



SYLLABUS

ENR 5335

Ecology of Infectious Disease
Spring 2022
3 credit hours

COURSE OVERVIEW

Instructors

Instructor: Risa Pesapane and Laura Pomeroy

Email address: Pesapane.1@osu.edu (preferred contact method) and Pomeroy.26@osu.edu (preferred contact method)

Office hours: Wednesdays and Thursdays 10-11am; or email to schedule a meeting another time

Prerequisites

Course description

This course provides an introduction to the dynamics and control of infectious disease in wildlife, including pathogens that may spillover to humans and domestic animals. We will also cover basic epidemiological models, management of disease in free-ranging and captive populations, and disease control policy. The content is suitable for upper level undergraduate, graduate, and professional students.

Course learning outcomes

By the end of this course, students should successfully be able to:

- A. Describe the impact of infectious disease in ecological systems.
- B. Apply general ecological and epidemiological concepts to infectious disease.

- C. Explain how anthropogenic disturbance of ecosystems affects infectious disease dynamics.
- D. Explain how infectious disease can be managed and the values associated with those management choices.
- E. Distinguish between theoretical and applied concepts of the ecology of infectious diseases in natural populations.
- F. Synthesize current debates in disease ecology from primary literature.

HOW THIS COURSE WORKS

Mode of delivery: This class will meet two times per week for lecture and discussion; Tuesdays and Thursdays from 12:45 to 2:05 in Cunz Hall (room TBD).

Pace of activities: This course is divided into **Weekly modules**. Students are expected to keep pace with Weekly deadlines.

Credit hours and work expectations: This is a **3-credit-hour course**. According to Ohio State policy (go.osu.edu/credithours), students should expect around 3 hours per week of time spent on direct instruction (instructor content and Carmen activities, for example) in addition to 6 hours of homework (reading and assignment preparation, for example) to receive a grade of (C) average.

Attendance and participation requirements: The following is a summary of students' expected participation:

- **Participating in classroom activities for attendance: REQUIRED**
Students are expected to attend all course meetings. If you have a situation that might cause you to miss an entire week of class, discuss it with me *as soon as possible*.
- **Weekly online drop-in sessions (Wednesday and Thursdays 10 am to 11 am, via Zoom): OPTIONAL**
Each week, Dr. Pomeroy or Dr. Pesapane will host an online zoom session where they will be available to assist students and answer students' questions. You can come for all or any part of these sessions to ask questions, for interactive feedback from instructors, or for comradery as you work on your assignments in the same virtual environment as your classmates. Please understand that virtual attendance at these sessions is completely optional and does not impact your grade in any way.
- **Individual office hours: OPTIONAL**
Both Dr. Pomeroy's and Dr. Pesapane are happy to schedule individual meetings either in person or via Zoom. We enjoy talking with students and encourage you to reach out to us whenever you want to! Participation in office hours is completely optional and does not impact your grade in any way.

COURSE MATERIALS AND TECHNOLOGIES

Textbooks

There is no required textbook. The readings will consist of journal articles and technical websites that will be provided through Carmen (<https://carmen.osu.edu>).

Course technology

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

Technology skills needed for this course

- Basic computer and web-browsing skills
- Navigating Carmen (go.osu.edu/canvasstudent)
- CarmenZoom virtual meetings (go.osu.edu/zoom-meetings)
- Recording a slide presentation with audio narration (go.osu.edu/video-assignment-guide)
- Recording, editing, and uploading video (go.osu.edu/video-assignment-guide)

Required equipment

- Computer: current Mac (MacOs) or PC (Windows 10) with high-speed internet connection
- Webcam: built-in or external webcam, fully installed and tested
- Microphone: built-in laptop or tablet mic or external microphone
- Other: a mobile device (smartphone or tablet) to use for BuckeyePass authentication

Required software

- Microsoft Office 365: All Ohio State students are now eligible for free Microsoft Office 365. Full instructions for downloading and installation can be found at go.osu.edu/office365help.

Carmen access

You will need to use BuckeyePass (buckeyepass.osu.edu) multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you take the following steps:

- Register multiple devices in case something happens to your primary device. Visit the BuckeyePass - Adding a Device help article for step-by-step instructions (go.osu.edu/add-device).
- Request passcodes to keep as a backup authentication option. When you see the Duo login screen on your computer, click **Enter a Passcode** and then click the **Text me new codes** button that appears. This will text you ten passcodes good for 365 days that can each be used once.
- Download the Duo Mobile application (go.osu.edu/install-duo) to all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service

If none of these options will meet the needs of your situation, you can contact the IT Service Desk at 614-688-4357(HELP) and IT support staff will work out a solution with you.

GRADING AND FACULTY RESPONSE

How your grade is calculated

Table 1. Grade distribution for graduate and professional students

Assignment Type	Number of assignments	Points per assignment	Points for this assignment type	Percentage of final grade
Assignments (A)	10	40	400	40%
Journal Article Discussions (B)	10	30	300	30%
Case study interim reports (C)	3	33	100	10%
Final case study presentation (C)	1	200	100	20%
Total			1000	100%

Table 2. Grade distribution for undergraduate students

Assignment Type	Number of assignments	Points per assignment	Points for this assignment type	Percentage of final grade
Assignments (A)	10	60	600	60%
Journal Article Discussions (B)	10	30	300	30%
Presentation peer-reviews (D)	1	100	100	10%
Total			1000	100%

See course schedule below for due dates.

Descriptions of major course assignments

There are four types of graded assignments for this course.

- A. Weekly assignments will be administered through Carmen. Assignments will be available on Thursday and will be due the following Thursday by 11:59 pm. Assignments will ask students to complete an activity and then answer questions about the activity as a one- to two-page write up. More information will be provided in Carmen. Weekly written assignments are graded **individually**.
- B. Weekly journal article discussions. Students will read one peer-reviewed journal article each week that emphasizes a research application of the Weekly disease ecology topic. Students will engage in a discussion of the article in a “journal club” format. All students will be encouraged to share their thoughts, questions, and ideas about the articles. More information on expectations will be provided in class and on Carmen. Journal article discussions are graded **individually**.
- C. Graduate and professional students will work together to give a case study presentation. Students will form groups of 3-4 students, choose a pathogen-host system to present, read peer reviewed literature on the pathogen-host system they chose, and present findings to the class via a recorded presentation that will be posted on Carmen. To encourage steady progress, three interim assignments will be due throughout the semester (on 2/1, 3/1, and 4/5). These interim assignments will be graded as complete or incomplete and should be about 1 page in length. Instructors will give extensive feedback on these interim written assignments that will guide students towards successful completion of their final projects. Additionally, the second-to-last week of class has been allotted for group project worktime. More information will be provided in class and on Carmen. Case study presentations are graded as a **group**.
- D. Undergraduate students are required to listen to group project presentations and complete a peer-review for each group presentation. Undergraduate students will complete the peer-reviews in Carmen. Peer reviews will be graded **individually**.

Graduate and professional students are required complete assignments A – C as described above. They may not complete assignments D nor E.

Undergraduate students are required to complete assignments A – B and D as described above. They may not complete assignment C. Undergraduates have the option to complete assignment E. If assignment E is completed, the grade earned can be substituted for the lowest grade earned on a single assignment (A).

Late assignments

All students will be given one time, 3-day extension for late assignments if needed per semester with no questions asked. Please contact me to discuss additional accommodations for extenuating circumstances.

Grading scale

A = 93.0 – 100	B- = 80.0 - 82.9	D+ = 67.0 - 69.9
A- = 90.0 - 92.9	C+ = 77.0 - 79.9	D = 60.0 - 66.9
B+ = 87.0 - 89.9	C = 73.0 - 76.9	E = Below 60
B = 83.0 - 86.9	C- = 70.0 - 72.9	

Instructor feedback and response time

I am providing the following list to give you an idea of my intended availability throughout the course. (Remember that you can call **614-688-4357(HELP)** at any time if you have a technical problem.)

- **Grading and feedback:** For large Weekly assignments, you can generally expect feedback within **7 days**.
- **Email:** I will reply to e-mails within **24 hours on school days**. **Students must include the course number in the subject line of the email** to guarantee a timely response.

OTHER COURSE POLICIES

Discussion and communication guidelines

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- **Writing style:** While there is no need to participate in class discussions as if you were writing a research paper, you should remember to write using good grammar, spelling, and punctuation. A more conversational tone is fine for non-academic topics.
- **Tone and civility:** Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across as intended.
- **Citing your sources:** When we have academic discussions, please cite your sources to back up what you say. For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.
- **Backing up your work:** Consider composing your academic posts in a word processor, where you can save your work, and then copying into the Carmen discussion.

Academic integrity policy

See **Descriptions of major course assignments**, above, for my specific guidelines about collaboration and academic integrity in the context of this class.

Ohio State's academic integrity policy

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

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

If I suspect that a student has committed academic misconduct in this course, I am obligated by university rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the university's *Code of Student Conduct* (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the university.

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

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

- Committee on Academic Misconduct web page (go.osu.edu/coam)
- Ten Suggestions for Preserving Academic Integrity (go.osu.edu/ten-suggestions)
- Eight Cardinal Rules of Academic Integrity (go.osu.edu/cardinal-rules)

Copyright for instructional materials

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

Safe & Healthy Buckeyes

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 result in a warning first, and disciplinary actions will be taken for repeated offenses.

Creating an environment free from harassment, discrimination, and sexual misconduct

The Ohio State University is committed to building and maintaining a community to reflect diversity and to improve opportunities for all. All Buckeyes have the right to be free from harassment, discrimination, and sexual misconduct. Ohio State does not discriminate on the basis of age, ancestry, color, disability, ethnicity, gender, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, pregnancy (childbirth, false pregnancy, termination of pregnancy, or recovery therefrom), race, religion, sex, sexual orientation, or protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment. Members of the university community also have the right to be free from all forms of sexual misconduct: sexual harassment, sexual assault, relationship violence, stalking, and sexual exploitation.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Office of Institutional Equity:

Online reporting form at equity.osu.edu,

Call 614-247-5838 or TTY 614-688-8605,

Or Email equity@osu.edu

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university employees have reporting responsibilities to the Office of Institutional Equity to ensure the university can take appropriate action:

All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.

The following employees have an obligation to report all other forms of sexual misconduct as soon as practicable but at most within five workdays of becoming aware of such information: 1. Any human resource professional (HRP); 2. Anyone who supervises faculty, staff, students, or volunteers; 3. Chair/director; and 4. Faculty member.

This course adheres to The Principles of Community adopted by the College of Food, Agricultural, and Environmental Sciences. These principles are located on the Carmen site for this course; and can also be found at <https://go.osu.edu/principlesofcommunity>. For additional information on Diversity, Equity, and Inclusion in CFAES, contact the CFAES Office for Diversity, Equity, and Inclusion (<https://equityandinclusion.cfaes.ohio-state.edu/>). If you have been a victim of or a witness to a bias incident, you can report it online and anonymously (if you choose) at <https://studentlife.osu.edu/bias/report-a-bias-incident.aspx>.

Your mental health

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 Counseling and Consultation Services (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 through the 24/7 National Prevention Hotline at 1-(800)-273-TALK or at suicidepreventionlifeline.org.

David Wirt, wirt.9@osu.edu, is the CFAES embedded mental health counselor. He is available for new consultations and to establish routine care. To schedule with David, please call 614-292-5766. Students should mention their affiliation with CFAES when setting up a phone screening.

ACCESSIBILITY ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

Requesting accommodations

The university strives to make all learning experiences as accessible as possible. In light of the current pandemic, students seeking to request COVID-related accommodations may do so through the university's request process, managed by Student Life Disability Services. 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, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

Accessibility of course technology

This course requires use of CarmenCanvas (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with your instructor.

- Canvas accessibility (go.osu.edu/canvas-accessibility)
- Streaming audio and video
- CarmenZoom accessibility (go.osu.edu/zoom-accessibility)
- Collaborative course tools

COURSE SCHEDULE

Refer to the Carmen course for up-to-date assignment due dates.

Week	Dates	Topic	Instructor	Assignments (Due Dates)
1	Tues 1/11	Course overview & Introduction to disease ecology	Pomeroy	*Group & topic selection (2/1)
	Thurs 1/13			
2	Tues 1/18	Pathogens & host responses to infection	Pomeroy	Written assignment #1 (1/27)
	Thurs 1/20			
3	Tues 1/25	Population disease ecology	Pomeroy	Written assignment #2 (2/3)
	Thurs 1/27			
4	Tues 2/1	SIR models (systems thinking tools)	Pomeroy	Written assignment #3 (2/10)
	Thurs 2/3			*Interim report #1 (3/1)
5	Tues 2/8	Disease control	Pomeroy	Written assignment #4 (2/17)
	Thurs 2/10			
6	Tues 2/15	Connectivity, movement, and spatial spread	Pesapane	Written assignment #5 (2/24)
	Thurs 2/17			
7	Tues 2/22	Host heterogeneity, fecundity, and behavior	Pesapane	Written assignment #6 (3/3)
	Thurs 2/24			
8	Tues 3/1	Biodiversity, community composition, and disease	Pomeroy	*Interim report #2 (4/5)
	Thurs 3/3			
9	Tues 3/8	Community disease ecology	Pesapane	Written assignment #7 (3/10)
	Thurs 3/10			
10	Tues 3/15	SPRING BREAK!		No assignments
	Thurs 3/17			
11	Tues 3/22	Case studies of multi-host pathogens	Pesapane	Written assignment #8 (3/24)
	Thurs 3/24			
12	Tues 3/29	Human & environmental influences	Pesapane	Written assignment #9 (3/31)
	Thurs 3/31			
13	Tues 4/5	Conservation & population management	Pesapane	
	Thurs 4/7			
14	Tues 4/12	Project work week	Pesapane & Pomeroy	*Presentations (4/19)
	Thurs 4/14			
15	Tues 4/19	Project Presentations	Pesapane & Pomeroy	^reviews (4/19)
	Fri 4/21			^reviews (4/21)