

Environmental Public Health Syllabus
W&M KINE 325
Fall 2022
Instructor: Dr. Jennifer L. Butler
Class Time: M/W 6:30 p.m. to 7:50 p.m.

Class Meeting Location: Small Hall, Rm 111 (unless otherwise specified by instructor or moved to hybrid/online format as dictated by W&M leadership. Should that occur, additional Zoom information will be provided by the instructor).

Office hours: Mondays and Wednesdays at 6:00 p.m. and 8:00 p.m. (prior to and after class) or request appointment by emailing instructor at epidocjen@gmail.com or jlbutler03@wm.edu

Textbook Required: *Environmental Health From Global to Local, edited by Howard Frumkin*

ISBN 978-1-118-98476-5.

<https://ebookcentral.proquest.com/lib.cwm/detail.action?docID=4405576>

Additional content/links will be provided in the weekly Blackboard Modules. **Please read all assigned material weekly prior to class.**

Course Objectives:

The course will provide a framework for learning and analyzing how various environmental aspects affect human health. The course begins by introducing the topic of environmental health and throughout the course, students will learn from various sources, such as the textbook, peer-reviewed scientific journal articles, firsthand accounts of specialized topics via guest lecturers who are experts in the field and through research essays.

Please refer to the W&M 2022 Fall Academic Calendars and take note of the **Last Day to Drop/Add/ Withdrawal** from the course, as well as other important dates:

<https://www.wm.edu/offices/registrar/calendarsandexams/ugcalendars/index.php#spring>

A **Midterm Exam** will be administered in the classroom (unless otherwise announced) on 10/10/2022. The exam will consist of approximately 40 questions worth a total of 100 points and will cover all content from Class 2 through Class 10 (see below blueprint for specific class content). The exam will consist of True/False, Multiple Choice, and Fill in the Blanks. Make up exams will only be permitted and scheduled for students who have been prior excused by the professor from taking the exam on the specified date *or* have a valid, documented emergency.

Total points: 100

A **Final Exam** will consist of a final environmental health project that will be completed as a team. You will be placed into teams of 3-5 students (depending on class size). You will create a Public Service Announcement for a topic related to EPH. Specific information and grading rubric will be provided in Blackboard. More details will be provided during class. You will also

have an essay that accompanies the project, and each student will need to turn in an individual essay. Projects will be graded as a team grade for presentation and an individual grade for the essay, broken down as specified below.

Total points: 400

*A clear rubric will be provided in the course blackboard module and assignment areas and shall remain fluid, meaning dates of lecture topics may adjust as necessary.

Grading:

Class attendance - random 10 classes, 5 pts each	50 points (weekly attendance required)
Midterm exam	100 points
Assignment #1 (Dark Water essay)	50 points
Assignment #2 (Radiation and Health Impacts)	50 points
Final Project (Team Presentation)	100 points
Final Project (accompanying individual Essay)	50 points

Total possible points 400 points

Grading Scale*

375-400	A
360-374	A-
344-359	B+
328-343	B
312-327	B-
296-311	C+
280-295	C
264-279	C-
248-263	D+
232-247	D
216-231	D-
215 or below	F

*Grades may be curved, or points added to distribution. This will always be a result in the student's favor

All William and Mary academic policies, including honor code and diversity inclusions, apply to this course. Students are expected to adhere to all policies.


Weekly Class Module Blueprint


<p>Class 1 (9/7/2022) (WED)</p>	<p>Introduction to the Course: Review Syllabus & Class Expectations.</p> <p><i>During this class period, the instructor will introduce herself and review the course syllabus and expectations. The class TA will also introduce herself. Students will also be expected to introduce themselves by giving their name, yr (ie: freshman-senior), major/minor, why they enrolled in this course and what they hope to learn from it. They will also provide one fun fact about themselves.</i></p>
<p>Class 2 (9/12/22) (MON)</p>	<p><i>Chapter 1-Introduction to E.H. (course textbook)</i> <i>Chapter 2-Ecosystems and human health</i></p> <p>Video: APHA Video on EPH How does environment affect our health? Episode 10 of "That's Public Health" - YouTube (4:31)</p>
<p>Class 3 (9/14/22) (WED)</p>	<p><i>Chapter 4- Environmental and Occupational Epidemiology</i></p> <p>Video-Yale School of Public Health: https://www.youtube.com/watch?v=r89xIYFX34Y (3:44).</p> <p>Video-Univ. of Michigan COHSE https://www.youtube.com/watch?v=cPR6EmINb7Q (3:48)</p> <p><i>Chapter 6- Toxicology</i></p> <p>Video- WHO: Preventing Disease through healthy environments: https://www.youtube.com/watch?v=tupJDf13jBo</p> <p>Article- The role of the human microbiome in chemical toxicity (Koontz et al., 2019). https://journals.sagepub.com/doi/pdf/10.1177/1091581819849833</p>
<p>Class 4 (9/19/22) (MON)</p>	<p><i>Chapter 8: Exposure/Industrial Hygiene</i> <i>Chapter 20: Buildings and Health</i> <i>Chapter 21: Work Health and Well-Being</i></p> <p>Ergonomic Injury Report (Carpel tunnel syndrome): https://www.foxnews.com/health/hand-deformities-turn-up-in-poultry-workers-report-finds</p>

	<p>Video: https://www.youtube.com/watch?v=Ia3abCiYX3w (13:19)</p>
<p>Class 5 (9/21/22) (WED)</p>	<p><i>Chapter 16: Water & Health</i></p> <p>Article: Water and health: From environmental pressures to integrated responses (Boelle et al.)</p> <p>Video: Climate change and water https://www.youtube.com/watch?v=vB68xvRb2T4 (8:45)</p> <p><i>Chapter 17: Solid & Hazardous Waste (latrine pits-Natl Geographic)</i> https://www.wri.org/insights/wastewater-best-hidden-energy-source-youve-never-heard</p> <p>*T/A (Thu) Introduction to her internship working with Catch Water Basins</p> <p>*Assign first assignment (Essay on Water & EPH/Dark Waters movie) (Due 10/17/22) Rubric is located in Blackboard.</p>
<p>Class 6 (9/26/22) (MON)</p>	<p>Watch movie <i>Dark Waters</i> in class (this is the movie you will reference when completing assignment #1). *Note, class may go a few minutes over, be prepared to stay until 8 p.m.</p>
<p>Class 7 (9/28/22) (WED)</p>	<p>Video- During this class period, we will watch the Congressional testimony given by actor Mark Ruffalo regarding his experiences as they related to the movie Dark Waters and the illegal dumping of chemicals into water supply and the toxic PFAS. (8:30)</p> <p>CNN Flint Water Crisis Video: https://www.youtube.com/watch?v=nTpsMyNezPQ</p> <p>AJ Video on Flint Water Crisis: 4 yrs later: https://www.youtube.com/watch?v=9iCdkjW4YQ8</p> <p>Guardian Article- Interview with Congresswoman Tlaib about the Flint Water Crisis: https://www.theguardian.com/us-news/2021/feb/10/rashida-tlaib-interview-environmental-justice-water-crisis</p>

	<p>Flint water crisis Article- https://www.nrdc.org/stories/flint-water-crisis-everything-you-need-know</p> <p>Video: Pittsburgh VAMC Legionnaire outbreak article (link on PP)</p> <p>Video: Michael Siravo-Camp Lejeune, NC attorney and Marine Veteran talks about the timeline of the water contamination at Cp. Lejeunne, NC.</p>
<p>Class 8 (10/3/22) (MON)</p>	<p><i>Chapter 12: Climate Change-Global Aspects</i></p> <p>Article by the Nature Conservancy regarding IPCC's 2019 report: (link located in lecture PP slide)</p> <p>CDC Video on how climate change affects human health: https://www.youtube.com/watch?v=JywsWktvODc (4:37)</p> <p><i>Chapter 13: Air Pollution; Wildfire smoke and the impact on human health</i></p> <p>Air pollution 101-Video by Nat'l Geographic: https://www.youtube.com/watch?v=e6rglsLy1Ys</p> <p>NASA FIRMS Dashboard: Wildfire data and detection both globally and within the U.S. https://firms.modaps.eosdis.nasa.gov/</p> <p><i>Chapter 24: Environmental Disasters</i></p> <p>Our World in Data: Natural Disaster interactive data charts, illustrating mortality: https://ourworldindata.org/natural-disasters</p> <p>Top 5 Natural Disasters in History https://www.youtube.com/watch?v=fn-mUrGsJPo</p> <p>If time permits, we will review for the midterm. It is recommended that all students attend the midterm review given by the class TA (time, date, and location TBA in Blackboard)</p>

<p>Class 9 (10/5/22) (WED)</p>	<p>NO Class-Instructor will be out of town. <i>Dr. Butler will not be in town on this date, so class will not be held. Students should use this time to study for the Midterm Exam, which will be administered during class 11.</i></p>
<p>Class 10 (10/10/22) (MON)</p>	<p>Midterm Exam-The midterm exam for this course will be administered during class at this time. If you are absent from this class session, you will need to have made prior arrangements with the instructor to take the exam on a different date and receive a grade).</p>
<p>FALL BREAK (10/12/22) (WED)</p>	<p>NO CLASSES! Enjoy your Fall Break! <i>Fall Break is from 10/13/22-10/16-22. You will not have class on this date UNLESS you are making up the Midterm Exam. If you took the exam during the Class 11 session, enjoy your break a little early!</i></p>
<p>Class 11 (10/17/22) (MON)</p>	<p style="text-align: center;">Assignment #1 due by midnight tonight!</p> <p style="text-align: center;">Class Discussion on Dark Waters movie.</p> <p><i>Chapter 14: Energy & Human Health</i> <i>Chapter 22: Radiation</i> (this topic will cover the next few classes). We will begin with learning the EMS and difference in non-ionizing radiation and ionizing radiation and how each effect EPH.</p>
<p>Class 12 (10/19/22) (WED)</p>	<p style="color: red;">Radiation- Chernobyl Movie Series. *The W&M Campus library will have the series for viewing over the next several weeks at their convenience. There will be a class round robin discussion on the series on 11/14/22 (class 20).</p> <p>Class lecture- <i>Cosmic Radiation vs. Terrestrial Radiation:</i> Understanding the difference between radiation in space and her on earth and health implications of each.</p>
<p>Class 13 (10/24/22) (MON)</p>	<p>During the class session, Instructor will continue with the topic of Radiation in Public Health and members of the NASA LaRC Space Radiation Group will be on hand to discuss Space Radiation in depth.</p>
<p>Class 14 (10/26/22) (WED)</p>	<p>*Assign assignment #2-brief essay (2-3 pages) on radiation and the impacts to human health (This will be due 11/14/22).</p> <p>Class Lecture-Careers in Environmental Public Health. Learning to navigate graduate and advanced degrees in the field and occupational outlooks. - Will explore Bureau of Labor and Statistics (BLS) data on various occupational outlooks related to EPH.</p>

	(Class lecture currently being written, additional versions of syllabus posted/updated in course via blackboard may contain links to articles and videos discussed during class)
Class 15 (10/31/22) (MON)	<p>Happy Halloween (yes, we still have class)</p>  <p>Class Lecture-Special Topics in Environmental Public Health (Class lecture currently being written, additional versions of syllabus posted/updated in course via blackboard may contain links to articles and videos discussed during class)</p>
Class 16 (11/2/22) (WED)	Radiation- Guest speaker (Via Zoom) about Chernobyl and Million Person Study-Dr. John Boice (*Class will be held in classroom, but guest speaker will be on Zoom)
Class 17 (11/7/22) (MON)	<p>Discuss the topics in EPH to date. Open discussion on topics covered to date and how specific topics relate to student's majors, minors, or academic/occupational areas of interest. *(Check Blackboard, Class will likely be via Zoom as Instructor will be traveling for work)</p> <p>Assign the Final class assignment/presentations- A PSA on a specific Environmental PH Topic. See Blackboard for specific details and rubric regarding assignment. (Review Rubric) -Students will have time this class period to choose teammates and select topic and begin research.</p>
Class 18 (11/9/22) (WED)	NO Class-Instructor out of state for work. <i>Dr. Butler will be in Houston, Tx for work from 11/7-11/13, therefore there will be no class on this date. Communication will be limited during this time.</i>
Class 19 (11/14/22) (MON)	<p>Class may be via zoom (please check announcements and emails).</p> <p>T/A-Thu Pham will provide an overview on her summer trip to her native land of Vietnam and her volunteer work there with their public health administration and how it related to specific areas of EPH (ie: Environmental Epi, Data Collection and Analysis, How Vietnam addresses such issues differently from the U.S., etc.)</p> <p>*Assignment #2 due by midnight!</p>
Class 20 (11/16/22) (WED)	<p><i>Chapter 25: Nature Contact: Environmental Psychology and Healthy Bx.</i> (Class lecture currently being written, additional versions of syllabus posted/updated in course via blackboard may contain links to articles and videos discussed during class)</p> <p><i>Chapter 26: Environmental PH: From Theory to Practice</i></p>

	(Class lecture currently being written, additional versions of syllabus posted/updated in course via blackboard may contain links to articles and videos discussed during class)
Class 21 11/21/22 (MON)	Class will be VIA ZOOM due to Thanksgiving week! Attendance is mandatory for the zoom session. Be prepared to share with the class 3 things you are grateful for and why.
Thanksgiving Break 11/23/22 (WED)	Thanksgiving Break - no class due to Thanksgiving break. <i>Happy Thanksgiving.</i> 
Class 22 (11/28/22) (MON)	Final Class projects/presentations -Environmental Health PSA
Class 23 (11/30/22) (WED)	Final class projects/presentations=Environmental Health PSA
Class 24 (12/5/22) (MON)	Final class projects/presentations -Environmental Health PSA *Final Essays are due by midnight tonight!
Class 25 (12/7/22) (WED)	LAST DAY OF CLASS -You are still expected to be here for the last class session. During this session, the instructor will provide a recap of what you have learned throughout this course and hold a class discussion on any EHPH topics you would like to further talk about.