

BIO 350: Infectious Disease Ecology, May Experience 2011

Course Objective: To gain insights into the impacts of ecosystem changes on emerging and reemerging infectious diseases in animals and plants (both domestic and wild) and how these diseases influence communities, ecosystems, and human welfare.

Instructors

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Requirements and Policies

Academic Integrity: Integrity gives the educational enterprise its legitimacy. Honesty, respect, and personal responsibility are principles that guide academic life at Furman, in and out of the classroom. Academic misconduct in any form (plagiarism, cheating, inappropriate collaboration, and other efforts to gain an unfair academic advantage) threatens the values of the campus community and will have severe consequences, such as failure in the course, and/or suspension or dismissal from the university. If you have any question about what constitutes plagiarism or any other form of academic misconduct, it is your responsibility to consult with us so that you will fully understand what we expect of you in this course. If you have any doubts, ask! You should also be familiar with the information on *Academic Integrity & Plagiarism* and *Academic Integrity at Furman* available at <http://www.furman.edu/integrity/index.htm>. Furman's policy on academic dishonesty can also be found at the same site. The bottom line is: Highest academic integrity is expected. Any violator will FAIL this course without further discussion.

Prerequisite: BIO 221 (Genetics). Be able to apply what you have learned from that course.

Attendance: Although we will not take attendance, perfect attendance is expected. Students with the highest scores typically have perfect or near-perfect attendance. Being absent from or not paying attention in the classroom/lab means that you have actively waived the privilege of getting any assistance from your instructors and are taking full responsibility for your own learning. There will be NO make-up for any missing lecture, field trip, lab exercise, exam, or assignment.

Disability Accommodations: Students with disabilities who need academic accommodations should provide us with notification from the Office of Disability Services (Gina Parris, Coordinator, Admin Bldg 207, phone: 2320 or 2322) by the end of the first week of class.

Learning Assessment: There will be two 90-point **exams** and two 90-point **oral presentations** (one presentation on the ecology of a human disease and a second presentation on the ecology of a non-human disease). At the beginning of four of the labs, there will be a 10-point **lab quiz**. There are 50 points for in-class **participation** and 50 points for an out-of-class **learning journal**. Please prepare a three-ring binder for your learning journal which consists of two parts. Part I is daily reflection in which you write at least a paragraph for this question: In today's lecture, I was intrigued by ____, so I learned ____ from ____ on my own. You will have a chance to share your daily reflection with the class the next day. Part II of the learning journal is presentation preparation in which you include your study notes for the diseases you will present. Every assignment is performed individually except the oral presentations, which can be prepared and given by pairs of students. There will be two presentation styles: conventional and *pecha kucha* (more information will be provided in class).

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

Tentative Schedule		
Date	Lecture (10:00 AM-12:00 noon)	Lab (2:00-4:30 PM)
5/11 W	Lecture: Introduction to principles of microbiology and ecology	
5/12 R	Lecture: Cholera and epidemiology Discussion: Presentation planning	Lab: Koch's postulates (Day 1) (Quiz #1) Discussion: Presentation planning
5/13 F	Lecture: Lyme disease (background) Film: <i>Under Our Skin</i> Lab follow-up: Koch's postulates (Day 2)	
5/16 M	Lecture: The ecology of Lyme disease Lecture: Land use/land cover and disease	
5/17 T	Lecture: Emergence and reemergence of bacterial diseases Discussion: Presentation planning	Lab: Furman Lake sampling Lab: Koch's postulates (Day 3) Lab: IDEXX (Quiz #2)
5/18 W	Lecture: Emergence and reemergence of viral diseases Lab: Koch's postulates (Day 4)	Lab: IDEXX results (10 min)
5/19 R	Lecture: Emergence and reemergence of parasitic diseases	Lab: PCR (Quiz #3), pour plates
5/20 F	Student presentations #1 Lab: gel electrophoresis (PCR results)	
5/23 M	Exam I	
5/24 T	Lecture: Pathogens and ecosystem function	Lab quiz
5/25 W	Centers for Disease Control and Prevention, all-day field trip	
5/26 R	Field trip: Collecting water samples (off campus)	Lab: Process water samples (EPA method), IDEXX, and PCR
5/27 F	Lecture: Climate change, disease, and extinction Lab: Gel electrophoresis for PCR results, count colonies, etc.	Lab: IDEXX results (10 min)
5/30 M	<i>No class - Memorial Day holiday</i>	
5/31 T	Lecture: Ecological management of disease Lecture: Methods and techniques Course evaluations	Lab: Data analysis Student presentations #2
6/1 W	Exam II	