

INSECT BEHAVIOR

Course Number: ENY 3451C

Credit Hours: 3

Fall 2022

online

COURSE DESCRIPTION: Course provides a theoretical and empirical overview of insect behavior, ranging from physiology underlying behavior to the evolution of behavioral diversity. Focus will be on recent and current research on insect behavior, the diversity of approaches for studying it, and how this knowledge can be applied to solve human challenges.

INSTRUCTOR: Dr. Lisa Taylor

2211 Steinmetz Hall (office)

2116 Steinmetz Hall (lab)

Department of Entomology and Nematology

Lisa.taylor@ufl.edu

Office phone: 352-273-3937

OFFICE HOURS: I have set aside time to meet with students on Tuesdays and Thursdays between 1 and 2pm by Zoom. If you plan to attend these Zoom office hours, please send me an email at least 24 hours in advance and I will send you a Zoom link. If this time does not work for you, or you would like to meet in person, just send me an email and we can schedule an individual meeting at another time.

COURSE WEBSITE: <http://lss.at.ufl.edu>

REQUIRED TEXT: There will be no required textbook for this course; you will often be assigned papers from the scientific literature (posted in Canvas). However, for additional reading, I recommend the following textbook, which provides excellent coverage of many of the general topics we will discuss in this course.

- Alcock, J. 2013. *Animal behavior: an evolutionary approach, 10th edition.*

PREREQUISITE KNOWLEDGE AND SKILLS: At least one semester of a college-level biology or entomology course is required, or permission of the instructor.

COURSE LEARNING OBJECTIVES: By the end of this course, students will be able to:

1. Explain how insect behavior has evolved to make insects one of the most abundant and diverse taxonomic groups on the planet (e.g., explain how they find food, how they find mates, how they protect themselves from predators, etc.)

2. Based on observations of insect behavior in nature and in the laboratory, develop hypotheses for the function of the behaviors observed
3. Describe methods employed to study insect behavior and be able to propose specific experiments to logically test hypotheses
4. Keep arthropods in captivity, report on findings of behavioral observations, and design feasible experiments for testing hypotheses
5. Evaluate and critically assess articles from the primary literature in the field of insect behavior
6. Describe how scientists are using our modern understanding of insect behavior to solve human problems (e.g., pest management, design of cities) and be able to think creatively to propose new ideas

INSTRUCTIONAL METHODS: All course material will be available through Canvas, separated into weekly modules. **New modules will open up each week (by Monday morning), and you will have a week to work through them.** Within each weekly module, you will watch narrated PowerPoint presentations, read assigned articles, participate in lab/field activities, participate in online discussions, and complete quizzes. In addition, you will complete two assignments over the course of the semester that will encompass a combination of lecture and laboratory material. Finally, there will be two exam assignments where you will be asked to synthesize and apply concepts presented in the weekly modules (these written exam assignments will be 'open-book' and you will have one week to work on them at your own pace). The quizzes will be a combination of 'open-book' and 'closed-book' formats (i.e., there will be some of each format, but you will always have at least one week to prepare for them) and they are designed to prepare you for the exams. Note that as a combined lecture and lab course, you will be expected to engage in hands-on activities every week (including getting outdoors to observe and photograph insect behavior as well observing captive arthropods; see details below).

COURSE COMMUNICATIONS: If you have questions either before or during the course, feel free to email me directly at any time or send me a message via Canvas. I will reply within 24 hours during weekdays. Responses on weekends may take longer, but I will respond to all messages received over the weekend on Monday morning (at the latest). If you have general questions that you think might be relevant to other students in the course (i.e., questions about assignments, course logistics, or course material), I'd encourage you to post such questions as a discussion in Canvas.

TENTATIVE COURSE SCHEDULE (ONLINE, FALL 2022):

Week	Topic	Graded activities this week	Quizzes and exams this week
1	introduction and framework for studying behavior	contribute to discussion 1	syllabus quiz and quiz 1
2	overview of insect behavior and diversity (and where to find it in the field)	contribute to discussion 2, respond to discussion 1	quiz 2
3	insects as prey: defenses against predators	contribute to discussion 3, respond to discussion 2, plan for captive arthropod due	quiz 3
4	Insect communication systems	contribute to discussion 4, respond to discussion 3	quiz 4
5	Insects as predators and parasites	contribute to discussion 5, respond to discussion 4, captive arthropod must be obtained	quiz 5
6	Reproduction and mating systems	contribute to discussion 6, respond to discussion 5	quiz 6
7	parental care	contribute to discussion 7, respond to discussion 6, find literature on captive arthropod	quiz 7
8	Insect collective behavior: a case study	contribute to discussion 8, respond to discussion 7	quiz 8 (course survey)

9	Exam 1, scavenger hunt catch up	contribute to discussion 9, respond to discussion 8	quiz 9, Exam 1
10	Plant-insect interactions	contribute to discussion 10, respond to discussion 9, 'draft' of arthropod behavior scavenger hunt assignment (5 categories) due	quiz 10
11	designing experiments to study insect behavior	contribute to discussion 11, respond to discussion 10, captive arthropod observation	quiz 11
12	Social behaviors and insect societies	contribute to discussion 12, respond to discussion 11, captive arthropod experiment proposal	quiz 12
13	using insect behavior to inspire human design	final plans for captive arthropod, respond to discussion 12, contribute to discussion 13	quiz 13
14	short week for Thanksgiving holiday (independent work on scavenger hunt assignment)		
15	practical applications of insect behavior	respond to discussion 13	
16	course wrap up and review	final arthropod behavior scavenger hunt due	Exam 2, course evaluations

Disclaimer: This syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected. Announcements and updates will be posted regularly in Canvas. Please adjust your Canvas settings so that you will be notified of announcements.

COURSE POLICIES:

ASSESSMENTS AND GRADES: All assignments and exams will be returned within one week, meaning that at any point in the semester, you should be able to calculate your current grade

for the course. To be fair to all students, I follow the rules and point system laid out in this syllabus very closely. If you ever have a question about a score you earn, I would be happy to discuss it. I do ask that you address all questions about grading of particular assignments within two weeks of receiving a grade on that assignment.

Your final grade for this course will be based on the percentage of points that you earn out of a possible total of **506** points. The point breakdown is the following:

- Exam 1: 50 points
- Exam 2 (cumulative): 50 points
- Weekly online quizzes (13 weekly quizzes at 7 pts each, plus a syllabus quiz for 4 pts): 95 points
- Weekly online discussions (13 discussions at 7 points each): 91 points
- Arthropod behavior Scavenger Hunt: 120 points (20 points for mid-semester draft, 100 points for final draft)
- Captive arthropod assignment: 100 points

Grades will be calculated as follows:

A	93-100%
A-	90-92%
B+	87-89%
B	83-86%
B-	80-82%
C+	77-79%
C	73-76%
C-	70-72%
D	60-69%
E	less than 60%

****Final percentages are rounded to the nearest whole number to determine your final grade. This means that at any point in the semester, you can simply calculate the percentage of points that you have earned at that stage to estimate your current grade.***

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

<http://www.isis.ufl.edu/minusgrades.html>

ATTENDANCE AND MAKE-UP POLICY:

As an online course, there are no requirements for you to physically attend class at a specific time. However, participation in discussions and other activities *within particular timeframes* will be required.

Arrangements to make up missed work must be made by contacting the instructor at least one week BEFORE the due date. In cases of unforeseen emergencies (e.g., medical emergency

documented with a doctor's note), contact the instructor as soon as possible. Such situations will be handled on a case-by-case basis.

All material must be completed within the timeframes outlined in the course schedule above. In case of personal emergency that results in a missed deadline, students must submit documentation to the Dean of Students office (dsocares@dso.ufl.edu, <https://care.dso.ufl.edu/instructor-notifications/>) and request that an instructor notification to be sent. This must be done within five business days after the deadline. In addition to contacting the Dean of Students office, please also send me an email to let me know that you plan to request an extension (and also to let me know that all is okay, as I worry when students miss these important dates!)

Requirements for make-up work are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

QUIZ/EXAM POLICY:

Quizzes will be used to assess your mastery of material within each weekly module. They will be either 'open-book', meaning you can use whatever resources are available to you (including the internet), or 'closed-book' and proctored using the Honorlock proctoring service. The reason for these two different formats is that no one format is ideal for assessing your mastery of different learning goals. Regardless of the format of any particular quiz, work must always be done individually. **Please do not discuss the content of any quizzes (regardless of whether they are open-book or closed-book) with your classmates until all have been graded.** If you use outside sources (including internet sources) for open-book quizzes, they must be cited appropriately.

Exam assignments will be 'open-book' and you will have one week to work on them at your own pace. As with quizzes, **do not discuss the content of any exam material with your classmates until all have been graded.** Please remember that you are bound by the UF honor code (see below under 'UF policies').

POLICY ON LATE ASSIGNMENTS: Late assignments (including all assignments, discussion posts, and quizzes) will be accepted, but will be deducted 20% per day late. This means that assignments that are 5 (or more) days late will earn no credit. Unless otherwise indicated, assignments are due in Canvas by 11:59pm on their due date.

COURSE TECHNOLOGY: This course will be administered through Canvas (<http://ss.at.ufl.edu>). All students must have access to a computer with a reliable internet connection (a high speed connection is recommended). Please be sure to have a backup option in case your computer or internet connection fails. See the 'Getting Help' section below for technical assistance with Canvas.

Students will need access to a basic camera with video capability for Assignments 1 and 2 (the Arthropod Behavior Scavenger Hunt and Captive Arthropod Assignment); basic smartphone cameras are sufficient, as long as they can capture the behavior of arthropods. You will not need a macro lens or anything fancy, but if you have one, you are welcome to use it. If you will not have access to a camera (or are unsure if what you have is sufficient), please let the instructor know **during the first week of class** so that we can make arrangements.

iNaturalist. We will use the online *iNaturalist* platform throughout the semester and students will be required to sign up for a free account and contribute observations to our project page over the course the semester. The details of these required observations will be embedded in course Canvas discussions (as students will be asked to post to *iNaturalist* and then share and discuss their observations with their classmates). *iNaturalist* can be accessed for free using either a web browser (iNaturalist.org) or using the free smartphone app. During week 2 of the course, students will be given guidelines that describe best practices for using this platform and for contributing to the *iNaturalist* community.

UF POLICIES:

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/>

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>.

NETIQUETTE: COMMUNICATION COURTESY: All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats. Take a moment to read this netiquette guide for online courses: <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. 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.ua.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.ua.ufl.edu/public-results/>.

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.

RECORDING OF LECTURES. Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book,

magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

GETTING HELP:

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

- 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>.

Canvas technology requirements. Computers, Internet, and Web browsers: Canvas runs on Windows, Mac, Linux, iOS, Android, or any other device with a modern web browser. It is recommended to use a computer less than five years old with at least 1GB of RAM. It is recommended to have a minimum Internet speed of 512kbps. It is strongly recommended to not use a wireless connection, phone, tablet, or notepad for critical course tasks such as exams and discussions.

Canvas currently supports the following browsers: Chrome, Safari, Firefox, Edge. Canvas supports the last two versions of most browsers. It is highly recommend updating to the newest version of whatever browser you are using. Note that your computer's operating system may affect browser function. Failure to use one of these browsers will cause problems.

For more information on approved computers and browsers please visit:

<https://community.canvaslms.com/t5/Canvas-Basics-Guide/What-are-the-browser-and-computer-requirements-for-Canvas/ta-p/66> On this web page there is an area titled "Is My Browser up to Date?" Use it to check each computer and browser you may use in this course. There is another important area on "Browser Privacy Settings." Read the section(s) for any browser intended for use. For example, note that: In browsers such as Safari, insecure content will never be displayed in the browser. Return to the page to check for updates on technology issues in Canvas.

If you encounter technical difficulties in this course, contact the UF Computing Help Desk right away to troubleshoot. <https://helpdesk.ufl.edu/> or (352) 392-HELP. If the problem cannot be fixed immediately, notify your instructor, and provide them with the Help Desk ticket number.

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 & 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 Complaints:

- Residential Course: <https://sccr.dso.ufl.edu/policies/student-honor-code-studentconduct-code/>
- Online Course: <http://www.distance.ufl.edu/student-complaint-process>

UF Student Success: FOR IMPROVING STUDY SKILLS AND CONNECTING WITH A PEER TUTOR, PEER MENTOR, SUCCESS COACH, ACADEMIC ADVISOR, AND WELLNESS RESOURCES, GO TO <http://studentsuccess.ufl.edu>