

## ENY 4905 / 6905 ECOLOGY OF VECTOR-BORNE DISEASE – Problems in Entomology

**SHORT TITLE – Ecol Vect-Borne Dis**

**2 credit hours**

**Fall, 2014**

### **INSTRUCTOR**

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Office hours: Mon, Wed (9:00 - 10:00 a.m.)

### **DISTANCE DELIVERY - CANVAS**

**TEXTBOOKS** - No required textbook

Recommended texts:

*Disease Ecology: Community Structure and Pathogen Dynamics*, by S. Collinge & C. Ray

*Medical and Veterinary Entomology, 2<sup>nd</sup> edition*  
by G. Mullen & L. Durden

**LECTURE MATERIAL** - Provided by instructor

**PREREQUISITES:** *General Biology*

### **Course Purpose and Description**

Vector-borne pathogens affect humans, wildlife and agriculture more than any other group of infectious disease. Researchers, policy makers, and public health workers need a firm understanding of the ecology of vector-borne pathogens to effectively predict and interrupt epidemics.

This course begins with an introduction to the components inherent to vector-borne disease systems and the basic concepts of disease ecology. The course then focuses on various pathogens and how aspects of the environment, and host and vector biology influence pathogen transmission. Some of the questions that we will address include: Why do epidemics occur where and when they do? Why are some pathogens, such as dengue, re-emerging? Why do most vector-borne pathogens have limited geographic ranges?

### **LECTURE SCHEDULE – Fall Semester 2014**

#### **DATES and TOPICS**

Week 1 (Aug 26, 28) – Introduction: What is a vector? What is a parasite? What is a pathogen?

Week 2 (Sep 2, 4) – Arthropod vectors: Biology of Insects and mites

Week 3 (Sep 9, 11) – Non-arthropod-vectors: Biology of vertebrates

Week 4 (Sep 16, 18) – Ecology, Pathogen environmental adaptation (guest lecture)

Week 5 (Sep 23, 25) – Zoonoses and Anthroponoses

Week 6 (Sep 30, Oct 2) – SIR Models (with guest lecture)

Week 7 (**Oct 7, 9**) – **Exam 1**; Rabies, hantavirus and ebola

Week 8 (Oct 14, 16) - Dengue fever, yellow fever, and chikungunya

Week 9 (Oct 21, 23) – Bluetongue virus (guest lecture) and eastern equine encephalitis

Week 10 (Oct 28, 30) - West Nile virus

Week 11 (Nov 4, 6) – Plague and tularemia

Week 12 (Nov 13) – Huanglongbing / citrus greening (guest lecture)

Week 13 (Nov 18, 20) - Lyme disease

Week 14 (Nov 25) – Chagas Disease

Week 15 (Dec 2, 4) - Malaria and river blindness

Week 16 (**Dec 9**) – **Exam 2 (all students) & Review article due (ENY 6905 only)**

Critical dates: Exam 1: October 7, 2014; Exam 2 & Review article: December 9, 2014

**COURSE GOALS:** *By the end of this course, students will:*

1. Understand the distinctions between vector-borne and directly transmitted pathogens.
2. Have a working understanding of concepts of epidemiological models.
3. Understand the factors that limit, initiate, maintain and spread the transmission of vector-borne pathogens.
4. Gain knowledge about varied pathogens transmitted by diverse vector groups.

**COURSE WEBSITE:** Canvas login at <http://lss.at.ufl.edu>

**COURSE COMMUNICATIONS:** General questions should be posted on the course discussion board. Private questions about grades and course difficulties should be sent to [nburkettcadena@ufl.edu](mailto:nburkettcadena@ufl.edu).

Requirements for class attendance and make-up exams in this course are consistent with university policies that can be found at:

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

Student performance will be evaluated by two examinations (mid-term and non-cumulative final). Grades are determined based on exam scores. 90-100=A; 80-89=B; 70-79=C; 60-69=D; 0-59=F.

Grades cannot be provided over the telephone or by email, but will be available on Canvas in the Gradebook tab.

\*\* Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail [nburkettcadena@ufl.edu](mailto:nburkettcadena@ufl.edu) within 24 hours of the technical difficulty if you wish to request a make-up.

Very important information on UF grading policies, including Withdrawal, Incomplete grades, and assigning grade points may be found at:

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

### **FEEDBACK:**

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.

UF students are bound by The Honor Pledge, which states that members of the University of Florida community pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. 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 The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honorcode/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

## **LECTURES:**

Lectures can be accessed in Canvas, by going to the Canvas login- <https://lss.at.ufl.edu>. The student's UF Gatorlink username and password are necessary to log into the system. Tutorials are available in Canvas under "Help," if needed.

## **TECHNOLOGY REQUIREMENTS:**

Students must have access to a computer that can view PowerPoint, Flash, and .pdf files, has adequate memory and speed, and meets the minimum standards for UF computer use is needed. The following website explains the University of Florida computer hardware and software policy: [http://dell.techhub.ufl.edu/computer\\_requirement.html](http://dell.techhub.ufl.edu/computer_requirement.html). Contact the UF Computing Help Desk (352-392-4357; helpdesk@ufl.edu) with any technology problems.

## **COMPLAINTS ABOUT DISTANCE COURSES?**

The instructor will work with you to resolve complaints, however each online distance learning program has a process for, and will make every attempt to resolve, student complaints within its academic and administrative departments at the program level.

See <http://distance.ufl.edu/student-complaints> for more details.

## **STUDENTS WITH DISABILITIES:**

Students requesting accommodation for disabilities must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drc/>). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

## **GETTING HELP:**

For issues with technical difficulties for Canvas, please contact the UF Help Desk at: [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu), (352) 392-HELP - select option 2, or <https://lss.at.ufl.edu/help.shtml>

Other resources are available at <http://www.distance.ufl.edu/getting-help> for:

- Counseling and Wellness resources
- Disability resources
- Resources for handling student concerns and complaints
- Library Help Desk support

## **GRADUATE COMPONENT (ENY6905):**

Students enrolled in the graduate course (ENY 6905) will be expected to submit a review article on the ecology of a vector-borne disease of their choosing. The format is flexible. The review should summarize relevant scientific literature and must include citations. The review must be a minimum of 2,500 words.

## NETIQUETTE:

It is important to recognize that the online classroom is in fact a classroom, and certain behaviors are expected when you communicate with both your peers and your instructors. These guidelines for online behavior and interaction are known as netiquette.

## SECURITY

Remember that your password is the only thing protecting you from pranks or more serious harm.

- Don't share your password with anyone
- Change your password if you think someone else might know it
- Always logout when you are finished using the system

## GENERAL GUIDELINES

When communicating online, you should always:

- Treat instructor with respect, even in email or in any other online communication
- Always use your professors' proper title: Dr. or Prof., or if you in doubt use Mr. or Ms.
- Unless specifically invited, don't refer to them by first name.
- Use clear and concise language
- Remember that all college level communication should have correct spelling and grammar
- Avoid slang terms such as "wassup?" and texting abbreviations such as "u" instead of "you"
- Use standard fonts such as Times New Roman and use a size 12 or 14 pt. font
- Avoid using the caps lock feature AS IT CAN BE INTERPRETTED AS YELLING
- Limit and possibly avoid the use of emoticons like :) or ☺
- Be cautious when using humor or sarcasm as tone is sometimes lost in an email or discussion post and your message might be taken seriously or offensive
- Be careful with personal information (both yours and other's)
- Do not send confidential patient information via e-mail

## EMAIL

When you send an email to your instructor, teaching assistant, or classmates, you should:

- Use a descriptive subject line
- Be brief
- Avoid attachments unless you are sure your recipients can open them
- Avoid HTML in favor of plain text
- Sign your message with your name and return e-mail address
- Think before you send the e-mail to more than one person. Does everyone really need to see your message?
- Be sure you REALLY want everyone to receive your response when you click, "reply all"
- Be sure that the message author intended for the information to be passed along before you click the "forward" button

## MESSAGE BOARD

When posting on the Discussion Board in your online class, you should:

- Make posts that are on topic and within the scope of the course material
- Take your posts seriously and review and edit your posts before sending
- Be as brief as possible while still making a thorough comment

- Always give proper credit when referencing or quoting another source
- Be sure to read all messages in a thread before replying
- Don't repeat someone else's post without adding something of your own to it
- Avoid short, generic replies such as, "I agree." You should include why you agree or add to the previous point
- Always be respectful of others' opinions even when they differ from your own
- When you disagree with someone, you should express your differing opinion in a respectful, non-critical way
- Do not make personal or insulting remarks
- Be open-minded