will have final say on final grades. Any questions regarding grading can be directed to the TA first and then the professor.

Communication and Office Hours: I primarily communicate important information to you through Announcements, so make sure that every time you log into the classroom you check the Announcements tab to stay on top of the latest developments in the course. Students are required to customize their Canvas notifications preferences to receive immediate (ASAP) notifications of messages and announcements through the third-party provider of choice (e.g. email, SMS/text). Students are required to log into the course regularly (more than twice a week) and check Announcements and the Canvas Inbox immediately upon logging in to stay on top of developments in the course as they occur. This document tells you how to adjust your notification preferences: https://community.canvaslms.com/docs/doc-10624.

Prerequisites: None; however, if you have not taken many science and/or math classes, you may find some of the vocabulary unfamiliar/challenging. You may need to spend extra time reviewing material included in Module 0.

Class Format: This online course will consist of readings, recorded lectures, group projects, discussion boards and exercises. Please note: online does not mean self-study. Students are expected to log-in regularly to the course site and interact with your peers through the class discussion boards and on group assignments. Please note that the course is structured in a way where you need to complete the tasks in order. For instance, you will need to complete readings and lectures before the homework is available to you. Please plan accordingly.

Time requirement: Based on University bylaws, a 3 credit hour course requires on average 9 hours per week of effort to obtain a grade of "C" in the course. Therefore, in this class you can expect to spend ***a minimum of 9 hours per week of effort to pass***. Each Module has time requirements that are specified on the overview page. Ensure that you pace yourself so that you can complete all material before the deadline. Note that some modules have group work that might involve intermediate deadlines.

Late policy: It is strongly encouraged that you plan to complete material in advance of the deadline. Students who are most successful in the class space out the material to ensure that there is sufficient time to absorb it. This also helps guard against the impact of unforeseen circumstances. Because this course is self-paced, there will be very few exceptions to the late policy. Managing your schedule and time is an important skill that will serve you well both in this course and in your future career. Late policy exceptions will only be granted under exceptional circumstances and extended emergencies. Delaying starting the material until a few hours prior to the deadline and then having insufficient time to complete it will not result in an extension. Some modules also have group work that needs to be completed by a certain deadline for your group to move forward. It is also recommended that you turn in materials on time to ensure that you stay on track with the course. Keep in mind that each module represents many hours of effort, which are clearly outline in the Roadmap of the Overview page of each module. **All materials** will be subject to the late policy. Points will be deducted at a rate of 5% off per day late down to a minimum of 70% credit for the assignment.

Course Description: Risk assessment is the scientific process used to establish human health-protective environmental regulations in the U.S. This course has been designed to provide students with a working knowledge of human health risk assessment. The course will provide an orientation to the fundamental components of risk assessment including hazard identification, toxicology/dose-response, exposure assessment, and risk characterization. Throughout the semester, students will apply concepts of risk assessment to analyze authentic case studies, culminating in a simulation based on a real-world environmental health risk scenario. Students will be asked to research, defend, and justify a position based on the methodology, principles, and concepts presented in the course.

The Environmental Health Sciences (EHS) model (figure 1), by Keil and Bisesi, provides a framework for organizing these complex processes and enhancing the learning experience of environmental health science(s). The EHS Module is found at the end of this syllabus document.

Expectations of Students: This is a completely asynchronous online course (i.e., there are no times at which we all gather together in person or virtually). The asynchronous design allows for more flexibility, but it also puts ***more responsibility on you to effectively manage your time and learning***. As in a 'standard' face-to-face course, you are expected to keep up with the material and complete assignments throughout the semester. You should plan to spend a minimum of 9 hours each week on this course to pass and to log-in multiple times per week to the site on Carmen. These expectations are further discussed later in other sections of this syllabus.

Suggested Text and Readings: Torres, Jose A and Bobst, Sol, Editors. *Toxicological Risk Assessment for Beginners.* Springer. 2015**. Chapter 1 required reading! Available on Canvas**

Available as FREE downloadable, printable e-Book via University Libraries: Click **Books and More**, **OhioLINK Catalog** and enter the text title in the text box. Under **Online Access**, click **Connect to resource OhioLINK.** You may also purchase this text at: Barnes & Noble - The OSU Bookstore.

Additional required reading assignments (journal abstracts and articles, government reports, and excerpts from books) and videos will be posted on Canvas by module.

Use of AI software: Given the learning goals of this class, in this course, students are welcome to explore innovative tools and technologies for data analysis or presentation design, including generative artificial intelligence (GenAI). Students are permitted to use GenAI tools for most course assignments, except for producing direct written text, calculating answers to equation questions, or providing answers to multiple choice, fill-in-the-blank, or matching questions. Your written assignments, including your discussion posts, in-class submissions, and final design project, should be your own original work.

GenAI can be a helpful resource for brainstorming ideas, creating a "reverse outline" from a rough draft, and enhancing productivity. Yet it is essential to approach its use thoughtfully and ethically. If you use GenAI for any of your assignments, please include the following statement with each assignment:

1. Application Used: Specify the GenAI application or tool you used (e.g., Copilot, ChatGPT, Claude AI, Gemini).
2. Intended Purpose: Describe the purpose for which you used GenAI (e.g., idea generation, content creation).
3. Quality of Initial GenAI Output: Evaluate the initial output generated by GenAI. For example, was it accurate, biased, coherent, and/or relevant?
4. Iteration and Refinement: Explain how you revised prompts or adjusted parameters to refine the GenAI output. Did you experiment with different input prompts to improve the output?
5. Incorporation in Completed Assignment: Reflect on how you incorporated the GenAI-generated content into your assignment. How did you edit, adapt, or combine it with other ideas?

While GenAI can be a valuable tool, academic integrity remains paramount. You are responsible for developing and articulating your own ideas, so addressing how GenAI contributed to those ideas (as you would for any sources you use) is centrally important to your learning. Attribute GenAI-generated content with proper citations and avoid plagiarism. Additionally, consider the accuracy of information incorporated in your assignment and the ethical implications of using GenAI in educational contexts. You are responsible for ensuring that the information you submit based on a GenAI query does not contain misinformation, unethical content, or violate intellectual property laws.

If I suspect that you have used GenAI on an assignment for which it is prohibited, I will ask you to explain your process for completing the assignment in question and also ensure that your understanding of the topic is consistent with your response. I retain the right to ask you about your thought process and conduct an interview to ensure that your understanding of the material aligns with what you submitted. I may also randomly select submissions for interviews to ensure that your submissions align with your understanding. Submission of GenAI-generated content as your own original work is considered a violation of Ohio State's Academic Integrity(opens in new window) policy and Code of Student Conduct(opens in new window) because the work is not your own. The unauthorized use of GenAI tools will result in referral to the Committee on Academic Misconduct(opens in new window).

Privacy Considerations: Students should familiarize themselves with the Office of Technology and Digital Innovation's Security and Privacy Statement on Artificial Intelligence(opens in new window) and the Terms of Use for the GenAI service they use, as well as the service's expectations around data privacy and use. Students should not share private or sensitive information about themselves or others with GenAI services. In accordance with the Security and Privacy Statement on Artificial Intelligence, members of the university community should not enter institutional data above the S1, or public, level into unvetted AI tools. See a list of university-approved AI tools(opens in new window), which includes Microsoft Copilot.

Course Structure and Organization: This course is structured into 7 Modules. These modules are centered around key topics in risk assessment. There are several topics included in each module. Details about the modules and topic structure can be seen in the Module and Topic Structure Table (figure 2). Modules last 1-3 weeks, and all start on Saturday and close at 11:59 pm on Friday, with some exceptions to accommodate university breaks, holidays, and the beginning/end of the semester.

Each Module begins with a Module Overview page that will introduce you to the topics and explain to you what you will be doing in the module and how the topics apply to risk assessment. There is also a detailed Module Roadmap for each module, listing the work that needs to be done with the estimated time it will take you to complete the work. **ALL WORK IN THE MODULES MUST BE DONE IN SEQUENTIAL ORDER.** For example, you cannot move on to the readings for the second topic until you have done all of the work for the first topic. When you are done with one item, use the NEXT button at the bottom right-hand corner of the page to progress through the course.

Each Module consists of multiple elements. **Elements must be completed in sequential order.** In each Module you will:

- Complete the readings/viewings
- View the lecture* videos (they are broken down into multiple parts for easier viewing AND Complete the self-checks that accompany each part. Lecture/Self-Checks can be found together in one link in the module called "LECTURES/SELF-CHECK." You have unlimited attempts, but you must score at least 90% to progress to the next topic.
- Work through a Case Study for all modules.
    - Case Studies include both individual as well as group work.
- Complete the Homework assignment for that Module. There is one per module. You have unlimited attempts until the due date and can also view helpful information on the "hints" page.
- Take the Module Review quiz. You have three attempts. Highest score recorded

***** *The division of environmental health science has created a repository of recorded lectures that we will be using for this course. The lecturer you hear in these presentations will vary.*

Module O

In order to help you prepare for the course we have created this **pre-course module.** You have unlimited attempts at the pre-course quiz. This quiz will not count towards your final grade**. You need to attempt the quiz once in order to progress through the modules in this course.** You do not need to earn a certain score - you only need to attempt it once.

This module was created to provide you with resources you can use to review fundamental math and biology concepts you will need to have mastered and be comfortable using and applying in this course.
This module contains:

- Khan lecture materials
    - Videos
    - Review documents
- Pre-course quiz

You should begin by reviewing all of the Khan videos and materials in the module first and then attempt the Pre-course quiz. The videos will be available for the duration of the course and you can access them at any time.

It is strongly suggested that if you do not get 90% on this practice quiz that you go back and review the videos and take the quiz again. I cannot emphasize enough - *if you do not have a solid understanding of the following concepts you will not be successful in this course.*

- Math
  - Geometry
    - conversion between metric units
  - Algebra
    - multiplying and dividing powers with integer exponents
    - rate conversion of dimensional analysis units algebraically
    - converting decimals to fractions
  - Pre-algebra
    - scientific notation
- Biology
  - Basic Biology
    - tissues, organs and organ systems

This is **a required module. You must complete it and meet the conditions to access any other content in this course.**

The major components of the modules are described in more detail below:

Overview pages

Each of the modules will begin with an overview page. This page orients you to the module and explains how the topics in that module connect to the course. It will also walk you through the tasks you will be doing to apply and practice the concepts you learn in the module. Each Overview page has a detailed Roadmap, listing the items in the module, the work you must do, and estimated time to compete the work.

Readings/Viewings

As noted in the Modules and Topic Structure Table (figure 2) at the end of this document, there are multiple topics in each module. For each topic you will read/view the related materials. These materials will provide you with information related to the topic and help prepare you for the lecture/videos that follow.

Lecture/Self-Checks

Concepts taught in this course will be presented to you in recorded lectures that have been divided into short segments, most of which are between 7 to 10 minutes. You will watch the recorded lectures and then answer the self-check questions (directly below the lectures) to check for understanding. You have unlimited attempts at the self-checks, but you **must score at least 90%** in order to progress to the next page in the module. You will receive a "complete" or "incomplete," but these will not be scored as part of your final grade. You can review the lectures as many times as you would like, use your notes or readings to answer the self-check questions. These are entirely open-book/open-note. The goal of these checks is to make sure that you fully understand key concepts covered in the module. If you have questions about any of the content in the lecture

or the self-checks, **do not message me directly but rather post to the Questions, Clarifications, Confusion about Risk Assessment and Environmental Health Science (EHS) discussion board (See details about discussion boards in the next section called "Course Communication.")**

Case Studies

In the field of environmental health science, a great deal of the work you do will be done collaboratively, in teams or in pairs, and it is common to work in teams with others whose expertise, skills, and background differ from your own. We have designed several collaborative case assignments to provide an opportunity for you to experience some of the benefits and challenges of such work. You will start each case by doing some independent work to help you prep for your group work. The group part of the case studies also provides an opportunity for you to see how risk assessment concepts are utilized and applied in the context of real (or simulated) scenarios. See assignment in Canvas for complete instructions and due dates. Please pay close attention to due dates for work in Case studies. Assignment due dates are visible in the course homepage, course Syllabus tab and Canvas calendar.

Homework

Each module contains one homework assignment, created to allow you to practice and apply the material you have learned in the module. The homework is also open book/open note. You have unlimited attempts at the homework assignment (up until the due date) and your highest score will be recorded. There is a total of seven homework exercises that will be assigned during the course. Content and structure will vary for each assignment, and some may require more effort than others. Likewise, some necessitate independent work while others allow collaboration with class members. You are encouraged to work with others, but you need to complete your own work. Expectations will be specified in assignment directions; however, under no circumstances would it be appropriate for students to submit identical papers.

Module Reviews

Modules will close with a Module Review quiz. These Reviews are open book/open note, and you will be allowed three attempts during a specified time. Your highest score will be recorded. These reviews cover material unique to that module, and are cumulative in the sense that understandings for each module build on mastery of material in previous modules. You may not discuss the module reviews with others and the work must be your own.

Course Communication

Announcements

We will be using Canvas for all aspects of course management. Please check the course homepage on Canvas for announcements, clarifications, and other class materials. You are required to subscribe to "Announcements", which will notify you via email of a new posting. It is expected that you read all announcements and staying up to date with the information contained there is your responsibility.

The Pinned Discussion Boards

These boards will be accessible to you throughout the entire semester. It is the best way to communicate with me or other technical support staff if you have questions. The three discussion boards in the module, and their purposes, are as follows:

- **Questions, Clarifications, Confusions about Risk Assessment and EHS discussion board**

Use this discussion board to ask questions about course policies and assignments. Likely, if you have a question about an assignment, or policy, others do as well. I will respond and provide clarification on the discussion board to ensure that everyone has access to the same information. I will not respond to questions about course content or policy via Canvas email. However, if you want to schedule an appointment with me or if you have a question about a grade, please send me a message via Canvas inbox so that we can find a time to meet and discuss. In addition, you are always encouraged to call/visit during office hours or make a separate appointment.

- **Technical Help discussion board**

We have worked hard to get out all of the technological kinks in this course but occasionally issues related to Carmen and technology will occur. If you have general technology questions or questions about how to navigate Carmen, you can post your questions here. You will receive a response from the instructional designer or other college support staff within 24 hours during weekdays and 48 hours on weekends. Alternatively, OSU maintains an IT Service Desk that provides 24-hour support, seven days a week, via email [8help@osu.edu], phone [614-688-HELP (4357)], or self-service chat [https://osuitsm.service-now.com/selfservice/]. To check on the status of an entire system (i.e., Carmen) look at the OCIO System Status page [https://osuitsm.service-now.com/selfservice/system_status.do]

- **Student Lounge: Free-form discussion board**

In a face-to-face class, it's easy to engage in off-topic discussions. When you walk into the classroom you can chat with the person next to you about last night's football game, discuss the latest movies, or talk about your favorite music or upcoming concert. This type of engagement is extracurricular, but it can help build relationships that are advantageous inside the classroom. In an online course it's just as important, if not more so, to have a risk-free environment for sharing and connecting with your classmates. In this class, we have created a discussion board labeled "Student Lounge: Free Form Discussion". This discussion space is entirely for student use. Please remember to be respectful in this forum and maintain proper netiquette. I encourage you to use this space to get to know one another. Since this is your area, I will not monitor or even visit the lounge.

Course Technology and Technical Skills Needed

Necessary Equipment

- Computer: current Mac (OS X) or PC (Windows 7+)
- I-Pad or tablet -or-
- Smart phone
- Calculator
- Chrome Browser – ALL material will work best in Chrome. If you do not have Chrome browser please install https://www.google.com/chrome/browser. Click on DOWNLOAD CHROME. If something doesn't work, first check that you are using the Chrome browser before seeking help.

Required Technical Skills

In this course, you will be expected to:

- Use an Internet browser – Chrome
- View videos in Mediasite, YouTube and other locations

- Use Carmen (Canvas)
- Download, save, and open files
- View PDFs
- Use copy, cut and paste, find functions
- Send and receive e-mail messages with attachments within Carmen
- Use a word processing program (Microsoft Word preferred. Files are in .docx)
- Run and switch between multiple programs
- Create and share multi-media objects such as video or audio files
- Work on collaborative documents, such as a Google Doc or Sheet (gmail account is NOT required)

Tech Support
For help with your password, university e-mail, Canvas, or any other technology issues, questions, or requests, contact the OSU IT Service Desk. Standard support hours are available at https://ocio.osu.edu/help/hours, and support for urgent issues is available 24x7.

- **Self-Service and Chat support:** http://ocio.osu.edu/selfservice
- **Phone:** 614-688-HELP (4357)
- **Email:** 8help@osu.edu
- **TDD:** 614-688-8743

Course Assignments and Grading

CATEGORY	TOTAL PERCENT OF GRADE
Homework	25%
Town Hall (All work in Module 7 related to Town Hall)	25%
Module Reviews	25%
Case Studies	25%
TOTAL	**100%**

You have until 11:59 pm on the due date to submit your homework on Canvas. **Late homework will result a grade reduction according to the late policy.**

Final Grade: Your final grade will be assigned according to the scale shown in the table below.

Grade	Percentage	Meaning
A	100-93	Outstanding performance; consistently shown exceptional depth of understanding and/or capacity for creative application of course concepts.
A-	92.9-90	Very strong performance with demonstrated depth of understanding and/or ability to apply course concepts
B+	89.9-87	Performance at an expected level; work is complete and shows solid understanding and application of course concepts
B	86.9-83	Adequate performance; work is complete but shows some limitations in grasp or ability to apply course concepts
B-	82.9-80	Marginally acceptable; work is conducted only to meet minimum course requirements

C+	79.9-77	Indicates only average understanding or application of course concepts
C	76.9-73	
C-	72.9-70	
D+	69.9-67	Below average or failure to meet stated course requirements
D	66.9-60	
E	<60	

Student Assistance

Office of Student Life Disability Services*:* Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs. Please contact the Office of Student Life: Disability Services at 614-292-3307 in room 098 Baker Hall to coordinate reasonable accommodations for students with documented disabilities (http://www.ods.ohio-state.edu/). For accommodations on assignments (e.g., increased time) please let me and the instructional designer know as soon as possible so that Carmen can be appropriately programmed and/or other accommodations planned.

After SLDS approval, students should notify me at the beginning of the semester, or if the accommodations are made mid-semester then please notify me as soon as possible. In the event of a flare-up, students needing to use short-term deadline modifications should message me via Carmen message at least 24 hours in advance of the deadline if possible to let me know that they need to use the SLDS Flex plan. This generally allows for a 3 day extension. They should remind me of their SLDS-approved accommodations in the message. Please note that for short-term flare-ups, participation in self-check quiz deadlines are not adjusted because these should be completed well ahead of the deadline. Also, please note that group project deadlines can not be modified because the whole class often works through projects together and they are interactive. Missing group project deadlines is best avoided, but if accommodations are needed the student will need to complete a modified version of the assignment individually. Please note that group project components build upon themselves, and so once a student begins working individually they are unable to rejoin a group later (example: if you complete the first part of a project individually, you will need to complete all components individually). Most students learn the most if they are able to continue to work with their groups, so I would encourage you to continue to work with your group if at all possible. However, in necessary cases we will arrange for the individual assignment. Note that there are not really any timed assignments in this class, so generally time extensions are not applied.

To ensure you understand accommodation policies, it is *highly recommended that you pass an ungraded quiz on these SLDS policies with at least a 90% to ensure you understand how to best use these accommodations in this class*. The quiz can be found on the "SLDS and Accessibility Accommodations for Students" page by scrolling to the bottom of the Modules on Carmen. Please reach out to the instructor for special circumstances or questions.

Mental Health & Student Support Services

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are

suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting https://ccs.osu.edu or calling 614-292-5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on-call counselor when CCS is closed at 614-292- 5766 and 24-hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1- 800-273-TALK or at www.suicidepreventionlifeline.org.

The Younkin Success Center: Located at 1640 Neil Avenue and has a number of tutoring, academic, and wellness services. Check their website at http://younkinsuccess.osu.edu or call (614) 292-4400. For crisis situations, NetCare Access (http://www.netcareaccess.org) offers a crisis line answered 24/365: 614-276-2273. OSU Hospital Emergency Department can be reached at 614-293-8333.

If you are experiencing any kind of difficulty, please seek help early in the course!

Academic Integrity

Ohio State's Academic Integrity Policy*:* Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the University's *Code of Student Conduct*, and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the University's *Code of Student Conduct* and this syllabus may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the University, or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the University's *Code of Student Conduct* is never considered an "excuse" for academic misconduct, so I recommend that you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by University Rules to report my suspicions to the Committee on Academic Misconduct.

If COAM determines that you have violated the University's *Code of Student Conduct* (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the University.

If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:

- The Committee on Academic Misconduct web pages (COAM Home)
- *Ten Suggestions for Preserving Academic Integrity (Ten Suggestions)*

- *Eight Cardinal Rules of Academic Integrity* (northwestern.edu/uacc/8cards.htm)

Applicable BSPH Competencies: This course covers or partially covers the following public health competencies:

Public Health Core (C) Competencies - All graduates of the BSPH degree program will be prepared to:

1. Summarize the historic milestones in public health that have influenced current roles and responsibilities of current public health agencies, organizations and systems.
2. Compare and contrast types of major domestic and international public health issues, including sources/causes of infectious/chronic diseases, transmission, risk factors, morbidity and mortality.
3. Discuss various approaches/strategies for identification, response and intervention to address and attempt to resolve common public health issues.
4. Identify genetic, social, political, cultural, behavioral, socioeconomic, demographic and ethical factors and relationships to domestic and international public health issues and determinants of health.
5. Apply the fundamental principles of the five core disciplines of public health (biostatistics; environmental health; epidemiology; health administration/policy; health behavior/promotion) to domestic and international population health issues.
6. Communicate public health information, in both oral and written forms, through a variety of media and to diverse audiences.
7. Locate, use, evaluate and synthesize public health information.

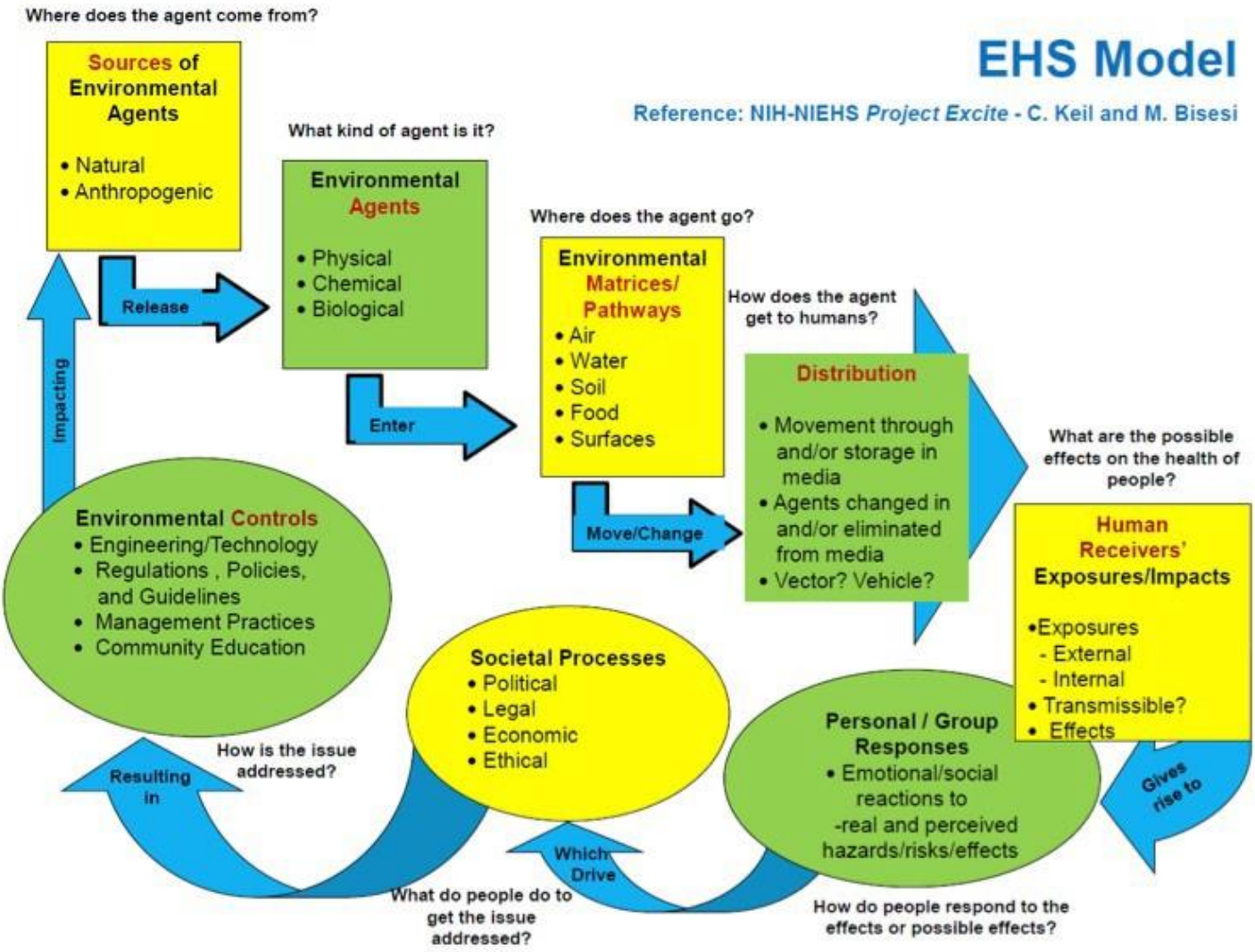
Specialization (S) Competencies – In addition to the public health core competencies, graduates of the BSPH degree program with interdisciplinary specialization in ***Public Health Sociology*** will be prepared to:

3. Illustrate how sociological perspectives of stratification – particularly along the lines of race, class, and gender – expand typical public health perceptions and approaches
4. Identify social and public policies that differentially affect the unequal distribution of health in society as well as the social process that led to their creation and keep them in place.

Specialization (S) Competencies – In addition to the public health core competencies, graduates of the BSPH degree program with interdisciplinary specialization in ***Environmental Public Health*** will be prepared to:

2. Apply principles of math, chemistry, and biology to the science of environmental public health.
3. Summarize major sources, chemical, biological, and physical agents, conditions, the social determinants of health, and other exposure factors that contribute to environmentally-related human diseases including those at the intersection of humans and animals.
5. Apply the principles of exposure science, risk assessment, risk management, policy development, and risk communication to environmental public health issues identified within indoor/outdoor and occupational/non-occupational settings.

Environmental Health Sciences Model (figure 1)



Modules and Topic Table. Note that this list is not exhaustive and please refer to Carmen for the most updated list.

Modules	Topics	Dates	Readings/ Viewings	Aligned Course Learning Objectives	Aligned BSPH-EPH Specialization Competencies	Aligned BSPH-PHS Specialization Competencies	Aligned Evaluation
Module 1: Overview	Intro to Risk Assessment		USEPA -Conducting a Human Health Risk Assessment	1,2	3, 5	1	Homework, Self-check quiz, Module review, Case Study – Overview Applied Risk Assessment Process
	It's All About That Risk!						
	Public Opinion and the Environmental Movement						
	CASE STUDY: US Environmental Regulatory Framework: Love Canal	Weeks 1-2	The Love Canal Tragedy, Lawsuits, and CHEJ			1,5	
Module 2: Hazard Identification	Hazard Identification		US EPA- Hazard Identification	3,4	3, 5		Homework, Self-check quiz, Module review, Case Study – Applying Sources/Types of Contaminants and Epidemiological Concepts for Exposure and Hazard Assessment Component of Risk Assessment
	Exploring EPA's Integrated Risk Information System (IRIS)		USEPA - Basic Information about the Integrated Risk Information System				
	Hazard Identification – Noncarcinogens and Carcinogens		Ames BN and Gold LS. The Causes and Prevention of Cancer Gaining Perspective. 1997. Environmental Health Perspectives 105 S4, pp. 865-873.pdf				
	CASE STUDY: Acrylamide in Coffee	Weeks 3-4	The Proposition 65 List			5	
Module 3: Dose Response (Toxicity Assessment)	Dose Response: Non-carcinogens		T ORRES, BOBST, 2015. Ch. 3 Dose Response Assessment (pp. 43-66)	2,3,4	2,3,5		Homework, Self-check quiz, Module review, Case Study – Racial Inequity
	Dose Response: Carcinogens	Week 5	Conducting a Human Health Risk Assessment				

Modules	Topics	Dates	Readings/ Viewings	Aligned Course Learning Objectives	Aligned BSPH-EPH Specialization Competencies	Aligned BSPH-PHS Specialization Competencies	Aligned Evaluation
			(CLICK Dose Response TAB)				and Calculating and Interpreting Dose relative to Disease Response and Outcomes
	Case Study - Racial Inequity and the COVID-19 Pandemic		Black Americans Face Alarming Rates of Coronavirus Infection in Some States; College Made Them Feel Equal. The Virus Exposed How Unequal Their Lives Are.; Factors associated with COVID-19-related death using OpenSAFELY; Ohio Department of Health COVID-19 Update: Efforts to Improve Minority Health, New Sector Openings			5	
Module 4: Exposure Assessment (Divided into parts A and B)	Assessing Exposure		Conducting a Human Health Risk Assessment (Exposure Assessment)	2,3,4	3,5	2	Homework, Self-check quiz, Module review, Case Study – Applying Modes and Routes of Entry to Calculate Exposures to Chemical Contaminants
	Assessing Ingestion Exposure						
	Assessing Inhalation Exposure						
	Assessing Dermal Absorption						
	CASE STUDY: Dioxin Food Diary	Weeks 6-9				2,5	
Module 5: Risk Characterization	Risk Characterization		Conducting a Human Health Risk Assessment (Risk Characterization)	2,3,4	2,3,5	2	Homework, Self-check quiz, Module review, Case Study – Applying data to calculate and address Risk Characterization Component of
	Risk Characterization: Noncancer						
	Risk Characterization: Cancer						
	Ohio EPA: Risk Assessment in Ohio	Weeks 9-11					

Modules	Topics	Dates	Readings/ Viewings	Aligned Course Learning Objectives	Aligned BSPH-EPH Specialization Competencies	Aligned BSPH-PHS Specialization Competencies	Aligned Evaluation
	CASE STUDY: East Liverpool, Ohio Health Consultation					2,5	Risk Assessment
Module 6: Assessing Health Risks for Children	Children's Health Risk Assessment			5,6	2,3,5	5	Homework, Self-check quiz, Module review, Case Study – Use of Statistical, Epidemiological, and Toxicological Data for Risk Assessment
	Chemicals in Consumer Products						
	CASE STUDY – Toxic Hot Seat	Week 12					
Module 7: Lead Contamination and Local Exposure: Lead Town Hall Simulation	Lead in the Environment		Readings vary based on case study group		5	5	Homework, Self-check quiz, Module review, Large class-wide Case Study Applying Approaches to Risk Communication and Real v. Perceived Risk
	Municipal Water Systems						
	Risk Perception						
	Risk Communication						
	Lead Contamination Role Play Set Up						
	Town Hall Simulation	Weeks 13-14		5,6			