

ZOO4926/6927: Applied Ecology of Infectious Diseases, Spring 2016

Course Description

This course will focus on the role of ecology – interactions between species and of species with their environment – in shaping the impact of infectious diseases on populations.

4.0 Credit Hours

Pre-requisites and Co-requisites

- 1 year of college-level calculus (required)
- 1 year of statistics (strongly recommended)
- General Ecology, or an equivalent introductory Ecology course (strongly recommended)

Course Objectives

By the end of the course, the student will be able to do the following:

- Describe how ecological principles relate to infectious disease invasion and persistence and determine the impact of pathogens on populations
- Evaluate how ecological processes drive, or contribute to, observed patterns of infection, disease, and immunity in populations
- Describe how observation processes drive, or contribute to, observed patterns of infection, disease, and immunity in populations
- Understand how a pathogen's transmission ecology influences the efficacy of potential control options and the feasibility of elimination
- Succinctly describe infectious disease processes and patterns in a manner accessible to an interdisciplinary audience
- Understand the structure and purpose of each element of a grant proposal
- Write a grant proposal that draws on concepts from several disciplines to investigate an applied question in the field of infectious disease ecology

Instructor Information

Juliet Pulliam, PhD

Department of Biology and Emerging Pathogens Institute

Office: 617A Bartram Hall

Phone: 352-273-6684

E-mail: pulliam@ufl.edu

Website: pulliamlab.org

Note that Canvas mail should be used for all course-related communications.

Office Hours

Wednesday 11:30 – 12:30

Course Meeting Times

Wednesday 9:35 – 11:30 (Periods 3 and 4)
 Friday 9:35 – 11:30 (Periods 3 and 4)

Course Meeting Location

222 Carr Hall

Course Website

Course materials and related information will be posted on the course E-Learning (Canvas) website at <https://ufl.instructure.com/courses/325749>. You are responsible for all announcements made in class and/or posted on the course website for this course.

Required Materials

Readings: Journal articles will be assigned as part of each unit.

Software: TBD. All software required for this course will be publicly available software that can be downloaded free of charge.

Course Outline

<i>Unit</i>	<i>Dates</i>	<i>Topic</i>
0	Jan 6 – Jan 8	Course introduction and review of basic principles
1	Jan 8 – Jan 20	Ecology of infectious diseases in wildlife and domestic animals
2	Jan 20 – Jan 29	Cross species transmission
3	Jan 29 – Feb 12	Complex reservoirs and multihost pathogens
4	Feb 12 – Feb 26	Transmission ecology of vector-borne infections
5	Feb 26 – Mar 23	Stuttering transmission and invasion of novel hosts
	Feb 27 – Mar 6	Spring Break
6	Mar 23 – Apr 1	Transmission dynamics of infectious diseases in humans
7	Apr 1 – Apr 13	Ecology of infectious disease interventions
8	Apr 13 – Apr 20	Elimination and eradication of infectious diseases

Attendance Policy

Attendance is mandatory for all class sessions. To the extent possible, students must notify the instructor in advance of any unavoidable absences. The policies for allowable absences and make-up work follow the university attendance policies: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>. The student will remain responsible for scheduling any make-up work with the instructor.

Timely submission of assignments

Each student will be allowed one late assignment. No excuses will be necessary for this assignment but, more importantly, no additional extensions will be given for any reason, so don't use your late assignment frivolously. Other than the one allowed late assignment, a 10% deduction from the grade will be taken for each 24 hours or part thereof that an assignment is late.

Conduct in Class

Only approved electronic devices may be used in class. Approved electronic devices are laptop computers (when used to take notes or otherwise participate in classroom activities) and voice recording devices. Unapproved electronic devices include cell phones, video recorders, digital cameras and MP3 players.

Grading

Please note that the structure of and expectations for assignments may be adjusted as the course develops. Students will be notified of changes in class and via Canvas.

- In-class presentations: 4 @ 25 points each (20% of final grade)
- Written critiques: 8 @ 10 points each (16% of final grade)
- Midterm Exam: 100 points (20% of final grade)
- Peer review: 20 points (4% of final grade)
- Final Project (grant proposal): 200 points (40% of final grade)

Grading Scale

Point Range (%)	Letter Grade	GPA equivalent
≥ 93.00	A	4.0
90.0 – 92.9	A-	3.67
86.7 – 89.9	B+	3.33
83.3 – 86.6	B	3.0
80.0 – 83.2	B-	2.67
76.7 – 79.9	C+	2.33
73.3 – 76.6	C	2.0
70.0 – 73.2	C-	1.67
66.7 – 69.9	D+	1.33
63.3 – 66.6	D	1.0
60.0 – 63.2	D-	0.67
< 60.0	E	0

Note that a “C-“ will not be a qualifying grade for critical tracking courses. In order to graduate, students must have an overall GPA and an upper-division GPA of 2.0 or better (C or better). Note: a C- average is equivalent to a GPA of 1.67, and therefore, it does not satisfy this graduation requirement. For more information on grades and grading policies, please visit: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Make-up Exam Policy

Students will be given 1 week to complete the open-book mid-term exam. As such, it is expected that all students will be able to complete the exam within this timeframe. In the event of serious illness or family emergency, a student will be allowed to complete an alternative exam on a timeframe determined in consultation with the instructor.

Time Commitment

The UF College of Liberal Arts and Sciences assumes that each student will devote 3-4 hours per week per credit-hour, including time in lectures and labs. PCB4043C is 4 credits, so you should expect to devote 12-16 hours per week (on average) to this course. If you find yourself spending more than 16 hours per week on this course, discuss this with your instructor to see if you can refine your work habits. If you find yourself spending less than 12 hours per week on average, please recognize that you may have difficulty learning and comprehending the material, and this will probably be reflected in poor performance on assessments, causing you to receive a lower overall course grade. Please also recognize that some weeks will require more work and some less than the overall average.

UF Counseling Services

- Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:
 - UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, psychological and psychiatric services.
 - Career Resource Center, Reitz Union, 392-1601, career and job search services.
- Many students experience test anxiety and other stress related problems. “A Self Help Guide for Students” is available through the Counseling Center (301 Peabody Hall, 392-1575) and at their web site: <http://www.counseling.ufl.edu/cwc/>.

Honesty Policy

- All students registered at the University of Florida have agreed to comply with the following statement: “I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University.”

- In addition, on all work submitted for credit the following pledge is either required or implied: ***“On my honor I have neither given nor received unauthorized aid in doing this assignment.”***
- If you witness any instances of academic dishonesty in this class, please notify the instructor or contact the Student Honor Court (392-1631) or Cheating Hotline (392-6999). For additional information on Academic Honesty, please refer to the University of Florida Student Conduct Guidelines at:
<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>.

Accommodation for Students with Disabilities

- Students who will require a classroom accommodation for a disability must contact the Dean of Students Office of Disability Resources, in Peabody 202 (phone: 352-392-1261). Please see the University of Florida Disability Resources website for more information at: <http://www.dso.ufl.edu/drc>.
- It is the policy of the University of Florida that the student, not the instructor, is responsible for arranging accommodations when needed. Once notification is complete, the Dean of Students Office of Disability Resources will work with the instructor to accommodate the student.