



PUBHEPI 5412
Global Epidemiology of Infectious Disease
Spring Term 2025
3 Credit Hours

Instructor: Stacy Endres-Dighe, PhD, MPH
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Class Time and Location: Wednesday and Friday 3:55-5:15pm; Cunz Hall room 150

GTA's Office Hours*: Tuesday 2:45-3:45pm (EST) via Zoom; other times available upon request

Link: <https://osu.zoom.us/j/2953637793?pwd=aTBxU0VhT3I1SG5lRmJqaVVkd2thQT09>

Meeting ID: 295 363 7793 Password: 638803

*Instructor is available to meet upon request

Course description: This course is designed to provide students with an overview of the principles and practices of infectious diseases epidemiology with focus on how the presence and control of communicable diseases affects public health locally, nationally, and internationally.

Prerequisites for Undergraduate students: PUBHLTH 2010 and PUBHEPI 2410.

Prerequisites for Graduate students: PUBHEPI 6410 or PUBHLTH 6001 recommended but not required.

Class Format

This class is an in-person, synchronous course. Methods of instruction include in-class lectures, discussions and activities, textbook and assigned readings, and watching or listening to relevant presentations or films.

Course Learning Objectives:

1. Describe the major modes of transmission of infectious diseases including airborne, food and water, zoonotic, insect vector, blood, and sexual transmission.
2. Outline different control strategies for infectious diseases including public health interventions, humanitarian efforts, immunization, risk factor modification, and disease screening.
3. Understand the role of the legacies of colonialism in infectious diseases epidemiology.
4. Describe the effects of poverty, malnutrition, and access to health care on the risk of acquiring infectious disease.

Core Undergraduate Competencies:

BSPH Core

1. 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.
2. Discuss various approaches and strategies for identification, response and intervention to address and attempt to resolve common public health issues.
3. Identify genetic, social, political, cultural, behavioral, socioeconomic, demographic, and ethical factors and relationships to domestic and international public health issues and determinants of health.
4. 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.

Specialization - PUBLIC HEALTH SOCIOLOGY

1. Identify how sociological theories can extend our knowledge of disease processes and prevention and intervention opportunities, beyond typical public health perspectives.
2. Interpret population health patterns using rigorous methods of sociological inquiry that stem from both qualitative and quantitative reasoning, augmenting what public health researchers and practitioners typically use.

Specialization- ENVIRONMENTAL PUBLIC HEALTH

1. Use the Environmental Science Health model to explain environmentally-related exposures and human diseases

Core MPH Competencies in Epidemiology:

1. Describe a public health problem in terms of magnitude, person, time, and place.
2. Utilize the basic terminology and definitions of epidemiology.
3. Identify key sources of data for epidemiologic purposes.
4. Calculate basic epidemiology measures such as odds ratio, relative risk, and standardized mortality ratio.
5. Evaluate the strengths and limitations of epidemiologic studies reported in the literature, including an assessment of the internal validity of the design and the appropriateness of the analysis.
6. Draw appropriate inferences from epidemiologic data.
7. Recognize the principles and limitations of public health screening programs.

Course Readings:

Required Readings available via OSU Library links:

- Patient Zero: A Curious History of the World's Worst Diseases by Lydia Kang, MD and Nate Pederson; Publish Date: November 16th, 2021; Publisher: Workman Publishing Company; ISBN: 9781523513291
- Cliff, Andrew, and Matthew Smallman-Raynor, *Oxford Textbook of Infectious Disease Control: A Geographical Analysis from Medieval Quarantine to Global Eradication*, 1, Oxford Textbooks (Oxford, 2013; online edn, Oxford Academic, 1 July 2013), <https://doi.org/10.1093/med/9780199596614.001.0001>

Sample of assigned readings posted in Canvas:

- Baker, R.E., Mahmud, A.S., Miller, I.F. *et al.* Infectious disease in an era of global change. *Nat Rev Microbiol* **20**, 193–205 (2022). <https://doi.org/10.1038/s41579-021-00639-z>
- Randolph HE, Barreiro LB. Herd Immunity: Understanding COVID-19. *Immunity*. 2020 May 19;52(5):737-741. doi: 10.1016/j.immuni.2020.04.012. PMID: 32433946; PMCID: PMC7236739.
- van Seventer JM, Hochberg NS. Principles of Infectious Diseases: Transmission, Diagnosis, Prevention, and Control. *International Encyclopedia of Public Health*. 2017:22–39. doi:

- 10.1016/B978-0-12-803678-5.00516-6. Epub 2016 Oct 24. PMID: PMC7150340.
- Memish ZA, Zumla A, Alhakeem RF, Assiri A, Turkestani A, Al Harby KD, Alyemni M, Dhafar K, Gautret P, Barbeschi M, McCloskey B, Heymann D, Al Rabeeh AA, Al-Tawfiq JA. Hajj: infectious disease surveillance and control. *Lancet*. 2014 Jun 14;383(9934):2073-2082. doi: 10.1016/S0140-6736(14)60381-0. Epub 2014 May 20. PMID: 24857703; PMID: PMC7137990.
 - Tulchinsky TH. John Snow, Cholera, the Broad Street Pump; *Waterborne Diseases Then and Now. Case Studies in Public Health*. 2018:77–99. doi: 10.1016/B978-0-12-804571-8.00017-2. Epub 2018 Mar 30. PMID: PMC7150208.
 - Paquette CE, Syvertsen JL, Pollini RA. Stigma at every turn: Health services experiences among people who inject drugs. *Int J Drug Policy*. 2018 Jul;57:104-110. doi: 10.1016/j.drugpo.2018.04.004. Epub 2018 Apr 30. PMID: 29715589; PMID: PMC5994194.
 - Global burden of bacterial antimicrobial resistance 1990–2021: a systematic analysis with forecasts to 2050 Naghavi, Mohsen et al. *The Lancet*, Volume 404, Issue 10459, 1199 – 1226
 - Tizifa TA, Kabaghe AN, McCann RS, van den Berg H, Van Vugt M, Phiri KS. Prevention Efforts for Malaria. *Curr Trop Med Rep*. 2018;5(1):41-50. doi: 10.1007/s40475-018-0133-y. Epub 2018 Feb 8. PMID: 29629252; PMID: PMC5879044.
 - Govender RD, Hashim MJ, Khan MA, Mustafa H, Khan G. Global Epidemiology of HIV/AIDS: A Resurgence in North America and Europe. *J Epidemiol Glob Health*. 2021 Sep;11(3):296-301. doi: 10.2991/jegh.k.210621.001. Epub 2021 Jun 29. PMID: 34270183; PMID: PMC8435868.
 - MacNeil A, Glaziou P, Sismanidis C, Date A, Maloney S, Floyd K. Global Epidemiology of Tuberculosis and Progress Toward Meeting Global Targets - Worldwide, 2018. *MMWR Morb Mortal Wkly Rep*. 2020 Mar 20;69(11):281-285. doi: 10.15585/mmwr.mm6911a2. PMID: 32191687; PMID: PMC7739980.

Assessment Components:

The course will include additional assignments in various forms. Each is described briefly below; additional details will be provided on Canvas and in class for each assignment.

Assignment

- In-class Activities
- Reflection Papers
- Project/Presentation

Points (300 total)

120 (pts distributed throughout the semester)
 120 (10 reflections, 12 points each)
 60 (Draft, Final)

1. **In-class Activities:** These exercises consist of case studies and problem sessions in which students are presented with an issue and will work in small groups to analyze data, summarize contributing factors, and communicate proposed solutions. Students **must be present in class to participate, assignments will be completed during class time, and directions will be provided by instructor.**

*** In an effort to create flexibility for students to manage their lives, and sometimes miss class, students may receive **up to 2** opportunities to complete in-class activities outside of class. This is by instructor's permission only. To utilize an 'out of class' pass, students should contact the instructor (via e-mail), copying the TA within 24-hours of the class they intend to miss. If approved, the instructor will provide a one-time extension. ***

Reflection Papers: These weekly assignments, consisting of a written reflection of 700-900 words, enable you as the learner to share your thoughts, questions and reflections on the course material in the corresponding Module. More directions are provided in Canvas.

- **Directions and format:** You should use double-spaced, 12-pt Times New Roman, and complete sentences or bulleted lists, as appropriate. Reflections consist of two parts.

- **Part 1 (9 points; 500-600 words):** Identify important key terms, concepts, individuals or organizations throughout the reading. Often your instructor will provide a few of these and you should add to these based on your knowledge base and/or prior experience.
 - Full credit for Part 1 is earned by:
 - (1) Succinctly describing the main topics that you learned about from the reading,
 - (2) reflecting on how these readings affected your overall understanding of the course content, and
 - (3) clearly demonstrating familiarity and reading comprehension of the assigned material.
 - **Grad students only** (in addition to the three components above and with an additional 100- 200 words):
 - (4) Evaluate the strengths and weaknesses of the literature or material you reviewed
 - (5) reflecting on how this topic is connected to either other course material or your own professional interests/practice/research.
- **Part 2 (3 points; 200-300 words):** This section is to specifically encourage and incentivize your curiosity and life-long learning habits. After you read the provided material, you should take the additional step as a learner to (1) identify something in the readings that is new or unknown to you and (2) find an additional, reputable source to learn more about that topic. Examples of this process might include reading further about a concept, person, place, or event that is new to you.
 - Full credit for Part 2 is earned by:
 - (1) identifying and sharing the additional source that you examined regarding the new topic, and
 - (2) briefly explaining your new/additional understanding of the topic.

2. Project/Presentation:

- a. **Undergraduate students only** will choose to synthesize EITHER a map, timeline, or poster. Maps and timelines should include at least 40 specific events or discoveries related to the epidemiology of infectious disease. The 40 entries should vary geographically and temporally to demonstrate historical perspective and context of the field. Students may instead choose to create a poster (see directions below for graduate students). Students will present map, timeline, or poster in an informal in-class poster session. Students will also participate in peer-review of each other's projects.
- b. **Grad students only** will synthesize a research poster and present to the class for 10-12 minutes over an infectious disease topic of their choice. With both verbal and visual communications, graduate students should:
 - i. Describe the burden (in terms of magnitude, person, time, and place) of an infectious disease public health problem.
 - ii. Utilize the basic terminology and definitions of infectious disease epidemiology.
 - iii. Identify key sources of data for epidemiologic purposes and draw appropriate inferences from epidemiologic data.
 - iv. Evaluate the strengths and limitations of epidemiologic studies reported in the literature,

- including an assessment of the internal validity of the design and the appropriateness of the analysis.
- v. Recognize and communicate the strengths and limitations of associated methods of control or prevention, related to their topic.

Late submissions of online assignments are strongly discouraged. Online assignments (reflections and draft and final projects/presentations) submitted after the due date posted on Canvas are accepted for 72 hours past the due date with no penalty. Any late online assignments submitted after the 72 hour grace period will not be graded, and will receive a 0% for that assignment.

Late submissions of in-class assignments are not accepted because they must be completed and submitted in class.

Grading Scale:

- A: 93 - 100
- A-: 90 – 92.9
- B+: 87 – 89.9
- B: 83 – 86.9
- B-: 80 – 82.9
- C+: 77 – 79.9
- C: 73 – 76.9
- C-: 70 – 72.9
- D+: 67 – 69.9
- D: 60 – 66.9
- E: < 60

Time Management

According to Ohio State policy (go.osu.edu/credithours), students should expect to spend a minimum of 3 hours per week on a course for each credit hour, thus for this 3-credit hour course you should expect to devote roughly 9 hours per week. Workload may vary from week to week. This is intended as a rough guide to help you plan your time accordingly. In a typical week, you can expect your time to be spent as follows:

- 3 hours – assigned readings
- 2.25 hours – completing assignments
- 2.75 hours – attending class, participating in in-class activities
- 1 hour – interacting with small groups on discussion boards and peer review

Although Ohio State strives to remain open to ensure continuity of services to students and the public, extreme conditions can warrant the usage of the university's [Weather or Other Short-Term Closing Policy](#). Please [visit this webpage](#) to learn more about preparing for potential closings and planning ahead for winter weather. Should in-person classes be canceled due to the University's Weather or Other Short-Term Closing Policy, online or distance-learning classes will occur as scheduled unless otherwise announced by the university.

Religious Accommodations

Ohio State has had a longstanding practice of making reasonable academic accommodations for students' religious beliefs and practices in accordance with applicable law. In 2023, Ohio State updated its practice to align with new state legislation. Under this new provision, students must be in early communication with their instructors regarding any known accommodation requests for religious beliefs and practices, **providing notice of specific dates for which**

they request alternative accommodations within 14 days after the first instructional day of the course.

Instructors in turn shall not question the sincerity of a student's religious or spiritual belief system in reviewing such requests and shall keep requests for accommodations confidential.

With sufficient notice, instructors will provide students with reasonable alternative accommodations with regard to examinations and other academic requirements with respect to students' sincerely held religious beliefs and practices by allowing up to three absences each semester for the student to attend or participate in religious activities. Examples of religious accommodations can include, but are not limited to, rescheduling an exam, altering the time of a student's presentation, allowing make-up assignments to substitute for missed class work, or flexibility in due dates or research responsibilities. If concerns arise about a requested accommodation, instructors are to consult their tenure initiating unit head for assistance.

A student's request for time off shall be provided if the student's sincerely held religious belief or practice severely affects the student's ability to take an exam or meet an academic requirement and the student has notified their instructor, in writing during the first 14 days after the course begins, of the date of each absence. Although students are required to provide notice within the first 14 days after a course begins, instructors are strongly encouraged to work with the student to provide a reasonable accommodation if a request is made outside the notice period. A student may not be penalized for an absence approved under this policy.

If students have questions or disputes related to academic accommodations, they should contact their course instructor, and then their department or college office. For questions or to report discrimination or harassment based on religion, individuals should contact the Office of Institutional Equity. (Policy: Religious Holidays, Holy Days and Observances)

Classroom code of conduct:

We expect mutual respect and civility so that every student has the best opportunity to learn, and all instructors have the best opportunity to teach. Disruptions and micro-aggressions interfere with the opportunity for learning and growth. We attempt to foster an environment in which each class member is able to respect each other. Some of the material in this course could evoke strong emotions; please be respectful of others' emotions and be mindful of your own. Please let me know if something said or done, by either the instructor or other students, is troubling or causes discomfort or offense. While our intention may not be to cause discomfort or offense, the impact of what happens throughout the course is important and deserving of attention. When this occurs, you can discuss the situation privately with the instructor or course coordinator, or you can notify us of the issue through another source such as your academic advisor, a trusted faculty member, or a peer.

Class Technology

1. There is a Carmen site for the course, where students can find all readings and assignments. Assignments must be submitted through Carmen (carmen.osu.edu).
2. *Required equipment*
 - a. Computer: current Mac (MacOs) or PC (Windows 10) with high-speed internet connection
 - b. Webcam: built-in or external webcam, fully installed and tested
 - c. Microphone: built-in laptop or tablet mic or external microphone
 - d. Other: a mobile device (smartphone or tablet) to use for BuckeyePass authentication

Security Policies

OSU Information Technology's Security Policy can be found here:

<https://ocio.osu.edu/sites/default/files/assets/Policies/ITSecurity.pdf>.

Additional information about cyber security can be found here: <https://cybersecurity.osu.edu/about>.

OSU Learning Accessibility Policies

<https://keeplearning.osu.edu/> and <https://resourcecenter.odee.osu.edu>

<https://www.instructure.com/canvas/accessibility>

Technology support

For help with your password, university email, Carmen, or any other technology issues, questions, or requests, contact the Ohio State IT Service Desk. Standard support hours are available at ocio.osu.edu/help/hours, and support for urgent issues is available 24/7.

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

Office of Student Life: Disability Services:

The university strives to maintain a healthy and accessible environment to support student learning in and out of the classroom. If you anticipate or experience academic barriers based on your disability (including mental health, chronic, or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, students should make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion.

If you are ill and need to miss class, including if you are staying home and away from others while experiencing symptoms of a viral infection or fever, please let me know immediately. In cases where illness interacts with an underlying medical condition, please consult with Student Life Disability Services to request reasonable accommodations. You can connect with them at slds@osu.edu; 614-292-3307; or slds.osu.edu.

Mental Health 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 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 24/7 by dialing 988 to reach the Suicide and Crisis Lifeline.

Academic integrity

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-48.7 (B)). For additional information, see the Code of Student Conduct

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. Please note that the use of material from the Internet without appropriate acknowledgement and complete citation is plagiarism

just as it would be if the source were printed material. Further examples are found in the Student Handbook. Ignorance of the Code of Student Conduct and the Student Handbook is never considered an “excuse” for academic misconduct.

If I suspect a student of academic misconduct in a course, I am obligated by University Rules to report these suspicions to the University’s Committee on Academic Misconduct. If COAM determines that the student has violated the University’s Code of Student Conduct (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in the 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.

Artificial Intelligence and Academic Integrity

There has been a significant increase in the popularity and availability of a variety of generative artificial intelligence (AI) tools, including ChatGPT, Sudowrite and others. These tools will help shape the future of work, research and technology but when used in the wrong way, they can stand in conflict with academic integrity at Ohio State.

All students have important obligations under the [Code of Student Conduct](#) to complete all academic and scholarly activities with fairness and honesty. Our professional students also have the responsibility to uphold the professional and ethical standards found in their respective academic honor codes. Specifically, students are not to use unauthorized assistance in the laboratory, on field work, in scholarship or on a course assignment unless such assistance has been authorized specifically by the course instructor. In addition, students are not to submit their work without acknowledging any word-for-word use and/or paraphrasing of writing, ideas or other work that is not your own. These requirements apply to all students undergraduate, graduate, and professional.

To maintain a culture of integrity and respect, these generative **AI tools should not be used in the completion of course assignments** in this course.

Child Care Access Means Parents in School Program

The Office of Diversity and Inclusion provides holistic support for qualifying student parents enrolled at Ohio State. To learn more, contact the “Child Care Access Means Parents in School” (CCAMPIS) Program at 614-247-7092/lewis.40@osu or visit odi.osu.edu/ccampis

Health and Safety Requirements

Health and safety requirements: All students, faculty and staff are required to comply with and stay up to date on all university safety and health guidance (<https://safeandhealthy.osu.edu>), which includes wearing a face mask in any indoor space and maintaining a safe physical distance at all times. Non-compliance will be warned first and disciplinary actions will be taken for repeated offenses.

Course Outline

Week/ Module	Topics	Readings and Lecture Material (Additional Articles in Carmen Modules)	Assignments Due (In addition to in- class activities)
1	Getting Started and Intro to Global Epidemiology of ID	Baker, R.E., Mahmud, A.S., Miller, I.F. et al. Infectious disease in an era of global change. Nat Rev Microbiol 20, 193–205 (2022). https://doi.org/10.1038/s41579-021-00639-z	In-class activities only

2	Disease Transmission; Immunity, Host Defenses and the Environment	Randolph HE, Barreiro LB. Herd Immunity: Understanding COVID-19. <i>Immunity</i> . 2020 May 19;52(5):737-741. doi: 10.1016/j.immuni.2020.04.012. PMID: 32433946; PMCID: PMC7236739.	Module 2 Reflection
3	Disease Transmission: Infectious Disease Agents	van Seventer JM, Hochberg NS. Principles of Infectious Diseases: Transmission, Diagnosis, Prevention, and Control. <i>International Encyclopedia of Public Health</i> . 2017:22-39. doi: 10.1016/B978-0-12-803678-5.00516-6. Epub 2016 Oct 24. PMCID: PMC7150340.	Module 3 Reflection
4	Disease Control and Prevention: From Surveillance to Eradication	Memish ZA, Zumla A, Alhakeem RF, Assiri A, Turkestani A, Al Harby KD, Alyemni M, Dhafar K, Gautret P, Barbeschi M, McCloskey B, Heymann D, Al Rabeeah AA, Al-Tawfiq JA. Hajj: infectious disease surveillance and control. <i>Lancet</i> . 2014 Jun 14;383(9934):2073-2082. doi: 10.1016/S0140-6736(14)60381-0. Epub 2014 May 20. PMID: 24857703; PMCID: PMC7137990.	Module 4 Reflection
5	Outbreak Investigation and Response	Tulchinsky TH. John Snow, Cholera, the Broad Street Pump; Waterborne Diseases Then and Now. <i>Case Studies in Public Health</i> . 2018:77-99. doi: 10.1016/B978-0-12-804571-8.00017-2. Epub 2018 Mar 30. PMCID: PMC7150208.	Module 5 Reflection
6	Social and Economic Factors in ID Epidemiology	Paquette CE, Syvertsen JL, Pollini RA. Stigma at every turn: Health services experiences among people who inject drugs. <i>Int J Drug Policy</i> . 2018 Jul;57:104-110. doi: 10.1016/j.drugpo.2018.04.004. Epub 2018 Apr 30. PMID: 29715589; PMCID: PMC5994194.	Module 6 Reflection
7	Antimicrobial Resistance: Spotlight on Enteric Infections	Global burden of bacterial antimicrobial resistance 1990–2021: a systematic analysis with forecasts to 2050 Naghavi, Mohsen et al. <i>The Lancet</i> , Volume 404, Issue 10459, 1199 - 1226	Module 7 Reflection
8	Zoonotic and Vector Borne Disease: Spotlight on Malaria	Tizifa TA, Kabaghe AN, McCann RS, van den Berg H, Van Vugt M, Phiri KS. Prevention Efforts for Malaria. <i>Curr Trop Med Rep</i> . 2018;5(1):41-50. doi: 10.1007/s40475-018-0133-y. Epub 2018 Feb 8. PMID: 29629252; PMCID: PMC5879044.	Project and Poster Session Drafts
9	HIV/AIDS	Govender RD, Hashim MJ, Khan MA, Mustafa H, Khan G. Global Epidemiology of HIV/AIDS: A Resurgence in North America and Europe. <i>J Epidemiol Glob Health</i> . 2021 Sep;11(3):296-301. doi: 10.2991/jegh.k.210621.001. Epub 2021 Jun 29. PMID: 34270183; PMCID: PMC8435868.	Module 9 Reflection
SPRING BREAK			
10	Respiratory Diseases: Spotlight on Tuberculosis and COVID-19	MacNeil A, Glaziou P, Sismanidis C, Date A, Maloney S, Floyd K. Global Epidemiology of Tuberculosis and Progress Toward Meeting Global Targets - Worldwide, 2018. <i>MMWR Morb Mortal Wkly Rep</i> . 2020 Mar 20;69(11):281-285. doi: 10.15585/mmwr.mm6911a2. PMID: 32191687; PMCID: PMC7739980.	Module 10 Reflection
11	Graduate Student Presentations	NA	Graduate Student Presentations
12	Undergraduate Poster Sessions	NA	Undergraduate Poster Sessions
13	TBD: Guest lecture	TBD	Module 13 Reflection
14	TBD: Guest lecture	TBD	Module 14 Reflection

*****Bold indicates Program Competencies, Domains, and Concepts aligned with this course** (<https://cph.osu.edu/students/competencies>).

BSPH Foundational (Core) Competencies	BSPH – Environmental Public Health Specialization Competencies	BSPH – Public Health Sociology Specialization Competencies	CEPH Domains	CEPH Cross-Cutting Concepts
<p>1. Summarize the historic milestones in public health which have influenced current roles and responsibilities of current public health agencies, organizations and systems.</p> <p>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.</p> <p>3. Discuss various approaches/strategies for identification, response and intervention to address and attempt to resolve common public health issues.</p> <p>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.</p> <p>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.</p> <p>6. Communicate public health information, in both oral and written forms, through a variety of media and to diverse audiences.</p> <p>7. Locate, use, evaluate and synthesize public health information.</p>	<p>1. Use the Environmental Science Health model to explain environmentally- related exposures and human diseases</p> <p>2. Apply principles of math, chemistry, biology to the applied science of environmental public health.</p> <p>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.</p> <p>4. Describe how the quality of environmental media (air/ water/soil/food) is adversely affected by contamination from chemical, biological and physical agents.</p> <p>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.</p> <p>6. Explain and apply fundamental historical, statistical, epidemiological, toxicological, and Geographic Information Systems (GIS) concepts to environmental public health issues</p> <p>7. Summarize management and technical measures and approaches that control human exposure to environmental contaminants</p> <p>8. Explain the relationship between population growth, ecosystem health, sustainability and resilience, climate change, and environmental health Identify regulations, policies, standards, and guidelines applicable to the quality of air, water, soil, and food; and explain how the prevention or control of environmentally related human exposures and diseases, including changes to the lived environment, are applied to improve environmental public health.</p> <p>9. Apply the principles of environmental ethics and justice to environmental public health issues</p>	<p>1. Employ specific sociological theories, both classical and contemporary, to explain the unequal distribution of health among different subpopulations in the United States and throughout the world.</p> <p>2. Identify how these theories can extend our knowledge of disease processes and prevention and intervention opportunities beyond typical public health perspectives.</p> <p>3. Interpret population health patterns using rigorous methods of sociological inquiry that stem from both qualitative and quantitative reasoning, augmenting what public health researchers and practitioners typically use.</p> <p>4. Illustrate how sociological perspectives of stratification - particularly along the lines of race, class, and gender – expand typical public health perceptions and approaches</p> <p>5. 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.</p>	<p>1. The history and philosophy of public health as well as its core values, concepts and functions across the globe and in society</p> <p>2. The basic concepts, methods and tools of public health data collection, use and analysis and why evidence-based approaches are an essential part of public health practice</p> <p>3. The concepts of population health, and the basic processes, approaches and interventions that identify and address the major health-related needs and concerns of populations</p> <p>4. The underlying science of human health and disease, including opportunities for promoting and protecting health across the life course</p> <p>5. The socioeconomic, behavioral, biological, environmental and other factors that impact human health and contribute to health disparities</p> <p>6. The fundamental concepts and features of project implementation, including planning, assessment and evaluation</p> <p>7. The fundamental characteristics and organizational structures of the US health system as well as the differences between systems in other countries</p> <p>8. Basic concepts of legal, ethical, economic and regulatory dimensions of health care and public health policy and the roles, influences and responsibilities of the different agencies and branches of government</p> <p>9. Basic concepts of public health-specific communication, including technical and professional writing and the use of mass media and electronic technology</p>	<p>1. Advocacy for protection and promotion of the public’s health at all levels of society</p> <p>2. Community dynamics</p> <p>3. Critical thinking and creativity</p> <p>4. Cultural contexts in which public health professionals work</p> <p>5. Ethical decision making as related to self and society</p> <p>6. Independent work and a personal work ethic</p> <p>7. Networking</p> <p>8. Organizational dynamics</p> <p>9. Professionalism</p> <p>10. Research methods</p> <p>11. Systems thinking</p> <p>12. Teamwork and leadership</p>