

**ENY-6665, Advanced Medical & Veterinary Entomology, 3 credits**  
**Distance Education**  
**Syllabus, Fall 2020**

**Instructor:** Sarah Maestas  
**Email:** [sarah.maestas@ufl.edu](mailto:sarah.maestas@ufl.edu)  
**Laboratory:** Entomology and Nematology Department, Room 3237  
**Office Hours:** By appointment  
**Co-Course Requirements:** ENY6665L (online)  
**Canvas Website:** <https://elearning.ufl.edu/> (login with UF Gatorlink username and password)

**Email:** Each student must have an active email account. The University of Florida requires that you obtain a student ID# and a Gatorlink email account as part of your registration process. The instructor may send class announcements to your Gatorlink email account. While many of you already have independent email accounts, you must also obtain a University of Florida Gatorlink email account for use as a registered student.

**Course Description:** This is a 3-credit course that presents the major insect, mite, and tick vectors of disease to humans and animals. Students will learn to identify and understand the life cycles, morphology, and behavior of mosquitoes, ticks, mites, lice, fleas, and other disease vectors. Students also will learn about major arthropod-transmitted disease cycles, including malaria, Lyme disease, West Nile virus, leishmaniasis, and plague. The interaction between the disease-causing pathogen and the arthropod vector will be covered, including *biological* and *mechanical* transmission of pathogens as well as the mechanical damage that a parasite inflicts on its host.

**Critical Thinking:** With international travel and movement of people from place to place, it is difficult to determine the origins of a disease outbreak. Students will be expected to identify the vector, pathogen, and location of a person associated with a vector-borne disease. Critical thinking & communication will be evaluated by downloading a research paper from the course website, analyzing each of the specific portions of the paper (literature review, objectives, materials and methods, results, and discussion), and submitting an evaluation of the downloaded research paper as a Word document.

**Special Research Project:** Each student will be responsible for a written research report and presentation. The topic must be approved by the instructor and should be an in-depth review of the scientific literature. The research project report must be written as a scientific paper in Entomological Society of America format ([https://academic.oup.com/jme/pages/Manuscript\\_Preparation](https://academic.oup.com/jme/pages/Manuscript_Preparation)). PowerPoint presentation,

complete with a written script, should be 10 minutes and suitable for presentation at a scientific meeting.

### **Research Report Requirements:**

1. Select a specific topic. You may want to select from the list of topics that have been addressed in Annual Review of Entomology articles. Do not choose a general topic select one that addresses a very specific issue.
2. Your job is to dig up and read as many of the original literature papers as possible on the subject and summarize them for publication as an Annual Review of Entomology article of your own.
3. Update the publications with more current literature.
4. Include pertinent data tables and graphs from other researchers in the article.
5. The article must be written in Entomological Society of America format. The style manual is located at: (<http://www.entsoc.org/pubs/publish/style>)
6. The article must be at least 12 double-spaced pages in length. It should be set up as a manuscript ready for submission to ESA. I will take off for bad formatting.
7. The sections must be Title page, Abstract, Key Words, Body of Report, Literature Cited, Tables, List of Figures, and Figures on separate pages.

In addition to the report, I expect you to prepare a PowerPoint presentation on the subject of the report. The PowerPoint presentation should be in a format for presentation as a 10-minute paper at the ESA annual meeting. I expect the PowerPoint presentation to follow the material in the research report and be scripted so you could go to ESA and present the talk by reading the script.

### **Some Examples of Topics**

- Role of arthropod saliva in blood feeding
- Molecular systematics of Anopheles
- Manipulation of medically important insect vectors by their parasites
- Feather mites (Acari: Astigmata): ecology, behavior, and evolution
- The ascendancy of *Amblyomma americanum* as a vector of pathogens affecting humans in the United States
- Invasions by insect vectors of human disease
- Arthropod allergens and human health
- Iron metabolism in insects
- Predicting St. Louis encephalitis virus epidemics
- Mating strategies and spermiogenesis in Ixodid ticks
- Medicinal maggots: an ancient remedy for some contemporary afflictions
- *Culicoides* biting midges: their role as arbovirus vectors
- Emerging and resurging vector borne diseases
- Malaria parasite development in mosquitoes
- The biology, ecology, and management of the cat flea
- Bionomics of the face fly, *Musca autumnalis*

- Host immunity to ticks
- *Culicoides variipennis* and bluetongue-virus epidemiology in the United States
- Evolution of ticks
- Malaria: current and future prospects for control
- Tick salivary gland physiology
- Mosquito sugar feeding and reproductive energetics
- Onchocerciasis vector control: a chronological summary with comments on eradication, reinvasion, and insecticide resistance

**Course Lectures:** Course lectures are on the Canvas course website. Lecture notes and class schedule are also on the Canvas website and available for download.

**Lecture Topics:**

1. Introduction to Medical and Veterinary Entomology
2. Classification of Arthropod-Borne Diseases
3. Hematophagy, Disease Transmission and Epidemiology
4. Flies (Diptera) of Medical and Veterinary Importance
5. Moth flies: Leishmaniasis and Bartonellosis
6. Biting Midges (Ceratopogonidae)
7. Mosquito Taxonomy, Biology, and Behavior
8. Mosquito Viruses
9. Mosquito Surveillance
- 9a. Zika and Its Vectors
10. Malaria
11. Horse Flies, Deer Flies: EIA, Anaplasmosis
12. Muscid Flies
13. Myiasis (Muscoidea)
14. Myiasis (Skin Bots and Grubs) and Louse Flies
15. Black Flies of Medical and Veterinary Importance
16. Filariasis: Mansonellosis, Onchocerciasis
17. Lice of Medical and Veterinary Importance
18. Rickettsial Diseases
19. Mites: Rickettsialpox and Tsutsugamushi
20. Acariasis: Mange, Scabies, Chiggers
21. Spiders and Scorpions
22. Fleas of Medical and Veterinary Importance
23. Plague and Murine Typhus
24. Ticks of Medical and Veterinary Importance
25. Lyme Disease, Rocky Mountain Spotted Fever, Tularemia
26. True Bugs: Kissing Bugs and Bed Bugs
27. Chagas Disease
28. Tsetse Flies
29. Lepidoptera and Hymenoptera

**Text:** Gary Mullen and Lance Durden. 2019. *Medical and Veterinary Entomology, 3rd Edition*. Academic Press. ISBN #: 978-0-12-372500-4.

Available online through UF library here:

<https://uf.catalog.fcla.edu/uf.jsp?st=UF036582176&ix=pm&l=0&V=D&pm=1&fl=ba>

**Grading:** The exams will be timed exams. The final exam will be comprehensive of all lectures. The course is based on a total of 1200 points:

Critical Thinking & Communication Assignment	200 points
Special Research Project	200 points
Exam 1	200 points
Exam 2	200 points
Final exam	400 points

**Grading scale (%):**

- 90-100 A
- 88-<90 B+
- 80-<88 B
- 78-<80 C+
- 70-<78 C
- 68-<70 D+
- 60-<68 D
- <60 E

**Grades and Grade Points**

For information on current UF policies for assigning grade points, see

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

**Course Technology**

All students should have unlimited access to a computer with either Windows 7 or Mac OS X operating systems. Students should make sure to have access to a back-up computer in case of equipment failure. A high-speed Internet connection is highly recommended. Students will need speakers, microphone, and headphones to hear and record presentations. Microsoft Office PowerPoint is recommended for the presentation assignment but OpenOffice (freeware) may suffice <http://www.openoffice.org/>.

**Plagiarism**

The purpose in bringing to your attention the matter of plagiarism is to help train you to be an ethical person, not to impugn your character. Plagiarism is a serious problem in academia today, especially with the ease of obtaining information from the World Wide Web. Plagiarism is defined as representing the words **or ideas** of another person as one's own, without attribution to the source. All words and ideas must be attributed to a source unless they are considered common knowledge (i.e., widely known by many people and found in many different sources). There are many kinds of plagiarism, as you will read on the Guide to Plagiarism website referenced below. One of the most common forms is insufficient

paraphrasing. Even with attribution, you may be guilty of insufficient paraphrasing because your sentence too closely follows the content and structure of the cited author's sentence.

Plagiarism is unethical, unacceptable, and prohibited by the UF Student Honor Code (<http://www.dso.ufl.edu/sccr/honorcodes/honorcode.php>). The consequences for plagiarism at the University of Florida range from receiving a grade of zero for the plagiarized assignment or a failing grade for the course, to expulsion from the University for repeated offenses. Plagiarism after schooling calls into question one's integrity and can lead to banning of publication in journals and the loss of jobs/careers.

In some countries, it is an acceptable practice to write in a manner that faculty members at the University of Florida consider as plagiarism. Students studying at our university and with plans to publish their research in the English language need to know what plagiarism is and how to avoid it. Students who plagiarize will be caught and consequences will be applied. I check all written assignments using anti-plagiarism software called Turnitin® ([http://turnitin.com/en\\_us/products/originalitycheck](http://turnitin.com/en_us/products/originalitycheck)). Students who plagiarize will receive a grade of zero on the assignment. The second instance of plagiarism in the course will result in an automatic failing grade in the course. For further information and examples of plagiarism, read the George Smathers' Library Guide to Plagiarism at <http://www.uflib.ufl.edu/msl/07b/students.html> UF Policies Academic Honesty As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit 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."

**It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks** (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report to appropriate personnel any condition that facilitates academic misconduct. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see:

<http://www.dso.ufl.edu/SCCR/honorcodes/honorcode.php>.

### **Software Use**

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages

and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

### **Netiquette: Communication Courtesy**

All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats.

<http://teach.ufl.edu/wp-content/uploads/2012/08/NetiquetteGuideforOnlineCourses.pdf>

### **Online Course Evaluation Process**

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>.

### **Getting Help**

For issues with technical difficulties for E-learning in Canvas, please contact the UF Help Desk at:

- [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu)
- (352) 392-HELP - select option 2
- <https://lss.at.ufl.edu/help.shtml>

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 your instructor within 24 hours of the technical difficulty if you wish to request a make-up. Other resources are available at <http://www.distance.ufl.edu/getting-help> for:

- Counseling and Wellness resources
- Disability Resource Center
- Dean of Students Office
- Online Library Help Desk Complaints

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

### **Campus Helping Resources**

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students.

Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

*University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575,*  
[www.counseling.ufl.edu/cwc/](http://www.counseling.ufl.edu/cwc/)

Counseling Services  
Groups and Workshops  
Outreach and Consultation  
Self-Help Library  
Training Programs  
Community Provider Database

*Career Resource Center, First Floor JWRU, 392-1601, [www.crc.ufl.edu/](http://www.crc.ufl.edu/)*

### **Services for Students with Disabilities**

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation

0001 Reid Hall, 352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)