

IDS 2935: BITE ME? INSECTS AS DISEASE VECTORS

UF Quest 2, Fall 2023, 3 Credits

Section 20471: Monday (10:40 AM - 11:30 AM, Larsen Hall, Room 0310), Wednesday (10:40 AM - 11:30 AM, Turlington Hall, Room 2353)

Section 27699: Monday (10:40 AM - 11:30 AM, Larsen Hall, Room 0310), Wednesday 11:45 AM - 12:35 AM - McCarty Hall B, Room G108

INSTRUCTOR INFORMATION

Instructor

Dr. Tolulope Agunbiade

Contact Information & Hours

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Office hours: Fridays, 12 – 1 pm

Teaching Assistant

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Contact Information & Hours

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Office hours: Mondays and

Wednesdays, 4 – 5 pm

GENERAL INFORMATION

Course Description

Arthropod-borne diseases represent some of the most dangerous and major challenges facing human health. They have shaped the course of history and have remained a threat. Everyone has at one point or the other been exposed to the nuisance and bites of arthropods and, therefore, potentially to the diseases they may carry. The effects of these arthropod-borne diseases on human health are increasing and spreading. Factors such as the development of resistant parasite strains to the currently available drugs, and the evolution of insecticide resistance to the currently available insecticides account for this increase and spread. Other factors such as constantly changing climate, trade, unplanned urbanization, changes in agricultural practices, and human travel also aid the establishment of these diseases thereby intensifying disease transmission or causing disease emergence in areas where they were previously unknown. This is a multidisciplinary course that covers concepts and topics from the fields of entomology, medicine, public health, biology, parasitology, microbiology, and veterinary medicine. The course will address the interactions of arthropods to humans and the environment. It will present pressing issues relating to the impact of arthropods in public health and will also explore challenging questions such as “what are the emerging issues in vector biology and disease epidemiology”? and “what can be done to manage or prevent the occurrence of arthropod-borne diseases”?

Course Delivery

This course will explore content through lectures, in-class article discussions and reviews, group projects, and interactions with scientists at the USDA Center for Medical, Agricultural, and Veterinary Entomology, University of Florida. The in-class discussions will allow students to ask questions and discuss meaningful and thought-provoking topics about arthropods and human health. Group projects will foster student interaction and further aid their understanding of public health issues. The interactions with scientists at the USDA Center for Medical, Agricultural, and Veterinary Entomology will allow the students to better understand the research on arthropod-vectorated pathogens that are of major concern to the United States and the rest of the world.

Course Objectives

By the end of this course, you will be able to:

1. Describe the pathogenesis of arthropod-borne diseases in humans.
2. Describe the historical and contemporary significance of insect-host interactions.
3. Explain the global health impact of arthropod-borne diseases on human health.
4. Evaluate the drivers of disease transmission from a global perspective.
5. Demonstrate knowledge of disease control strategies and the inherent challenges.
6. Describe emergent arthropod-borne infectious diseases and strategies for their control.
7. Formulate and develop a plan for research into the impact and control of arthropod-borne diseases.
8. Communicate research on arthropod-borne diseases using oral and written skills.
9. Interact with scientists in the field of arthropod-borne disease research.
10. Relate knowledge gained in the classroom to real-world arthropod-borne disease issues.

Course Requirements

Required Textbook

There are no required textbooks for this course.

Prerequisites

There are no prerequisites for this course.

Minimum Technology Requirements

The University of Florida expects students entering an online program to acquire computer hardware and software appropriate to their degree program. Most computers are capable of meeting the following general requirements. A student's computer configuration should include:

- Webcam
- Microphone
- Broadband connection to the internet and related equipment (cable/DSL modem)
- Microsoft Office Suite installed (provided by the university)

Individual colleges may have additional requirements or recommendations, which students should review before starting their program.

Minimum Technical Skills

To complete your tasks in this course, you will need a basic understanding of operating a computer and using word processing software.

Materials/Supply Fees

There is no supply fee for this course.

Honorlock

Honorlock is an online proctoring service that allows students to take exams on-demand 24/7. There are no scheduling requirements or fees. You will need a laptop or desktop computer with a webcam, a microphone, and a photo ID. The webcam and microphone can be either integrated or external USB devices. Honorlock requires that you use the [Google Chrome](#) browser and that you must add the Honorlock extension to Chrome. For further information, FAQs, and technical support, please visit [Honorlock](#).

Zoom

Zoom is an easy-to-use video conferencing service available to all UF students, faculty, and staff that allows for meetings of up to 100 participants. You can find resources and help using Zoom at the [University of Florida's Zoom](#) website.

ASSIGNED READINGS

There are no required textbooks for this course. However, a list of required readings intended to aid the student's understanding of the topics will be made available to the students in Canvas. Students must also download and read the assigned readings before the in-class article discussion and review on Wednesdays.

STUDENT ASSESSMENT

Student assessments will be based on exam performance, article reviews, group projects, and submission of a self-reflection report. At the beginning of the semester, students are to join groups of 4-5 members maximum. The groups will work together on the history, impact, transmission, and management of an arthropod-borne disease.

Examinations

There will be four exams throughout the semester (50 points each). The exams will test the student's understanding of the literature and concepts taught in the course. The exams will include 25 multiple-choice, mix-and-match, and true/false questions. Each exam will be available and accessible in Canvas on Wednesday of the exam week. The exam will be proctored using Honorlock. The first exam will cover materials taught from weeks 1 to 4,

the second exam will cover materials taught from weeks 5 to 8, and the third exam will cover materials taught from weeks 9 to 12. The final comprehensive exam will cover all the materials taught in the class, including weeks 13 to 15.

Quizzes

There will be 14 quizzes throughout the semester (10 points each). Students are required to download and read the assigned readings every week. There will be quiz questions from the readings, and the lecture materials. The quizzes will be made available and accessible in Canvas from 8:00 am EST on Thursdays till 11:59 pm EST on Sundays. Once you begin the quiz, you will have 5 minutes to complete it in a single session. So, do not open the quiz until you are ready to complete it. There are 14 quizzes throughout the semester but your two lowest quiz scores for the semester will be dropped, and your grade for the quiz component will be based on the best 12 of 14 quizzes.

In-Class Reviews

Each in-person student must download and review the assigned reading(s) for each week before the in-class article review and discussion on Wednesdays. Each student must submit a 1-page summary and their review of the assigned reading(s) (10 points each) at the start of classes on Wednesdays. The review should be about the scientific content of the article and not about the writing format, font, margin, or editing issues of the paper. The PDFs of the assigned readings to be reviewed will be available to students in Canvas. Students' submissions will be evaluated using a rubric provided in Canvas.

Discussions in Perusall

For online students, discussions will be hosted in Perusall. Each module will have a selected reading from the assigned readings for you to annotate and discuss with each other. Each Perusall discussion will be worth 10 points.

Experiential Learning and Reflection Report

Students are required to interact with scientists at the USDA Center for Medical, Agricultural, and Veterinary Entomology. This will allow the students to learn more about arthropod-vector-borne diseases that are of major concern to the United States and the rest of the world.

Online students, please contact the course instructor if you cannot attend the Experiential Learning Activity.

After attending the Zoom interaction with scientists, students must submit a written report (50 points each) reflecting on their experiences and interactions with the scientists. They are to reflect on what they have learned, and the interactions with the scientists are relevant to their intellectual and personal development. For example, if given the opportunity, the kind of arthropod vector research they would like to do and how the outcome of their proposed research will reflect on public health issues in Florida, the United States, and the rest of the world. A template of the experiential learning reflection report to be filled out will be provided for the students in Canvas. The written reports are due by 5 pm of the due date. For each day a report is submitted past the deadline, 5 points will be deducted per day.

Group Project

The course content will be discussed under four broad headings in class. These are:

1. Historical aspects and impacts of arthropod-borne diseases.
2. Disease transmission by arthropod vectors.
3. Surveillance, management, and control of arthropod-borne diseases.
4. Emerging issues in arthropod-vector-borne diseases.

Students are required to work as a team in groups of about 4 to 5 on an arthropod-transmitted disease of major importance. The group project will be submitted in 4 stages:

- Assignment 1 (10 points) - this assignment involves submitting a topic of interest on an arthropod-borne disease to the instructor for approval.
- Assignment 2 (20 points) - this assignment provides background information about the arthropod-vector-borne disease selected in Assignment 1. Students are required to present a 3-page description of the history of the disease, the biology of the vector, the disease transmission cycle, and the impact of the disease. The report should be double-spaced, size 12 Times New Roman with 1-inch margin. Students should also provide a list of, at least, five references from primary literature sources. The references must be cited according to APA 7th reference style. Further instructions about citation style, how to structure the report, and the rubrics for evaluation will be posted in Canvas.
- Assignment 3 (20 points) - this assignment involves a 3-page description of the surveillance and management strategy or strategies against the disease selected in Assignment 1. It should also provide information on the implications of adopting this management technique. The report should be double-spaced, size 12 Times New Roman with 1-inch margin. Students should also provide a list of, at least, five references from primary literature sources. The references must be cited according to APA 7th reference style. Further information about the citation style will be provided on the course website in Canvas. Further instructions about citation style, how to structure the report, and the rubrics for evaluation will be posted in Canvas.
- Assignment 4 (30 points) - this assignment involves synthesizing details from assignments 1, 2, and 3. Students are required to submit a presentation on the selected arthropod-borne disease. Students can get creative with their presentation. It could be one of the following:
 - Written paper (not more than 8 pages, including figures, tables, and references)
 - Electronic Data Information Source (EDIS) publication
 - Video presentation (not longer than 10 minutes)
 - Infographic presentation
- Peer Evaluation: To evaluate individual contribution to the group project, each member of the team will evaluate every other student member in the group (20 points). Team member evaluation will be done using a rubric that will be provided in Canvas.

Participation

- **In-person students** will receive participation points for attending the lectures on Mondays and Wednesdays. Each week, you will receive a total of 5 points. There is a total of 70 participation and attendance points. You will be allowed two unexcused absences; after the second absence, you will lose points for each day you do not attend class. If you have a University Approved Absence, please submit documentation to the [Dean of Students Office](#).
- **Online students** will receive participation points for watching lecture videos in PlayPosit. Make you that you watch these videos until the very end to receive points. Each Module's PlayPosit value is worth 5 points, totaling 70 points. 5 points will be dropped at the end of the semester.

COURSE SCHEDULE

Week	Date	Day	Topic/Activity	Assessments
1. Historical Aspects and Impacts of Arthropod-Borne Diseases				
1	08/23	Wednesday	Course orientation	• Orientation quiz
	08/28	Monday	Lecture: Historical aspects of vector-borne diseases	
	08/30	Wednesday	• In-class article review 1	• Quiz 1 • Discussion 1
2	09/04	Monday	Lecture: Impact of arthropods on human health	
	09/06	Wednesday	• In-class article review 2	• Quiz 2 • Discussion 2
2. Disease Transmission by Arthropod Vectors				
3	09/11	Monday	Lecture: Arthropod transmission of pathogens	
	09/13	Wednesday	• In-class article review 3	• Quiz 3 • Discussion 3 • Assignments into groups for group project due
4	09/18	Monday	Lecture: Mosquito-borne diseases	
	09/20	Wednesday	• In-class article review 4	• Quiz 4 • Discussion 4
5	09/25	Monday	Lecture: Tick-borne diseases	• Group project Part 1 due
	09/27	Wednesday	• In-class article review 5	• Quiz 5 • Discussion 5 • Exam 1
6	10/02	Monday	Lecture: Flea-borne diseases	
	10/04	Wednesday	• In-class article review 6	• Quiz 6 • Discussion 6
7	10/09	Monday	Lecture: Sand-fly-transmitted diseases and other important vector-borne diseases	
	10/11	Wednesday	• In-class article review 7	• Quiz 7

				<ul style="list-style-type: none"> • Discussion 7
8	10/16	Monday	Lecture: Arthropods, diseases, and the military	
	10/18	Wednesday	<ul style="list-style-type: none"> • In-class article review 8 	<ul style="list-style-type: none"> • Quiz 8 • Discussion 8 • Exam 2
3. Surveillance, Management, and Control of Arthropod-Borne Diseases				
9	10/23	Monday	Lecture: Surveillance and management of arthropod-borne diseases	<ul style="list-style-type: none"> • Group project Part 2 due
	10/25	Wednesday	<ul style="list-style-type: none"> • In-class article review 9 	<ul style="list-style-type: none"> • Quiz 9 • Discussion 9
10	10/30	Monday	Lecture: Insecticides and public health – benefits, costs, and resistance	
	11/01	Wednesday	<ul style="list-style-type: none"> • In-class article review 10 	<ul style="list-style-type: none"> • Quiz 10 • Discussion 10 • Field visit to USDA Center for Medical, Agricultural and Veterinary Entomology, University of Florida
11	11/06	Monday	Lecture: Vaccines against arthropod-borne diseases	
	11/08	Wednesday	<ul style="list-style-type: none"> • In-class article review 11 	<ul style="list-style-type: none"> • Quiz 11 • Discussion 11 • Experiential learning reflection report due
12	11/13	Monday	Lecture: GMOs in public health and disease control	
	11/15	Wednesday	<ul style="list-style-type: none"> • In-class article review 12 	<ul style="list-style-type: none"> • Quiz 12 • Discussion 12 • Exam 3
4. Emerging Issues in Arthropod-Borne Diseases				
13	11/20	Monday	Lecture: Drivers of the emergence of arthropod-borne diseases	
	11/22	Wednesday	Thanksgiving	<ul style="list-style-type: none"> • Quiz 13 • Discussion 13 • Group project Part 2 due
14	11/27	Monday	Lecture: Invasive species and emerging arthropod-borne diseases	
	11/29	Wednesday	<ul style="list-style-type: none"> • In-class article review 13 	<ul style="list-style-type: none"> • Quiz 14 • Discussion 14 • Group project Part 3 due
15	12/04	Monday		<ul style="list-style-type: none"> • Group project Part 4 due

				<ul style="list-style-type: none"> Evaluation of individual contribution to group project due
	12/06	Wednesday	<ul style="list-style-type: none"> In-class article review 14 	
16	12/11	Monday	''	<ul style="list-style-type: none"> Final Comprehensive Exam

COURSE GRADING POLICY

Assignments will be graded, and scores posted within one week of the due date. However, this may change, and in this case, announcements will be made by the instructor or the TA.

Course requirements		Point value	Total points
Participation		5 each	70
Orientation module assignments		10 each	20
Exams		50 each	200
Quizzes		10 each	120
In-class article review and discussion		10 each	140
Group project	Part 1	10	10
	Part 2	20	20
	Part 3	20	20
	Part 4	30	30
	Evaluation of individual effort to group project	20	20
Experiential learning reflection report		50	50
Total			700

Grading Scale

Grade	Percentages
A	93 - 100
A-	90 - 92.9
B+	87 - 89.9
B	83 - 86.9
B-	80 - 82.9
C+	77 - 79.9
C	73 - 76.9
C-	70 - 72.9
D+	67 - 69.9
D	63 - 66.9

D-	60 - 62.9
E	<59.9 and below

UNIVERSITY OF FLORIDA POLICIES AND ASSISTANCE

Grades and Grade Points - A minimum grade of C is required for Gen Ed credit. For information on current University of Florida policies for assigning grade points, see <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Attendance and Make-Up Work

Students are expected to attend classes. 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/UGRD/academic-regulations/attendance-policies/>

Online Course Evaluation Process

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>.

University Policy on Academic Conduct

UF students are bound by The Honor Pledge, which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty 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 [Student Honor Code and Student Conduct Code](#) 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 TA in this class.

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:

<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code>

Plagiarism

The [Student Honor Code and Student Conduct Code](#) states that:

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

- Stealing, misquoting, insufficiently paraphrasing, or patch-writing.
- Self-plagiarism, which is the reuse of the student's own submitted work, or the simultaneous submission of the student's own work, without the full and clear acknowledgment and permission of the faculty to whom it is submitted.
- Submitting materials from any source without proper attribution.
- Submitting a document, assignment, or material that, in whole or in part, is identical or substantially identical to a document or assignment the student did not author."

It is to be assumed that all work will be completed independently unless the assignment is defined as a group project, in writing by the professor. This policy will always be vigorously upheld in this course.

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.

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

Campus Helping Resources

Students experiencing crises or personal problems that interfere with their general wellbeing are encouraged to utilize the university's counseling resources. The Counseling Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal or lacking clear career and academic goals, which interfere with their academic performance.

- *Health and Wellness*
 - U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team member will reach out to the student in distress.

- Counseling and Wellness Center: Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.
 - Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need or visit the Student Health Care Center website.
 - University Police Department: Visit UF Police Department website or call 352-392-1111 (or 9-1-1 for emergencies).
 - UF Health Shands Emergency Room/Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the UF Health Emergency Room and Trauma Center website.
- *Academic and Student Support*
 - E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.
 - Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
 - Library Support: Various ways to receive assistance with respect to using the libraries or finding resources.
 - Teaching Center: Broward Hall, 352-392-2010 or to make an appointment 352-392-6420. General study skills and tutoring.
 - Writing Studio: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.
 - Student Complaints On-Campus: Visit the Student Honor Code and Student Conduct Code webpage for more information.
 - On-Line Students Complaints: View the Distance Learning Student Complaint Process.

Course Evaluations

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available on the GatorEvals [Providing Constructive Feedback](#) FAQ page.

Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via the [GatorEvals](#) website. Summaries of course evaluation results are available to students at the [GatorEvals Public Results](#) page.

More information about UF's course evaluation system can be found at the [GatorEvals Faculty Evaluations](#) website.