

# Insect Physiology Lab

Syllabus for ENY 6401L-1 credit hour

**Meeting time:** Wednesday periods 6-8, 1:00-3:50 pm.

**Meeting location:** Steinmetz Hall (ENY) Rm# 3118

**Instructor:** Daniel Hahn

**E-mail:** [dahahn@ufl.edu](mailto:dahahn@ufl.edu)

**Phone:** 352-273-3968

**Office:** ENY 3112

## Lab Objectives:

Students will be able to describe and identify major structures from insect internal and external anatomy across several orders of insects.

Students will be able to describe, compare, and contrast several important techniques in physiology, biochemistry, and molecular biology including several forms of protein biochemistry, enzyme assays, respirometry, and electrical recordings of nervous activity.

Students will be able to extend basic principles of these assays and knowledge of anatomy to their own research questions.

**Grades** will be based on a total of 100 points spread across the assignments below:

Lab Notebooks (8 lab assignments at 10 pts each)	80
<i>Manduca</i> Growth & Development Report	20
Total	100

**Letter Grades** will be assigned as follows:

- A = 90% or more total points
- B+ = 87% to 89% total points
- B = 83% to 86% total points
- B- = 80% to 82% total points
- C+ = 77% to 79% total points
- C = 73% to 76% total points
- C- = 70% to 72% total points
- D+ = 67% to 69% total points
- D = 63% to 66% total points
- D- = 60% to 62% total points
- E = Less than 60% total points

## Grades and Grade Points

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

**Attendance, Participation, and Class Demeanor:**

Please note that this is a hands-on laboratory section. You are expected to attend every lab and participate. If for any reason you cannot attend, you must notify the instructor ahead of time, or soon after if an emergency has arisen. If there is a valid reason for missing a lab, I will be happy to work with you to generate a make-up assignment in agreement with the official UF policies. 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/ugrad/current/regulations/info/attendance.aspx>.

I think that active participation is the best way to involve most people in learning, so I will expect you to be interactive and take a participatory role in lab processes. My labs are designed to go beyond “cook-book exercises” where I give you a procedure and you simply follow it. My goal is to make this an open learning atmosphere where you will learn to think about techniques in a synthetic and analytical way so that you can learn to work with such techniques yourself in your own research. This means that you are responsible for aspects of experimental design, implementation, and troubleshooting. Because of time constraints, I will rely on you to learn some material on your own from readings or other out of class assignments. There is no required textbook, instead I will provide you with readings and protocols.

**Laboratory Notebook & Formal Journal:**

Keeping detailed records of one’s work is a critical facet of doing good science. Each of you will purchase a new composition book to serve as your lab notebook for this course. There will be a series of exercises to be completed for each of the eight hands-on labs. You will complete the written portions of these assignments in your laboratory notebook as well as taking careful notes about your work in the lab. Notebooks will be due on the Tuesday of the week after the lab and returned to you on the following Wednesday at the beginning of the next lab. Each week you will receive a handout that will define the specific goals for the lab, provide protocols, and pose specific questions to be answered in your lab notebook. In some weeks the assignment will include out of lab activities to reinforce major concepts such as searching and summarizing the relevant literature. I will expect you to prepare a formal journal of the lifecycle of a *Manduca sexta* caterpillar that I provide for you. This will be more detailed than your typical lab notebook assignment and will include charting growth and development, including pictures of critical life history transitions (e.g., molting). Really put your effort into observing this insect throughout its lifecycle because it will provide a grounded, organismal basis for many of the topics we cover in the first third of the course.

**Schedule and list of topics:** Note that this may change during the course of the semester.

Date	Lab Topic
Jan 5 W	No Lab
Jan 12 W	Anatomy
Jan 19 W	Anatomy
Jan 26 W	Anatomy
Feb 2 W	Protein Quantification & Separation
Feb 9 W	Lecture Test 1
Feb 16 W	SDS-Page Electrophoresis
Feb 23 W	ELISA – Antibody Applications
Mar 2 W	Neurobiology - Manduca Journal Due
Mar 9 W	No Lab – Spring Break
Mar 16 W	Lecture Test 2
Mar 23 W	Digestion – Enzyme Assays
Mar 30 W	Digestion – Gut pH – utility of dyes
April 6 W	Respiration
April 13 W	Lecture Test 3
April 20 W	No Lab

**Additional General Information:** The following information applies to courses at the University of Florida.

#### *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 complete course evaluations online via GatorEvals. Guidance on how to give feedback 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 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. For issues with technical difficulties for Canvas, please contact the UF Help Desk at:

- <http://helpdesk.ufl.edu>
- (352) 392-HELP (4357)
- Walk-in: HUB 132

### *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*

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](http://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/](http://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: <http://www.distance.ufl.edu/student-complaint-process>

**Remember: your student fees have already paid for these services. Using them when needed is getting the best value for your money.**

### **COVID Response**

We will have face-to-face instructional sessions to accomplish the student learning objectives of this course. Students are expected to wear masks, refrain from physical contact with other students (touching) and wash hands frequently. *This as well as other components of this syllabus are subject to change as the COVID19 pandemic develops.*

All positive COVID-19 cases, including positive at home tests, should call 352-273-9790 University Health, for further guidance.