

INSECT BEHAVIOR

Course Number: ENY 3451C/6905

CREDIT HOURS: 3

SPRING 2018

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

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OFFICE HOURS: By appointment (email to schedule a meeting at any time). Meetings can be either in person (in my office) or via Canvas.

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

REQUIRED TEXT: There will be no required textbook for this course; each week you will be assigned papers from the scientific literature (posted in Canvas). However, I highly 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. 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 three assignments over the course of the semester that will encompass a combination of lecture and laboratory material. Finally, there will be an open-book midterm and final (cumulative) exam. Graduate students (enrolled in ENY6905) will be required to (1) prepare and share a 10-minute narrated PowerPoint presentation on their own research (and how it relates to insect behavior) to share with the rest of the students in the class, and (2) facilitate a follow-up discussion in Canvas about the material presented in the PowerPoint.

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. 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, SPRING 2018):

Final Exam: to be taken online, available during the entire exam period and due by 11:59pm, May 4th.

| 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 | social behavior and insect societies | contribute to discussion 3, respond to discussion 2, plan for captive arthropod due | quiz 3 |
| 4 | insects as prey: defenses against predators | contribute to discussion 4, respond to discussion 3 | quiz 4 |
| 5 | communication systems (visual, chemical, acoustic, tactile) | contribute to discussion 5, respond to discussion 4, captive arthropod must be obtained | quiz 5 |
| 6 | insects as predators and parasites | contribute to discussion 6, respond to discussion 5 | quiz 6 |
| 7 | parental care | contribute to discussion 7, respond to discussion 6, arthropod video review due | quiz 7 |
| 8 | navigation, dispersal, and habitat selection | contribute to discussion 8, respond to discussion 7 | quiz 8 (course survey) |
| 9 | SPRING BREAK! | | |
| 10 | finding mates and courtship | contribute to discussion 9, respond to discussion 8 | quiz 9, midterm exam |

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|----|--|---|---|
| 11 | insect collective behavior | contribute to discussion 10, respond to discussion 9, 'draft' of arthropod behavior scavenger hunt assignment (5 categories) due | quiz 10 |
| 12 | reproduction and mating (part 2) | contribute to discussion 11, respond to discussion 10 | quiz 11 |
| 13 | plant-insect interactions | contribute to discussion 12, respond to discussion 11, captive arthropod experiment proposal | quiz 12 |
| 14 | applying insect behavior to pest management | contribute to discussion 13, respond to discussion 12, final plans for captive arthropod | quiz 13 |
| 15 | using insect behavior to inspire human design | contribute to discussion 14, respond to discussion 13 | quiz 14 |
| 16 | course wrap up and review | respond to discussion 14, final arthropod behavior scavenger hunt due | final exam (due by May 4), 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.

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 645 points. The point breakdown is the following:

- Midterm exam: 100 points
- Final exam (cumulative): 100 points

- Weekly online quizzes (14 weekly quizzes at 7 pts each, plus a syllabus quiz for 4 pts): 102 points
- Weekly online discussions (14 discussions at 7 points each): 98 points
- Arthropod behavior Scavenger Hunt: 120 points (20 points for mid-semester draft, 100 points for final draft)
- Captive arthropod assignment: 100 points
- Arthropod video review assignment: 25 points

***NOTE:** Graduate students (enrolled in ENY6905) will be required to prepare and share a 10-minute narrated PowerPoint presentation on their own research (and how it relates to insect behavior) to share with the rest of the students in the class, as well as facilitate a follow-up discussion of the presented material in Canvas. This supplemental assignment will be worth a total of 50 points. As a result, grades for graduate students will be calculated based on a total of 695 points.

Grades will be calculated as follows:

A 93-100%

A- 90-92%

B+ 88-89%

B 83-87%

B- 80-82%

C+ 78-79%

C 73-77%

C- 70-72%

D+ 68-69%

D 63-67%

D- 60-62%

E 59% and below

****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 work, including exams, 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.

Requirements for 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>

QUIZ/EXAM POLICY: Quizzes and exams will be taken online and are 'open-book', meaning you can use whatever resources are available to you (including the internet). However, work must be done individually. **Please do not discuss the content of exams and quizzes with your classmates until all have been graded.** Please remember that you are bound by the UF honor code (see below under 'UF policies'). If you use outside sources (including internet sources), they must be cited appropriately.

POLICY ON LATE ASSIGNMENTS: Late assignments (including all assignments, discussion posts, quizzes, and exams) 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://lss.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 might want 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.

UF POLICIES:

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.

Disability Resource Center

0001 Reid Hall, 352-392-8565,

www.dso.ufl.edu/drc

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/honorcodes/honorcode.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. 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. These evaluations are conducted online at: <https://evaluations.ufl.edu>.

Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at: <https://evaluations.ufl.edu/results>.

Each online distance learning program has a process for, and will make every attempt to resolve, student complaints within its academic and administrative departments at the program level. See <http://distance.ufl.edu/student-complaints> for more details

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.

GETTING HELP:

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

- 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>.

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/

- Counseling Services
- Groups and Workshops
- Outreach and Consultation
- Self-Help Library
- Wellness Coaching

Career Resource Center

First Floor JWRU, 392-1601, www.crc.ufl.edu/