

INSECTS AND WILDLIFE

ENY4210 Undergraduate | Fall Semester | 3 Credit Hours | Asynchronous online course

INSTRUCTOR

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OFFICE HOURS

Tuesdays from 5-6 PM or by appointment. Students are encouraged to contact Kat Halsey at khalsey@ufl.edu, Vilma Castro Montenegro at vilma.montenegro@ufl.edu or me at estellemartin@ufl.edu to arrange a time to meet with subject line: FALL 2023 - ENY4210 meeting request. All meetings will occur via Zoom. Please allow for a 48h response time.

Course Website

<https://ufl.instructure.com/courses/462094>

Course Description

Insects and other arthropods and their relationships with wild vertebrate animals.

Prerequisite Knowledge and Skills

As a prerequisite, you must have completed BSC 2005 or BSC 2010

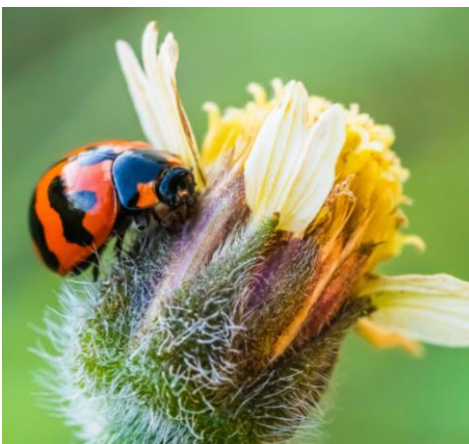
Purpose of Course

This course has several purposes:

- (1) to introduce students who are mostly interested in vertebrate animals (wildlife) to the importance of smaller, often overlooked, but ecologically important invertebrates, mostly insects
- (2) to introduce students to vertebrate animals that interact with arthropods (mostly insects)
- (3) to learn how insects are managed, and how vertebrate animals can be positively or negatively affected by the various practices

Course Goals and/or Objectives

By the end of this course, students will develop an understanding of the ecological relationships of arthropods and pesticides with natural resources, particularly the roles of arthropods as food, nuisance pests, vectors of animal disease, and in natural resource and wildlife conservation. Students will be able to identify the groups of insects (and other arthropods) that are most important as food, nuisance pests, and vectors of animal disease. They will learn methods of arthropod diet assessment and know how different methodologies affect the outcomes of research. They will learn how arthropod populations can be manipulated to favor wildlife and how these principles and practices can be use in wildlife management practices.



Instructional Methods

The class will be conducted entirely online using Canvas. You are responsible for the course content in Canvas. You should view the lectures and read the text in the order shown in the class outline. You should also view the video clips, which serve to illustrate the items discussed.

Course Technology

You will need internet to access the Canvas course via the UF e-learning site to see the course contents and complete assessments.

Learning Objectives

By the end of the course, students will be able to:

1. Compare the major insect orders
2. Discuss insects external and internal structure
3. Summarize the nutritional value of insect
4. Identify insect orders that are important to wildlife diet
5. Analyze the different impact insects have on animal and environmental health
6. Compare and contrast the different type of disease transmission
7. Discuss strategies for pest control, animal disease control and wildlife management
8. Judge and critique scientific literature related to insects and wildlife interaction
9. Create presentations on insect-vector-borne diseases that are involved in the regulation of animal populations
10. Create a digital collection of 10 insect orders

Course Format and Requirements

This course is offered as pre-recorded lectures delivered by the eLearning course management system Canvas. Slides are available as PDF as well as transcripts should you care to print them.

Quizzes

There are 14 quizzes. Quizzes are multiple choice tests and must be taken via Canvas unless other arrangements are made in advance. Quizzes are worth varying point values. You have only one chance to take each Quiz, so prepare in advance. Please take tests using a reliable computer and connection. There are 14 "practice quizzes". These are not graded, and it is for your use only as a study aid. If you can answer these questions successfully you are acquiring adequate knowledge about the relationship of insects and their relatives that will allow you to be successful for each of the 14 "ends of the module quizzes". In addition, there is an 'insect identification quiz' which will assess your ability for identification of insect orders and insect relatives that are of particular importance to wildlife. This quiz can be taken up to 3 times and the best score will be kept. At the end of each attempt the explanations as to how identification of the images is determined. Finally, there is one "syllabus quiz" worth 17 points, two "course evaluation surveys" (midway and end of course) as well as 2 "assess your knowledge quizzes" (beginning and end of the course). For the course evaluation surveys and the assess your knowledge quizzes, full grades will be given just for completing them.

Discussion

There are 14 discussions. Each discussion is worth 20 points. Discussions will be completed within Perusall with the exception of the "Introduce Yourself" discussion.

Module 0 – Introduce Yourself

Module 1 – *Are Fleas Highly Modified Mecoptera?*

Module 2 – *Polyphenism: A Window into Gene and Environment Interactions and Phenotypic Plasticity*

Module 3 – *Opportunities and Hurdles of Edible Insects for Food and Feed*

Module 4 – *Conversation with Firefly: A Study of Mimicry and Defense*

Module 5 – *Insect Decline*

Module 6 – Choose 1 of 3 articles

Module 7 – *Are Oxpeckers Friends or Foes? Evaluating a Symbiotic Relationship*

Module 8 – *The Dilution Effects: How Biodiversity can affect human health*

Module 9 – Sick on a *South American Sugarcane Plantation*

Module 10 – *Red Imported Fire Ant Impacts on Wildlife: A Decade of Research*

Module 11 – *To Spray or Not to Spray: A Debate over Malaria and DDT*

Module 12 – *Rabbit Calicivirus Disease: Magic Bullet or Pandora's Box – A Case Study on Biological Controls*

Module 13 – No Discussion

Module 14 – *Bats and Beehives: Bats Limit Insects in a Neotropical Agroforestry System*

Module 15 – No Discussion

You will have one full week to complete each discussion and quiz. For example, a discussion or quiz given on week 1 will need to be completed by the Monday of week 2. The whole content of the course will be available to students as they start the course. All late submissions will be docked 10 points on the individual component grade for each 24 hours after each deadline. Contact me in advance (minimum of two weeks) if there will be a problem with the dates of the scheduled tests.



Assignments

There are 8 assignments. Each assignment is worth 30 points.

Module 1 – Insect Table + Insect Order & Collection

Module 2 – Module 1 Assignment Continued

Module 3 – Edible Insect Flyer Assignment

Module 4 – Module 3 Assignment Continued

Module 5 – Insect ID Quiz

Module 6 – Module 5 Assignment Continued

Module 7 - Salmon flies and nutrients

Module 8 – Module 7 Assignment Continued

Module 9 – Deep Dive into Your Fictional Disease

Module 10 – Module 9 Assignment Continued

Module 11 – Create a scenario about insecticide use

Module 12 – Module 11 Assignment Continued

Module 13 – No Assignment

Module 14 – Harrassment

Module 15 – Module 14 Assignment Continued

You will have two full weeks to complete each assignment. For example, an assignment given on week 1 will need to be completed by the Monday of week 3. The whole content of the course will be available to students as they start the course. All late submissions will be docked 10 points on the individual component grade for each 24 hours after each deadline. Contact me in advance (minimum of two weeks) if there will be a problem with the dates of the scheduled tests.

Semester Project

The semester project is worth 125 points and the goal is to have fun and go outside to look for insects! We will use the iNaturalist platform to record our encounters with insects. During the semester, you will need to:

1. Upload 25 unique observations of insects to <https://www.inaturalist.org/projects/insects-and-wildlife-fall-2022>
 - a. These must be your own observations, and not anything you find online!
 - b. No pets or captive animals (example, you cannot post a pic of your pet mantis)
2. These 25 insects must represent at least ten different orders

If you are not able to go outside and collect, it is ok you will be able to explore iNaturalist and practice your identification skills by identifying 25 insects from at least 10 different orders!

Insect and wildlife interactions can be fascinating and you will have the opportunity to get 10 points extra credit by capturing examples of arthropod and wildlife interaction and posting them to the project:

<https://www.inaturalist.org/projects/arthropods-and-wildlife-e94e59cb-6965-4fd0-8d0c-21daeb7c431d>



Course Communication

Please post course related questions on the discussion board and send private question related to the course or grades to estellemartin@ufl.edu

Netiquette: Communication Courtesy

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

Textbook

There is no required textbook. Most of the content for this course was developed using Capinera, J.L. 2010. Insects and Wildlife. Arthropods and their Relationships with Wild Vertebrate Animals. Wiley-Blackwell, Oxford, UK.

Additional Resources

All other materials are provided via the e-Learning site.

How this course relates to student learning outcomes

Biology students – will develop competence in the basic terminology, concepts, methodologies, and theories used within the biological sciences; and will develop ability to analyze biological information and develop reasoned solutions to problems.

Wildlife biology students – will develop knowledge of scientific, social and ethical arenas of wildlife ecology and conservation; skills for critical reasoning in conservation management; knowledge of Florida wildlife species and their biology, ecology, natural history and behavior; principles and applications of wildlife management practices, population dynamics and habitat management; and application of biological principles to solve problems in wildlife conservation and preserve biological diversity.

Entomology students - will allow students to demonstrate knowledge of insects, other arthropods and/or nematodes, including their relationship with the environment and humans

COURSE POLICIES

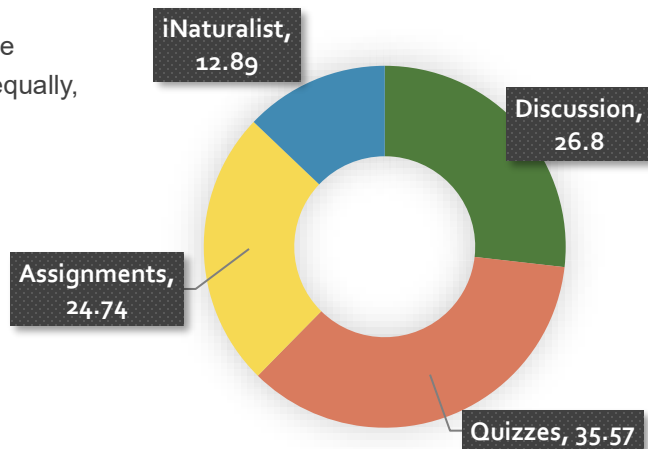
Attendance Policy

There is no attendance policy, but it will be difficult to pass the course unless you listen to the lectures carefully. Students are encouraged to work on this class weekly. All writing assignments are due by the date posted and must be submitted using Canvas.

Course Grading

Students are responsible for the content of the lectures. The quizzes, discussion board and assignments are weighted equally, and the points assigned for each evaluation is listed in the "assessment" column of the lecture outline table.

- Discussion (260 pts)
- Quizzes (345)
- Assignments (240 pts)
- iNaturalist Semester project (125 pts)
- Total (970 pts)
- Possible Extra Credit: (+20 pts)



The final grade, based on accumulation of points, will be assigned as:

| | | | | | |
|----|----------|----|----------|----|-----------------|
| A | 93– 100 | B- | 80- 82.9 | D+ | 67- 69.9 |
| A- | 90– 92.9 | C+ | 77- 79.9 | D | 63- 66.9 |
| B+ | 87– 89.9 | C | 73- 76.9 | D- | 60- 62.9 |
| B | 83– 86.9 | C- | 70- 72.9 | E | <59.9 and below |

Grade point equivalencies for grades are found at: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

UF POLICIES

Grades and Grade Points

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>.

Attendance 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/UGRD/academic-regulations/attendance-policies/>.

For online course with recorded materials a statement informing students of privacy related issues such as: Our class sessions may be audio visually recorded for students in the class to refer and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

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. 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/>. Summaries of course evaluation results are available to students at: <https://gatorevals.aa.ufl.edu/public-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."

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

Software Use

All faculty, staff and students at 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.

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, <https://disability.ufl.edu/>

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
 - Counseling Services
 - Groups and Workshops
 - Outreach and Consultation
 - Self-Help Library
 - Wellness Coaching
- U Matter We Care, www.umatter.ufl.edu/
- Career Connections Center, First Floor JWRU, 392-1601, <https://career.ufl.edu/>.
- Student Success Initiative, <http://studentsuccess.ufl.edu>.

Student Complaints:

- Residential Course: <https://sccr.dso.ufl.edu/policies/student-honor-code-studentconduct-code/>.
- Online Course: <https://distance.ufl.edu/state-authorization-status/#student-complaint>

| Modules and Weekly Course Schedule | Course topic | Assessment | Due Dates |
|------------------------------------|---|--|-----------|
| 1 (Aug 23-Aug 25) | Course introduction | Syllabus quiz (17 pts) Introduce Yourself Discussion board (20 pts) Assess your knowledge quiz (14 pts) | Aug 29 |
| 2 (Aug 28-Sept 1) | Insects and their relatives | Module 1 Quiz (30 pts) Module 1 Discussion board 1 (20 pts) Module 1 Assignment (30 pts) | Sept 5 |
| 3 (Sept 5-Sept 8) | Insect structure and function | Module 2 Quiz (30 pts) Module 2 Discussion board 2 (20 pts) Module 1 Assignment Cont'd | Sept 12 |
| 4 (Sept 11-Sept 15) | Food resources for wildlife | Module 3 Quiz (10 pts) Module 3 Discussion board (20 pts) Module 3 Assignment (30 pts) | Sept 19 |
| 5 (Sept 18-Sept 22) | Wildlife diets | Module 4 Quiz (30 pts) Module 4 Discussion board (20 pts) Module 3 Assignment Cont'd | Sept 26 |
| 6 (Sept 25-Sept 29) | Insects important as food for wildlife | Module 5 Quiz (30 pts) Module 5 Discussion board (20 pts) Module 5 Assignment: Insect Identification Quiz (30 pts) | Oct 3 |
| 7 (Oct 2-Oct 5) | Insects and ecosystems | Module 6 Quiz (10 pts) Module 6 Discussion board (20 pts) Module 5 Assignment Cont'd | Oct 10 |
| 8 (Oct 9-Oct 13) | Transmission of disease agents to wildlife by arthropods | Module 7 Quiz (10 pts) Module 7 Discussion board (20 pts) Mid-course evaluation (5 pts Extra Credit) Module 7 Assignment (30 pts) | Oct 17 |
| 9 (Oct 16-Oct 20) | Infectious disease agents transmitted to wildlife by arthropods | Module 8 Quiz (10 pts) Module 8 Discussion board (20 pts) Module 7 Assignment Cont'd iNaturalist Progress Checkup (50 pts) | Oct 24 |
| 10 (Oct 23-Oct 27) | Parasitic disease agents transmitted to wildlife by arthropods | Module 9 Quiz (20 pts) Module 9 Discussion board (20 pts) Module 9 Assignment (30 pts) | Oct 31 |
| 11 (Oct 30-Nov 3) | Arthropods as parasites of wildlife | Module 10 Quiz (30 pts) Module 10 Discussion board (20 pts) Module 9 Assignment Cont'd | Nov 7 |
| 12 (Nov 6-Nov 9) | Pesticides and their effects on wildlife | Module 11 Quiz (30 pts) Module 11 Discussion board (20 pts) Module 11 Assignment (30pts) | Nov 14 |
| 13 (Nov 13-Nov17) | Alternatives to insecticides | Module 12 Quiz (10 pts) Module 12 Discussion board (20 pts) Module 11 Assignment Cont'd | Nov 21 |
| 14 (Nov 20-Nov 21) | No class | No assignments but feel free to work ahead!!! | |
| 15 (Nov 27-Dec 1) | Insect-wildlife relationships | Module 14 Quiz (10 pts) Module 14 Discussion board (20 pts) Module 14 Assignment (30 pts) End-course evaluation (5 pts Extra Credit) | Dec 5 |
| 16 (Dec 4-Dec 8) | Insect and wildlife conservation | Module 15 Quiz (10 pts) Module 15 Discussion board (20 pts) Module 14 Assignment Cont'd Assess your knowledge quiz (14 pts) | Dec 12 |
| Throughout the semester | Semester Project | iNaturalist Insects and Wildlife (75 pts) iNaturalist Insects and Wildlife University of Florida (10 pts Extra Credit) | |

References

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