ENY 4660: Medical and Veterinary Entomology

Asynchronous Online
Spring Semesters

Instructor:

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Office Hours: by appointment

Welcoming message from Dr. Burgess: I want to take this opportunity to welcome everyone to the class, and to encourage you to come talk to me whenever you need. Do not limit yourself to just course-relevant topics. I have a wide range of experiences as an undergraduate student, medical school student, graduate student, academic advisor, instructor, researcher, etc. I am eager to listen to you and help in any way I can! I want you to have the best possible experience in this class, and at the University of Florida. Let's talk!

Course Overview: Medical and Veterinary Entomology is a guide through the world of arthropod pests of humans and animals. Here we will discuss the unique attributes these arthropods have adapted to benefit from human and animal interaction (often at our expense)! This course will focus on important aspects of their biology, damage, and control that will be transferrable to a broad range of careers in numerous fields. By the end of this course, you will have a comprehensive understanding of the public health and animal systems that these arthropods affect.

Course Objectives

1. Identify countries/regions where prominent arthropod-borne diseases occur.
2. Understand morphology, life cycles, biology, and disease competency of relevant arthropods.
3. Explain economic damages and public health impacts of relevant arthropods.
4. Translate physiological terminology related to diseases and arthropod infestations.
5. Demonstrate higher order thinking skills, including synthesizing and integrating information and ideas. Example: recognizing trends and patterns in arthropod-borne disease cycles.
6. Investigate emerging problems in medical and veterinary entomology.
7. Develop appropriate study skills, strategies, and habits appropriate to lifelong learning.

Learning Outcomes

The University of Florida Student Learning Outcomes (SLO) of content, critical thinking, and communication will be addressed as follows:

- **Content:** *"Students demonstrate competence in the terminology, concepts, methodologies, and theories used within the subject area."* Students will obtain knowledge on prominent arthropod-borne diseases that affect humans and animals worldwide. Achievement of this outcome will be measured by five exams, weekly online quizzes, and a final exam.
- **Critical Thinking:** *"Students carefully and logically analyze information from multiple perspectives and develop reasoned solutions to problems within the subject area."* Critical thinking is the hallmark of decision-making, especially in science. Students will take past, current, and hypothetical arthropod-borne disease outbreaks and apply current multidisciplinary solutions to them to predict outcomes. Student success will be measured here by their participation in online discussion boards, online quizzes, and a written abstract based on an emerging problem in medical and veterinary entomology. In-class discussion will bolster their proficiency in this area as well.
- **Communication:** *"Students clearly and effectively communicate knowledge, ideas, and reasoning in written or oral forms appropriate to the subject area."* Students will learn to articulate their ideas to peers and listen to other viewpoints so that they experience reaching a scientific consensus. Students will be involved in in-class discussion and measured by graded online discussion board participation. Students also will work in small groups (graduates by themselves) to write an abstract on an emerging problem in medical and veterinary entomology.

Text Book

Mullen, G., and Durden, L. Medical and Veterinary Entomology, 3rd ed. Reserved at Marston Science Library and will be available through the university library, as well as on Canvas.

Tentative Schedule, Fall (by week)

		Activity (due date/time listed on Canvas)
Week 1	Syllabus, Impact of arthropods on human/animal health	**Introduction discussion board 1**
Week 2	Epidemiology	
	Control, economic damage, and eradication	
Week 3	Insecticides and basic toxicology	
		Quiz 1 due at 11:59 PM
Week 4	~~Morpho~~logy of parasitic arthropods	

	Exam 1	
Week 5	Flies (Diptera) of medical and veterinary importance	
	Bot flies and myiasis	
Week 6	Horse flies, deer flies, soldier flies	
	Black flies, sand flies, and biting midges (leishmania)	Quiz 2 due at 11:59 PM
Week 7	Tsetse flies and sheep keds	
	Exam 2	
Week 8	Mosquitoes – importance and ecology- West Nile virus and other encephalitids	
	Mosquitoes – yellow fever, dengue, and Zika viruses	
Week 9	Mosquitoes – malaria I	
	Mosquitoes – malaria II	**Mosquito virus discussion board 2**
Week 10	Mosquitoes - filariasis	
	Lice – intro to types	Quiz 3 due at 11:59 PM
Week 11	Lice – A pest and a vector	
	Exam 3	
Week 12	Mites and ticks	
	Ticks and humans	
Week 13	Mites, ticks, and livestock disease	**Ticks and humans discussion board 3**
	Spiders, scorpions, and Hymenoptera	Quiz 4 due at 11:59 PM
Week 14	Lepidoptera, cockroaches, and beetles	
Week 15	**Exam 4**	

	Forensic entomology (no PPT; Dr. Jason Byrd will lecture in-person)	
Week 16	True bugs – kissing bugs (Chagas), bed bugs	
	Fleas – plague and pandemics	**Chagas discussion board 4** Quiz 5 due at 11:59 PM
Final Exam	**Exam 5**	

Grading Policy

To reference the University of Florida grading policy, please visit:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Grading Scale

A	93-100%	Grades are not rounded. I only consider the number to the left of the decimal. Example: an 89.98% does not receive an A because it is an 89%. Grades are assigned based on performance not effort.
A-	90-92%	
B+	87-89%	
B	83-86%	
B-	80-82%	
C+	77-79%	
C	73-76%	
C-	70-72%	
D+	67-69%	
D	63-66%	
D-	60-62%	
E	0-59%	

Grade Breakdown

Activity (number)	Points Per Activity	Total Points
Exams (5)	100	500
Online Discussion Board Entries (4)	25	100
Online Quizzes (5)	10	50
Notes page (5)	2 per bullet point (see rubric)	variable
	TOTAL	**650**

Graded Work

Exams (graded) – There will be five exams. They will contain some combination of multiple choice, true/false, matching, and short answer questions. Content for each exam will come from in-class PowerPoints, general in-class discussion, discussion board topics, online quiz topics, and guest lecturers. You will have all class period to complete each exam. Each exam will be worth 100 points.

Online Discussion Board Entry (graded) – Periodically, you will be expected to participate in a discussion board through CANVAS. Dr. Burgess will pick a topic and the class will

have a discussion on that topic. Description of the discussion board will be on CANVAS. Each will be worth 25 points. You will receive 5 points for your post and 10 points each for two responses to other student's posts. I reserve the right to dock points if your post or responses to other's posts are not on-topic or advancing the discussion. This means things like "wow cool!" will not count as a response.

Online Quizzes (graded) – There will be 5 online quizzes over the course of the semester. Questions based on the lectures and assigned reading for the week. Quizzes are worth 10 points each.

Notes Page (graded extra credit) – Like so many things in science, there are numerous exceptions to the rule. There will be an opportunity for you to turn in 5 notes pages immediately preceding each of the five exams that challenge the facts in the slides. This is your chance to spend some time on your own to "go down the rabbit hole" and explore deeper knowledge on the subject matter we discuss in class. An example of a challenge would be to look up the different reported extrinsic incubation periods of dengue virus. In class we say it is 8-14 days but other sources such as the CDC say 8-12 days. Further, some papers will report 4-14 days. Which is it? The answer is "all of them depending on circumstances." The rubric for the notes page will be on CANVAS. This is your opportunity to get extra credit and can be used to significantly improve your grade if you are not performing as you'd like in other graded activities in the course.

University of Florida Policies

University Policy on Missing Class and Make-Up Work

Please see the following link for rules and regulations on absence and coursework make-up.
https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/

I ask that you please let me know as far ahead of time for planned absences. You can do so via email or a visit to my office hours.

University policy on accommodating 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 students who must then provide this documentation to the instructor when requesting accommodation. 0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/

Course Evaluation

It is your duty as a student to provide feedback on this course. Feedback will be completed in the form of online evaluations at https://evaluations.ufl.edu. The online evaluations are generally open during the final 2-3 weeks of the semester, but you will be notified of their availability. Results will be made available at https://evaluations.ufl.edu/results/.

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*." For more information on the Honor Code, please visit: https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/

Academic/Personal Help Services

The ramifications of academic dishonesty are often felt beyond your academic career, and can have real consequences for your chances at employment, advanced degree programs, etc. Often, academic dishonesty is committed in response to a stress in life, work, school, etc. The Counseling and Wellness Center on campus offers free, confidential services that can help you. They can be found at: www.counseling.ufl.edu/cwc/ (University Counseling and Wellness Center, 3190 Radio Rd. 352-392-1575).

Technical Support

Technical trouble with E-Learning should be addressed with the IT help desk at http://helpdesk.ufl.edu/. A ticket number should be obtained from IT before contacting Dr. Burgess. This ticket number will have a date and time stamp. Without a ticket number, you will not be allowed make-up of online assignments/quizzes/exams.