

**ENY-6665, Advanced Medical & Veterinary Entomology, 3 credits**  
**Distance Education**  
**Syllabus, Summer 2015**

**Instructor:** Dr. Philip G. Koehler  
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**Office:** Urban Entomology Building, Bldg 1278  
**Office Hours:** Weekdays 8:00-5:00  
**Co-Course Requirements:** ENY 6665L  
**Canvas Website:** <http://lss.at.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 post class notices 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 course presents the major insect, mite, and tick vectors of disease to man 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 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. Powerpoint presentation and written script will be a 10 minute scientific paper suitable for presentation at a scientific meeting.

**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.

**Text:** Gary Mullen and Lance Durden. 2009. *Medical and Veterinary Entomology, 2nd Edition*. Academic Press. ISBN #: 978-0-12-372500-4.

**Lecture Notebook:** Print this on your own. You can have it printed /bound at a copy store if you desire.

**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:

Exam 1	200 points
Exam 2	200 points
Final exam	400 points
Critical Thinking & Communication	200 points
Special research topic	200 points

**Grading scale (%):**

94-100	A
90-<94	A-
87-<90	B+
83-<87	B
80-<83	B-
77-<80	C+
74-<77	C
70-<74	C-
67-<70	D+
64-<67	D
60-<64	D-
<60	E

**Specific Evaluations:** Your grade in the lecture course will be based on the points you earn and determined by the percentage breakdown of points earned. The percentage is then applied to the grading scale. Exams 1 & 2 and identification exams are not comprehensive and will be timed exams. Final exams (lecture and laboratory) will be comprehensive. Your “critical thinking & communication paper” will be graded by evaluating the critique of the 5 sections of the downloaded research paper on a scale of 40 points per section. The research report will be graded based on the rubric provided on the course website.

**Lecture Subjects:**

1. Introduction to Med & Vet 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: EEE, VEE, SLE, Yellow fever, West Nile virus
9. Mosquito surveillance
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: Epidemic Typhus, etc.
19. Mites: Rickettsialpox and Tsutsugamushi
20. Mites and Acariasis: Mange, Scabies, Chiggers
21. Spiders and Scorpions
22. Fleas (Siphonaptera) 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 (Hemiptera): Kissing bugs and Bedbugs
27. Chagas Disease
28. Tsetse flies
29. Lepidoptera and Hymenoptera

### **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>

### **Absences and Make-Up Work**

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at:

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

### **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 any condition that facilitates academic misconduct to appropriate personnel. 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: <https://www.dso.ufl.edu/scsr/process/student-conduct-honor-code/>.

### **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.

### **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/)*

### **Plagiarism.**

Plagiarism is a serious violation of the [Student Honor Code](#). The Honor Code prohibits and defines plagiarism as follows:

Plagiarism. A student shall not represent as the student's own work all or any portion of the work of another. Plagiarism includes (but is not limited to):

a. Quoting oral or written materials, whether published or unpublished, without proper attribution.

b. Submitting a document or assignment which in whole or in part is identical or substantially identical to a document or assignment not authored by the student.

(University of Florida, Student Honor Code, 15 Aug. 2007

<<http://www.dso.ufl.edu/judicial/honorcode.php>>)

University of Florida students are responsible for reading, understanding, and abiding by the entire [Student Honor Code](#).

Important Tip: You should never copy and paste something from the Internet without providing the exact location from which it came.

### **UF Policy on E-mail:**

“Official University business email will be communicated to students using the University GatorLink email account. That is, official email will be sent exclusively to GatorLinkUserName@ufl.edu. The preferred email address recorded for all students will be the GatorLink address. This is the email address displayed in the online phonebook. Students may continue to use the forwarding mechanism to deliver their email to other mail services, if they

wish. However, it is the student's responsibility to insure that the forwarding address is current so that they receive official communications from the University".

## UF POLICIES:

**UNIVERSITY POLICY ON ACCOMMODATING 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.

**UNIVERSITY POLICY ON ACADEMIC MISCONDUCT:** Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at <http://www.dso.ufl.edu/students.php>.

**\*\*NETIQUETTE: COMMUNICATION COURTESY:** All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats. [Netiquette Guide for Online Courses](#)

## 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 resources
- Resources for handling student concerns and complaints
- Library Help Desk support

Should you have any complaints with your experience in this course please visit <http://www.distance.ufl.edu/student-complaints> to submit a complaint.

## 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.