

ZOO 4956: Overseas Studies (3 credits)

**UF in Cusco: Understanding Infectious Diseases**

Summer A 2018

Instructor: Marta L. Wayne

Office hours: Scheduled as needed

Email: [mlwayne@ufl.edu](mailto:mlwayne@ufl.edu) Phone: 352-246-8652

Text: Infectious Disease: A Very Short Introduction, Wayne & Bolker 2015

The goal of this course is to complement your service learning experiences in Cusco with a theoretical and empirical grounding in emerging infectious disease, particularly the ecology and evolution of emerging infectious disease. This course provides an overview of human infectious diseases. After an initial look at how epidemics grow, each week will focus on a different mode of transmission (e.g. air borne, food and water, sexual interactions) and the associated diseases.

**PREREQUISITES**

*Prereq: BSC 2011 and 2011L with minimum grades of C and undergraduate advisor permission.*

**COURSE REQUIREMENTS AND ASSESSMENT**

-Class participation	20%
-Simulation assignment	10%
-Short essays (4)	40%
-Final project	<u>30%</u>
	100%

**Attendance, participation and engagement**

These requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with UF policies that can be found in the online catalog at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

*Class meetings:* Attendance at class meetings is mandatory. The class will generally meet for two hours on each day as scheduled below. Changes to the schedule, e.g. to deal with unpredicted logistical challenges, will be announced with as much advance notice as possible and made in coordination with other scheduled activities. Due to the active learning nature of the class, your presence and participation are essential. Any missed classes for reasons other than sickness will be penalized by a 5% deduction from your grade as well as a zero for class participation on that day. If you are sick and thus absent, please notify me within 24 hours by WhatsApp or email. Class is offered for a letter grade; no S/U option is possible. The topics listed below are examples of what we will discuss in class, but we will also try to incorporate relevant experiences from your service placements, as well as news of ongoing or emerging epidemics.

	Week	Reading	Topic	Assignment(s)
Wed-Fri	1) 16-18 May	Chapter 1, 2	Orientation & Introduction	Short essay
Mon-Fri	2) 21-25 May	Chapter 2	Disease dynamics	SIR, $R_0$ simulations
Mon-Fri	3) 28-1 June	Chapter 5	GI infections	Short essay
Mon-Thu	4) 4-7 June	Chapter 3	Respiratory infections	Short essay
Mon-Fri	5) 11-15 June	Chapter 4	STIs	Short essay
Tue-Thu	6) 19-21 June	Chapter 6	Vector-borne infections	Final Project

*Class participation:* You must do the reading prior to coming to class. As part of your class participation grade, you will turn in three questions you had from the reading before class as well. The chapter and any related readings will be discussed early in the week. A short essay (described below) will be due in the middle of the week (usually Weds at 9 am). The latter half of the week will be devoted to activities like revising essays, small group work investigating related content and presenting to the class, and other active learning exercises. For example, for influenza, groups might research vaccination policies and/or popular perception of vaccines in Perú; models of seasonal dynamics in the Northern vs. Southern hemisphere; etc. Often the latter half of the week will involve synthesizing student essays (i.e., you must read one another's essays before class when directed; you will have at least 24 hours to do this and announcements will be posted).

*SIR simulation assignment:* At the end of the first full week (week 2 above), you will use simulation software called EpiFire to explore the relationship between how infectious a disease is and how many people end up getting infected. In lieu of a normal essay, you will make a figure illustrating this relationship using data you generate. This figure should be accompanied by a 50-100 word caption explaining the relationship.

*Short essays:* For weeks 1 and 3-5, you will write short (300-word) essays. The topics and style of the essays will vary, with assignment details provided to you the previous week. As an example, for the first essay, please consider the readings and in class discussions and argue that the epidemiology of Gainesville, Florida and Cusco, Perú are either fundamentally the same (describe parallels), or fundamentally different (highlight critical differences). As part of your short essay, please speak with at least one local person about their experiences and perceptions of infectious diseases and include this conversation and the person's name either within your essay or as a short appendix. Please provide detailed references. Due dates will be posted on Canvas; assignments are due at 9:00 am unless otherwise noted. Late assignments will be penalized 5 points each day or fraction thereof. Please note, in order to minimize computer "infections" when sharing one another's work, only pdf or txt submissions will be accepted.

*Final project:* For your final project, you will work in small groups to write a similar chapter to those in the book focusing on an emerging disease relevant to Perú (preferably in the Cusco region, but you may include the whole country). You suggest the parasite/disease, perhaps informed by your placements, for professor approval. Examples could include Bartonellosis, Mayaro, Chagas, etc. Through the lens of the disease you select, you can explore a range of relevant topics depending on your interest, from the legacy of colonialism on health care, to the possible role of global change in mosquito (and hence disease) distribution, to the use of evolutionary theory in understanding origins of outbreaks. The chapter should include detailed references from the primary literature as well as other sources you may wish to include; and should draw upon material from Chapter 2. The audience you are writing for is well-educated and scientifically literate, but not necessarily experts in your subject—essentially, your classmates. If you wish, you may incorporate illustrations or images.

## UNIVERSITY AND PROGRAM POLICIES

### Academic Integrity

All students are required to abide by the Academic Honesty Guidelines of the University. The UF Honor Code reads: "*We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.*" On all work submitted for credit by students 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." For more information please refer to <http://www.dso.ufl.edu/studentguide>.

### Accommodations

Students requesting classroom accommodation must register with the Dean of Students Office well in advance of the program. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. Additionally, because this is an international

program, students must meet with the instructor prior to arrival in Perú to determine how accommodations will be handled. For more information see <http://www.dso.ufl.edu/drc>.