

**FYS GEOG 52**  
Political Ecology of Health and Disease

**Fall 2022 Class meets:**

Tuesdays and Thursdays 2-3:15pm

Classroom: Carolina Hall 204

Instructor: Michael Emch

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Office hours: Tuesdays and Thursdays 12:30-1:30 or by appointment

Office: Carolina Hall Room 304. Please set up appointment via email to book time.

**Course Description:**

This course examines the ecology of infectious diseases including environmental and anthropogenic drivers of those diseases. We will focus on several diseases including COVID-19, malaria, cholera, Ebola, and HIV/AIDS. The biophysical and evolutionary drivers of diseases will be examined as well as the political, economic, social, and environmental systems that shape health and disease across space and time. A political ecological framework is used to examine such topics as how political forces and economic interests help shape disease distributions and transmission. We will also examine how emerging infectious diseases such as COVID-19 spread through populations and how public health efforts and geographical and epidemiological modelling and analyses can be used to predict and limit their spread.

**Class Activities, Reading Reflections, and Exercises**

This is a seminar and thus it is designed to be interactive; it is not a lecture class. Class time will be comprised of different activities including discussions of readings/podcasts and working in groups on exercises focused on the ecology of health and disease. The readings are on Sakai under Resources and other materials such as podcasts and newspaper articles are linked to the schedule below. Most weeks we will discuss course materials on Tuesdays and do class activities on Thursdays.

The general rule in this class is that whenever you read something or do something you will write something and hand it in. The reflections should be at least  $\frac{3}{4}$  page, typed in 12-point font, and single-spaced (minimum 500 words) describing the 3-5 most useful things you learned from the materials for that week. Submit the reading reflections on Sakai Assignments for a particular week **before** class on Tuesday and be ready to discuss the material. Submit the reading reflections each week using the schedule below even if we get behind on the discussion.

We will also do class exercises in groups during the class. While you will work with other students on the exercises, each student will upload the exercise deliverables separately to their individual Sakai Assignments. The class will be interactive, so everyone needs to come prepared to contribute each day and be ready to participate in the class discussions and activities.

Unless otherwise instructed, please **put your devices away** (i.e., computers, phones, tablets) and **silence them** before you store them so you can be focused on the class activities.

**Discussion Lead**

All students will help lead the class discussion for one class period during the semester. Two students will be assigned to each class period. The discussion leaders will give a short presentation summarizing the material for the day at the beginning of the class (no more than 10 minutes). The discussion leaders will organize the rest of the class period by developing 3-4 discussion questions. The instructor will supplement the discussion leaders' questions with additional discussion questions. The point of the discussion is to have the class think more deeply about the materials that all students should have read/listened to/watched before the class period.

## **Final Project and Presentation**

Each student will conduct a disease ecology case study on one of the five diseases we focus on in this class: COVID-19, cholera, malaria, Ebola, or HIV/AIDS. The course materials provide a context for understanding the ecology of each of these diseases. You are to focus on a set of both downstream ecological factors and upstream political and/or economic forces that are driving disease distributions and transmission. You should use the knowledge you acquire in the class discussions, readings, podcasts, and other materials and activities as well as other papers that you identify through a literature review that you will conduct with help from our UNC librarians. You'll need to find at least five external sources that you'll cite as part of your project. They should be evidenced-based sources such as empirical journal articles. The deliverable is a digital Powerpoint presentation that you will present in class and that you will submit on Sakai Assignments. Presentations will be during the exam period and because all students will present during this three-hour period, they are limited to five minutes, and we'll also have a bit of time for questions for each speaker. You should thus practice your talk and time yourself to ensure your presentation is polished and it does not go over five minutes. Your presentation should start with a research question that you answer by interrogating the literature that you cite. You could, but are not required to, describe how your case study fits within the "Triangle of Human Ecology" framework, which we'll read about and discuss in class. You might also include a slide or two with background describing why the topic you've chosen is important. You should include a slide with findings from the cited sources and also a slide with your main conclusions. The last slide should be a list of the references you cited. The UNC library put together some resources for this class that are here: [guides.lib.unc.edu/geog052](https://guides.lib.unc.edu/geog052).

## **Sakai Portfolio**

Everything you produce in the course will be part of your Sakai portfolio. All documents should be in PDF format except the final project and discussion lead which will be in Powerpoint format. The items to be put in your portfolio include weekly reading reflections, nine in-class exercises, the discussion lead presentation, and the final project.

Each reading reflection in your portfolio should use the following naming convention with the week as part of the title: e.g., ReadingReflectionWeek2.pdf. Class exercise file names should include the exercise number, e.g., Exercise1.pdf. Each student should have 24 files in their portfolio at the end of the semester (13 reading reflections, 9 class exercises, 1 discussion lead document, and 1 final project) unless you miss more than two classes and then you will have make up assignments as well (see below).

## **Grading**

The course grade is based on the following activities:

- Weekly reading/podcast reflections 20% (13 items divided equally)
- Discussion lead 7.5%
- Class participation 7.5% (you must take part in the class discussions weekly)
- Classroom exercise outputs 35% (9 exercises divided equally)
- Final project and presentation: 30%

The grading scale is: A 93-100, A- 90-92.99, B+ 87-89.99, B 83-86.99, B- 80-82.99, C+ 77-79.99, C 73-76.99, C- 70-72.99, D+ 67-69.99, D 63-66.99, D- 60-62.99, F below 60.

It's important that you keep up with the material so you can actively take part in the class discussions and classroom group exercises which build on previous exercises and readings. You must therefore hand in the assignments including the reading reflections on time. If you hand in deliverables late, including reading reflections, then 10% will be deducted each week they are late. All deliverables must be uploaded to Sakai

Tuesday before class; the time that each item is uploaded is logged on the instructor Sakai account. Also, it is important that you attend class. Everyone gets two free absences and beyond that you will need to complete a makeup assignment. If you miss more than two classes, whether excused or unexcused, you will have to complete the makeup assignment that is described in the document called Makeupassignment on Sakai under the Make Up Assignments folder in Resources. Please email the instructor before class saying that you won't be in class each time you miss class. It is also important that all students hand in all assignments and for each assignment that you do not hand in, whether it is a reading reflection, exercise, or make up assignment 3% will be deducted from your final grade. There is thus a lot of incentive to hand in all assignments in this class.

## Schedule

Topics are listed in **bold**, materials are what you should read/watch/listen to each week before class on Tuesday and submit a reading reflection on that material before class. We will be discussing the material usually on Tuesdays. Activities are what we will be doing in class that week beyond discussing the materials, usually on Thursday. Deliverables are what is due on Tuesday before class.

<b>Week: Dates</b>	<b>Topics, Materials, and Activities</b>
Week 1: Aug 16 and 18	<p><b>Introduction</b></p> <p><u>Activities</u> Ice breaker and meet class members Goals of the class and introduction Create class discussion lead schedule</p> <p><u>Materials</u> Read the course syllabus in detail and explore the course Sakai site</p>
Week 2: Aug 23 and 25	<p><b>Emerging Infectious Diseases</b></p> <p><u>Materials</u> Emch, Root, Carrel Book Chapter 7 (pages 254-269) Discussion Lead: Mike</p> <p><u>Activities</u> Exercise 1: Emerging diseases</p> <p><u>Deliverables (Reading reflections usually due Tuesdays and exercises usually due on Thursdays- check Sakai calendar)</u> Week 2 reading reflection</p>
Week 3: Aug 30 and Sep 1	<p><b>Ebola ecology</b></p> <p><u>Materials</u> <a href="#">Ebola Virus Explained</a> Discussion Lead: Jacob, Olivia R</p> <p><u>Activities</u> Exercise 2: Ebola ecology</p> <p><u>Deliverables</u> Exercise 1 Week 3 reading reflection</p>

<p>Week 4: Sep 6 No Class Wellness Day, Sep 8 class will meet</p>	<p><b>Ecology of Health and Disease</b>  <u>Materials</u>  Emch, Root, Carrel Book Chapter 2 (pages 29-54)  Discussion Lead: MB, Hannah P</p> <p><u>Deliverables</u>  Exercise 2  Week 4 reading reflection</p>
<p>Week 5: Sep 13 and 15</p>	<p><b>Expanding Disease Ecology: Politics, Economics, and Gender</b>  <u>Materials</u>  Emch, Root, Carrel Book Chapter 3 (pages 76-93 &amp; 109-118)  Discussion Lead: Jocelyn W, Sophie</p> <p><u>Activities</u>  Exercise 3: Disease ecology project ideas</p> <p><u>Deliverables</u>  Week 5 reading reflection</p>
<p>Week 6: Sep 20 and 22</p>	<p><b>COVID-19 Ecology</b>  <u>Materials</u>  <a href="#">COVID-19 biology with Ralph Baric</a>- Watch first 36 minutes  <a href="#">COVID-19 in Africa Podcast</a>  Discussion Lead: Hannah P, Claire</p> <p><u>Activities</u>  Exercise 4: Political ecology of disease project ideas</p> <p><u>Deliverables</u>  Exercise 3  Week 6 reading reflection</p>
<p>Week 7: Sep 27 and 29</p>	<p><b>COVID-19 Ecology</b>  <u>Materials</u>  COVID-19 testing disparities paper (on Sakai)  Discussion Lead: Ella C, Langdon S</p> <p><u>Activities</u>  Meeting with UNC library staff Thursday  Exercise 5: Using the library to conduct a literature review.</p> <p><u>Deliverables</u>  Exercise 4  Week 7 reading reflection</p>

<p>Week 8: Oct 4 and 6</p>	<p><u>Materials</u>  <a href="#">COVID-19 Origins</a>  Discussion Lead: Hayden, Ella H</p> <p><u>Activities</u>  Exercise 6: COVID-19 ecology</p> <p><u>Deliverables</u>  Exercise 5  Week 8 reading reflection</p>
<p>Week 9: Oct 11 and 13</p>	<p><b>COVID-19 Ecology</b>  <u>Materials</u>  Worobey et al. 2022 paper (on Sakai)  Discussion Lead: Emery V, Katie Y</p> <p><u>Activities</u>  Exercise 6: COVID-19 ecology</p> <p><u>Deliverables</u>  Week 9 reading reflection</p>
<p>Week 10: Oct 18 class will meet, Oct 20 Fall Break no class</p>	<p><b>Cholera ecology</b>  <u>Materials</u>  <a href="#">NY Times article on cholera vaccine</a>  <a href="#">Online article: Cholera 101</a>  Discussion Lead: Arden E, Aayush P</p> <p><u>Deliverables</u>  Exercise 6  Week 10 reading reflection</p>
<p>Week 11: Oct 25 and 27</p>	<p><b>Cholera ecology</b>  <u>Materials</u>  Ali et al. (2005 paper)  Discussion Lead: Ethan J, Brooke S</p> <p><u>Activities</u>  Exercise 7: Cholera ecology</p> <p><u>Deliverables</u>  Week 11 reading reflection</p>
<p>Week 12: Nov 1 and 3</p>	<p><b>Malaria ecology</b>  <u>Materials</u>  <a href="#">Malaria Background- CDC</a>  <a href="#">The Winged Scourge. Disney 1943.</a>  Discussion Lead: Stella, Hailey</p> <p><u>Activities</u>  Exercise 8: Malaria ecology</p>

	<u>Deliverables</u> Exercise 7 Week 12 reading reflection
Week 13: Nov 8 and 10	<b>Malaria ecology</b> <u>Materials</u> <a href="#">Spatio-temporal patterns of malaria</a> Discussion Lead: Katie MM, Abby  <u>Activities</u> Exercise 8: Malaria ecology  <u>Deliverables</u> Week 13 reading reflection
Week 14: Nov 15 and 17	<b>HIV ecology</b> <u>Materials</u> <a href="#">Patient Zero: The Origin of AIDS</a> (from 16:30 until the 43:30) Discussion Lead: Kate, Eshan  <u>Activities</u> Exercise 9: HIV ecology  <u>Deliverables</u> Exercise 8 Week 14 reading reflection
Week 15: Nov 22 class, Nov 24 no class Thanksgiving	<b>HIV ecology</b> <u>Materials</u> <a href="#">Political ecology and HIV</a> Discussion Lead: Mike  <u>Deliverables</u> Week 15 reading reflection
Week 16: Nov 29 Last day of class	<b>HIV ecology</b>  <u>Activities</u> Exercise 9: HIV ecology  <u>Deliverables</u> Exercise 9 (due before final exam period)
Exam Time: Tuesday Dec 6 noon-3pm	<b>Final project presentations</b>  <u>Activities and Deliverables</u> Present project in Powerpoint and upload file to Assignments

## **Title IX**

Any student who is impacted by discrimination, harassment, interpersonal (relationship) violence, sexual violence, sexual exploitation, or stalking is encouraged to seek resources on campus or in the community. Please contact the Director of Title IX Compliance (Adrienne Allison – [Adrienne.allison@unc.edu](mailto:Adrienne.allison@unc.edu)), Report and Response Coordinators in the Equal Opportunity and Compliance Office ([reportandresponse@unc.edu](mailto:reportandresponse@unc.edu)), Counseling and Psychological Services (confidential), or the Gender Violence Services Coordinators ([gvscc@unc.edu](mailto:gvscc@unc.edu); confidential) to discuss your specific needs. Additional resources are available at [safe.unc.edu](http://safe.unc.edu).

## **Accessibility Resources and Service (ARS)**

The University of North Carolina at Chapel Hill facilitates the implementation of reasonable accommodations, including resources and services, for students with disabilities, chronic medical conditions, a temporary disability or pregnancy complications resulting in barriers to fully accessing University courses, programs and activities. Accommodations are determined through the Office of Accessibility Resources and Service (ARS) for individuals with documented qualifying disabilities in accordance with applicable state and federal laws. See the ARS Website for contact information: <https://ars.unc.edu> or email [ars@unc.edu](mailto:ars@unc.edu).

## **Honor Code**

UNC has a student-led [honor system](#). Academic integrity is at the heart of Carolina and we all are responsible for upholding the ideals of honor and integrity. The student-led Honor System is responsible for adjudicating any suspected violations of the Honor Code and all suspected instances of academic dishonesty will be reported to the Honor System. Information, including your responsibilities as a student is outlined in the Instrument of Student Judicial Governance. Your full participation and observance of the Honor Code is expected. Plagiarism in the form of "deliberate" or "reckless" representation of another's words, thoughts, or ideas as one's own without appropriate attribution to the original author in connection with submission of academic work, whether graded or otherwise, is a serious breach of the academic integrity demanded by the Honor Code and one of the most common forms of academic misconduct processed by the Honor System. Plagiarism can take many forms and there may be a number of reasons why it occurs. Quote and cite any words that are not your own. If you paraphrase the words of another, you must still give proper attribution. All academic work in this course is to be your own work, unless otherwise specifically provided such as the group exercises. It is your responsibility if you have any doubt to confirm whether or not collaboration is permitted.