

University of Florida
College of Public Health & Health Professions Syllabus
PHC 6326 Environmental and One Health (3 credit hours)

Summer 2023

Delivery Format: Online (Asynchronous)

E-Learning Website (<https://ufl.instructure.com/courses/455923>)

Instructor Name: Tara Sabo-Attwood, PhD

Times: 3-hour each session

Email Address: sabo@phhp.ufl.edu

Office Hours: By appointment

Teaching Assistants: Karen Coker

Course Communications: canvas email

Prerequisites: Biological Sciences (BSC 2005), or Environmental Science (EVS 3000), or consent of the instructor

PURPOSE AND OUTCOME

Course Rationale and Overview

Worldwide, many public health challenges result from complex and inextricable interactions between humans, animals, and the environment, necessitating a systems approach, *One Health*, to addressing the challenges. This introductory level course addresses concepts, theories, and applications of environmental health sciences in the context of One Health. The course will cover how key biological and chemical agents affect human health in both developed and developing nations, and how a *One Health* approach is utilized to address these health issues. The course combines lectures, discussions, and a class project.

Relation to Program Outcomes

This course provides primary gains or reinforcement of the following competencies:

1. Describe to specific communities or general populations the direct and indirect human and ecological effects of major environmental agents
2. Describe genetic, physiological, and psychosocial factors that affect susceptibility to adverse health outcomes following environmental exposure(s)
3. Specify approaches for assessing, preventing, and controlling environmental hazards that pose risks to human health and the environment
4. Develop testable hypotheses and models to evaluate biological and chemical environmental exposures

Course Objectives and/or Goals

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

1. Describe key concepts and theories of environmental health science and its major roles in one health
2. Identify and discuss environmental origins and determinants of health as related to exemplary diseases of human-animal-environment linkages
3. Determine the exposure pathways for key toxins and pathogens, including human-animal-environmental exposure, vector-borne, waterborne, and airborne transmission
4. Assess the effects of global environmental change on health and how both local and global factors affect disease transmission within and between countries
5. Identify and examine major environmental health interventions used to prevent disease and improve human and animal health at the individual, community, and population levels
6. Apply the one health systems approach for addressing interdisciplinary environmental health problems

Instructional Methods

1. Lectures are for orientation. Students are responsible for all the material presented in the lectures and are strongly urged to complete assigned readings
2. Readings and resources: Required readings and resources will be posted in the course site
3. Assessments: A variety of assessments will be used in this course, including exams, and a special project and discussion

What is expected of you?

You are expected to actively engage in the course throughout the semester. Your participation fosters a rich course experience for you and your peers that facilitates overall mastery of the course objectives.

Course Materials and Technology

Suggested Textbooks

1. Environmental Health: from Global to Local (3rd edition). Howard Frumkin, Jossey-Bass, Inc., 2016 (EH)
2. One Health: People, Animals, and the Environment. Ronald M. Atlas & Stanley Maloy, ASP Press, 2014 (OH)

In addition to the textbooks, literatures for specific lectures are required (see reading list below). All textbooks and literatures are available electronically through the University of Florida Library.

e-Learning in Canvas site

There will be an online site for this course in Canvas, the learning management system supported by the University. Log in at <https://elearning.ufl.edu/> and go to the course site. Here, I will post the syllabus, lecture presentations, exam reviews, and allow for discussions/chats (e.g. on exams and the class project) amongst the students and course leaders. You will also turn in your class project report through this site. Once the course begins, all communication will take place through the e-Learning in Canvas site. This includes all emails. This will eliminate any issues with students not getting emails due to connection problems. It will be your responsibility to check the site on a routine basis to keep up with announcements, emails, and course modifications. For technical support related to course materials and links, please contact me.

Reading list (RL)

1. Corvalán C, Hales S, McMichael AJ, Millennium Ecosystem Assessment (Program), World Health Organization. Ecosystems and human well-being: health synthesis. Geneva, Switzerland: World Health Organization; 2005. (read page 1-24)
2. Eisenberg JN, Desai MA, Levy K, Bates SJ, Liang S, Naumoff K, et al. Environmental determinants of infectious disease: a framework for tracking causal links and guiding public health research. *Environ Health Perspect*. 2007;115(8):1216-23. doi: 10.1289/ehp.9806. PubMed PMID: 17687450; PubMed Central PMCID: PMC1940110.
3. Prüss-Üstün A, Wolf J., Corvalán C, Ros R., Neira M (2016), World Health Organization. Preventing disease through healthy environments: A global assessment of the burden of disease from environmental risks. Geneva, Switzerland: World Health Organization; 2016. (Chapter 2: Methods, Page 2-9) (<https://www.who.int/publications/i/item/9789241565196>)
4. Carlton EJ, Liang S, McDowell JZ, Li HZ, Luo W, Remais JV. Regional disparities in the burden of disease attributable to unsafe water and poor sanitation in China. *B World Health Organ*. 2012; **90**(8): 578-87.
5. Smith KR, Corvalan CF, Kjellstrom T. How much global ill health is attributable to environmental factors? *Epidemiology*. 1999; **10**(5): 573-84.
6. Feingold BJ, Vegosen L, Davis M, Leibler J, Peterson A, Silbergeld EK: A niche for infectious disease in environmental health: rethinking the toxicological paradigm. *Environ Health Perspect* 2010, **118**(8):1165-1172.
7. Lin HH, Ezzati M, Murray M: Tobacco smoke, indoor air pollution and tuberculosis: a systematic review and meta-analysis. *PLoS Med* 2007, **4**(1):e20.
8. Wu, X., Nethery, R., Sabath, M.B., Braun, D., Dominici, F. Exposure to air pollution and COVID-19 mortality in the United States. 2020 (https://github.com/wxwx1993/PM_COVID/blob/master/Manuscript/PM%20and%20COVID%20mortality.pdf)
9. Liang, S., Kintziger, K., Reaves, P., & Ryan, S. J. (2017). Climate change impacts on human health. In E. P. Chassignet, J. W. Jones, V. Misra, & J. Obeysekera (Eds.), *Florida's climate: Changes, variations, & impacts* (pp. 125–152). Gainesville, FL: Florida Climate Institute.
10. Parham, P. E., & Michael, E. Modeling the Effects of Weather and Climate Change on Malaria Transmission. *Environmental Health Perspectives*, 2001, **118**(5), 620-626. doi: 10.1289/ehp.0901256
11. Zinsstag J, Crump L, Schelling E, Hattendorf J, Maidane YO, Ali KO, Muhammed A, Umer AA, Aliyi F, Nooh F et al: Climate change and One Health. *FEMS Microbiol Lett* 2018, **365**(11).
12. Ngwa, M., Liang, S., Kracalik, I., Morris, L., Blackburn, J., Mbam, L., Baonga Ba Pouth, S.F., Teboh, A., Yang, Y., Sugimoto, J., Morris, J.G., Jr. (2016). Cholera in Cameroon, 2000-2012: spatial and temporal analysis at the operational (health district) and sub climate levels. *PLoS Negl Trop Dis* **10**(11): e0005105. doi:10.1371/journal.pntd.0005105

13. Yang, K., Lejeune J, Alsdorf. D, Lu, B., Shum CK, Liang S (2012). Global distribution of outbreaks of water-associated infectious diseases. *PLoS NTDs*; 6(2):e1483. (PMCID:PMC3279334)
14. World Health Organization. Environmental and agricultural drivers of infectious diseases of poverty. *In* Research Priorities for the Environment, Agriculture and Infectious Diseases of Poverty. The WHO Technical Report Series. The World Health Organization, 2013.
15. World Health Organization. Environment, agriculture and infectious diseases of poverty: selected example. *In* Research Priorities for the Environment, Agriculture and Infectious Diseases of Poverty. The WHO Technical Report Series. The World Health Organization, 2013.
16. Gong P, Liang S, Carlton EJ, Jiang Q, Wu J, Wang L, Remais JV: Urbanisation and health in China. *Lancet* 2012, 379(9818):843-852.
17. Liang S, Seto EYW, Remais JV, Zhong B, Yang CH, Hubbard A, et al. Environmental effects on parasitic disease transmission exemplified by schistosomiasis in western China. *Proc Natl Acad Sci USA*. 2007; **104**(17): 7110-5.
18. Galvani AP, Bauch CT, Anand M, Singer BH, Levin SA: Human-environment interactions in population and ecosystem health. *Proc Natl Acad Sci U S A* 2016, 113(51):14502-14506.

ACADEMIC REQUIREMENTS AND GRADING

Exams (55% overall) – Midterm (25%) and final exam (30%)

Midterm and final exams will test students' grasp of key knowledge and principles covered in class and applications of such knowledge in practice. The midterm will be worth 25% and the final will be worth 30% of your overall course grade. The final exam will be cumulative (i.e. based on materials covered in whole semester) but mostly on the 2nd half (i.e. from midterm and onward). For both midterm and final exam, a review question sheet, which is primarily based on lecture notes, will be posted on the course website one week before the exam. These exams will be conducted via the online proctoring service, Honorlock. The use of Honorlock does not require pre-scheduling by students. Prior to test start, students must be prepared to show picture ID. Students must have some administrative permissions on your computer, must take exams with no one else in the room, and will be monitored via their webcam during exams. More information about Honorlock will be posted in the course site. Please see the "Taking Exams" document posted in the course site and the information below on exam proctoring (<https://dce.ufl.edu/media/dceufledu/pdfs/Honorlock-Student-Exam-Preparation-Information.pdf>)

Class Project (45% overall)

Each student is required to undertake an individual class project relevant to environmental and one health. Projects may involve original research (e.g. a study involving data collection and analysis; *check with the instructor if a research project is envisioned that will involve human subjects*), analysis of secondary (including published) data, or modeling-based studies. The project should define a clear research question and study design. The class project consists of three components.

Project presentation (8% of grade): Students will need to present their class projects. The presentation is expected to be prepared in PowerPoint and presented in a 12~15-minute video, which will be posted in an unlisted posting in YouTube (<http://youtube.com>). Detailed information on this assignment and how to post in YouTube is posted in the Assignment tool within the course site.

Participation - peer comments (5% of grade): A discussion board will be posted for each project, and the students will be required to comment on work by other students in the class. The participation is graded based on the activities the student engaged in during discussion session. Grade for participation is based on the following scale.

- **Level of participation in discussion**
 - 80%-100% class projects
 - 50%-80% class projects
 - <50% class projects
 - No participation
- **Quality of post**
 - Appropriate comments: thoughtful, reflective, & respectful to others
 - Responsive and respectful to others
 - Responsive with limited effort (e.g. I agree with)
 - No participation

Written report (32%): Each student is expected to write a class project report. The final report should be within the page limit (doubled-spaced and 11 or 12 point font size) and follow a standard journal manuscript format (e.g. Introduction, Materials and Methods, Results, Discussion and/or Conclusions, References). To encourage steady progress in the class project throughout the semester, the final project will include the following due dates for ungraded assignments (half to one-page report on each):

- Week 6 – Topic and background of the proposed study due
- Week 8 – Proposed methodologies due

Grading rubrics for the project presentation and written report are found under each assignment in Canvas

The course assignments/activities are broken down into the following points:

Requirement	Due date	Points (%)
Midterm	07/01 – 07/07	25
Final	08/05 - 08/09	30
Class Project - presentation	07/28	8
Class Project - participation	07/29 – 08/04	5
Class Project – written report	08/05	32
TOTAL		100

Point system used (i.e., how do course points translate into letter grades):

Points earned	93-100%	90-92%	87-89%	83-86%	80-82%	77-79%	73-76%	70-72%	67-69%	63-66%	60-62%	Below 62%
Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E

Please be aware that a C- is not an acceptable grade for graduate students. In addition, a grade of C counts toward a graduate degree only if an equal number of credits in courses numbered 5000 or higher have been earned with an A.

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	WF	I	NG	S-U
Grade Points	4.0	3.67	3.33	3.0	2.67	2.33	2.0	1.67	1.33	1.0	0.67	0.0	0.0	0.0	0.0	0.0

For greater detail on the meaning of letter grades and university policies related to them, see the Registrar’s Grade Policy regulations at: <http://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Late Assignments and Make Up Work

Assignments turned in up to 24 hours late will be discounted 10% of the grade that they would otherwise receive. Assignments turned in more than 24 hours late will not be graded and will contribute zero points toward your final grade, unless arrangements have been made in advance with the instructor or in the case of extenuating circumstances. Extenuating circumstances will be addressed on a case-by-case basis. Missed assignments will contribute zero points toward your final grade.

Special Circumstances

In the event of exceptional situations that may interfere with your ability to perform an assignment or meet a deadline, contact the instructor as soon in advance of the deadline as possible. Such special cases will be dealt on an individual basis, provided that you have sufficient documentation. Please note: Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket

number will document the time and date of the problem. You MUST e-mail me within 24 hours of the technical difficulty if you wish to request a make-up.

Policy Related to Required Class Attendance

As an online asynchronous course there is no classroom attendance required. Student participation in the course site is tracked by the Canvas system and may be referenced in regards to student participation and course advancement. All faculty are bound by the UF policy for excused absences. For information regarding the UF Attendance Policy see the Registrar website for additional details: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Exam Proctoring Service

Honorlock will be used for online proctoring services for the exams in this course. This service will be used by all students taking this course online, regardless of whether you are an on-campus student or not. Detailed guidelines for this proctoring system are available on your course website.

STUDENT EXPECTATIONS, ROLES, AND OPPORTUNITIES FOR INPUT

Expectations Regarding Course Behavior

You are expected to maintain a civil tone and respect the opinions of others. While commenting on others' statements and ideas is encouraged, aggressive or patronizing tone and language are unacceptable and may result in the loss of your posting and discussion privileges. This type of unacceptable behavior and penalty may impact course and assignment grades, as applicable.

Privacy

If we move to online synchronous meetings (or hyflex), our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

Communication Guidelines

You are encouraged to contact the instructor and the TA by email using the “Inbox” in Canvas for clarification and assistance with the course material and the assignments, and for special issues that may arise. Weekday daytime (US Eastern Time) emails have the best chances of being answered quickly. Please only use the Canvas “Inbox” to communicate with the course instructor and/or TA. While the instructors and TAs will check their UFL email regularly, they will not be held responsible for email sent directly to their UFL addresses. The goal is to receive a reply within 48 hours during the work week (Monday through Friday) or a reply to a weekend email after the next week begins. Please do not anticipate replies to email during the weekend.

Academic Integrity

Students are expected to act in accordance with the University of Florida policy on academic integrity. As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge:

“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied:

“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”

It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For additional information regarding Academic Integrity, please see Student Conduct and Honor Code or the Graduate Student Website for additional details:

<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>

<http://gradschool.ufl.edu/students/introduction.html>

Please remember cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior. Plagiarism is especially damaging in an online learning environment and will be dealt with in an official way, according to University of Florida regulations. Incidents will be reported directly to the Office of Student Judicial Affairs and a formal procedure will be started in each and every case. There will be no informal incident resolution between student and instructor. Should you have any doubts on whether something constitutes plagiarism, please consult the many available resources on the topic, e.g. starting with <http://web.uflib.ufl.edu/msl/subjects/Physics/StudentPlagiarism.html>, or contact the instructor in advance. There is also a reference posted in the course site, in the Course Help link. As you submit assignments, you will have the opportunity to check it for unintentional plagiarism using Turnitin®, the same software that instructors will use to check your work. You are encouraged to take advantage of this option. If you turn in assignments that are plagiarized, you will receive zero points for that assignment.

You are expected to turn in original work in this course. This means that when answering assignment questions, writing papers, posting discussions, etc., you will be expected to write your responses in your own words. You **MAY NOT** copy answers word for word from any course materials or outside sources. On occasion it may be useful to provide a quote from course materials or outside sources in which case you must properly cite the source and place the quote in quotation marks. That being said we urge you to avoid excessive quotation as it does little to demonstrate your understanding of course material.

Online Faculty Course Evaluation Process

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

SUPPORT SERVICES

Accommodations for Students with Disabilities

If you require classroom accommodation because of a disability, you must register with the Dean of Students Office <http://www.dso.ufl.edu> within the first week of class. The Dean of Students Office will provide documentation of accommodations to you, which you then give to me as the instructor of the course to receive accommodations. Please make sure you provide this letter to me by the end of the second week of the course. The College is committed to providing reasonable accommodations to assist students in their coursework.

Counseling and Student Health

Students sometimes experience stress from academic expectations and/or personal and interpersonal issues that may interfere with their academic performance. If you find yourself facing issues that have the potential to or are already negatively affecting your coursework, you are encouraged to talk with an instructor and/or seek help through University resources available to you.

- The Counseling and Wellness Center 352-392-1575 offers a variety of support services such as psychological assessment and intervention and assistance for math and test anxiety. Visit their web site for more information: <http://www.counseling.ufl.edu>. On line and in person assistance is available.
- You Matter We Care website: <http://www.umatter.ufl.edu/>. If you are feeling overwhelmed or stressed, you can reach out for help through the You Matter We Care website, which is staffed by Dean of Students and Counseling Center personnel.
- The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the web site at: <https://shcc.ufl.edu/>
- Crisis intervention is always available 24/7 from:
Alachua County Crisis Center
(352) 264-6789
<http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx>

Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.

Inclusive Learning Environment

Public health and health professions are based on the belief in human dignity and on respect for the individual. As we share our personal beliefs inside or outside of the classroom, it is always with the understanding that we value and respect diversity of background, experience, and opinion, where every individual feels valued. We believe in, and promote, openness and tolerance of differences in ethnicity and culture, and we respect differing personal, spiritual, religious and political values. We further believe that celebrating such diversity enriches the quality of the educational experiences we provide our students and enhances our own personal and professional relationships. We embrace The University of Florida's Non-Discrimination Policy, which reads, "The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans' Readjustment Assistance Act." If you have questions or concerns about your rights and responsibilities for inclusive learning environment, please see your instructor or refer to the Office of Multicultural & Diversity Affairs website: www.multicultural.ufl.edu

Topical Outline/Course Schedule

Week/Module Dates	Topic(s)	Lectures/videos	Notes	Relevant Readings	Assignments and Due Dates
<i>Getting Started</i> Week 1 5/13 – 5/19 Drs. Sabo-Attwood & Liang	<ul style="list-style-type: none"> • Course introduction • Introduction to global environmental health 	-INTRO -GECH 1 -GECH 2		1, 2 (RL); Chapter 2 (OH)	
Week 2 5/20 – 5/27 Dr. Liang	<ul style="list-style-type: none"> • Global burden of disease: concepts and applications • Environmental burden of disease 	-EBD 1 -EBD 2		3, 4, & 5 (RL)	
Week 3 5/28 – 6/2 (5/27 holiday) Drs. Liang and Bisesi	<ul style="list-style-type: none"> • Environmental epidemiology and ecology in one health • Environmental toxicology in one health 	-Environmental Epi -Toxicology		Chapter 1 & 3 (EH); Chapter 2 (EH); 6 (RL)	
Week 4 6/3 - 6/9 Dr. Havelaar	<ul style="list-style-type: none"> • Risk assessment in one health 	-General concepts of risk analysis -General principles of risk assessment		Chapter 29 (EH)	
Week 5 6/10 - 6/16 Dr. Capua	<ul style="list-style-type: none"> • One Health: systems thinking & circular health • Systems approaches in environmental & one health 	-Introduction to systems thinking		Chapters 4,5, & 6 (OH); 2 (RL)	Topic & background of class project due 6/16 11:59 PM
Week 6 6/17 - 6/23 Drs. Coker and Liang	<ul style="list-style-type: none"> • Indoor and outdoor pollution – a global perspective • Air pollution & infectious diseases • <i>Midterm Exam review</i> 	-Indoor/outdoor pollution - a global perspective		Chapter 12 (EH); Chapter 4.2 (OH); 7 & 8 (RL)	
Week 7 6/24 - 6/30 Summer Break					
Week 8 7/1 - 7/7 Dr. Liang	<i>Global environment & one health</i> <ul style="list-style-type: none"> • Environmental /climate change & one health • Transmission and control of vector-borne diseases 	-Global environmental change & health -Climate change & vector-borne diseases		Chapter 10 (EH) 9, 10, & 11 (RL)	Midterm exam Open 7/1 8:00 AM - 7/7 11:59 PM
Week 9 7/8 – 7/14	<ul style="list-style-type: none"> • Water/foods & one health 	-Waterborne diseases & one health			Proposed methodologies of class

Drs. Ali and Liang	<ul style="list-style-type: none"> • Foodborne diseases and the environment 				project due 7/14 11:59 PM
Week 10 7/15 – 7/21 Drs. Jeong and Liang	<ul style="list-style-type: none"> • Development & one health, Agriculture • Urbanization & health 	-Agriculture, antibiotics, and zoonotic diseases -The environment, agriculture, and schistosomiasis		Chapter 5 (OH) 14, 15, & 16 (RL)	
Week 11 7/22 - 7/28 Drs. Maurelli and McKune	<ul style="list-style-type: none"> • Emerging infectious diseases & one health • Social sciences in environmental & one health 	-The evolving human environment & infectious diseases -Social sciences in One Health		Chapter 11 (OH2); 17 & 18 (RL)	Project presentations posted by 7/28
Week 12 7/29 - 8/4 Dr. Liang	<ul style="list-style-type: none"> • Class project presentation • Final exam review 	Project presentation due; discussion posts open			Project presentation discussion comments opens 7/29 – due 8/4;
Week 13 8/5 – 8/11	<i>Final exam</i>				Written report due 8/5; 8/5 Final exam opens 8/5 8:00 AM – 8/11 11:59 PM

Other key dates: Midterm and final exam review will be posted on Week 6 and Week 11, respectively.