



Principles of Entomology

ENY 3005

Spring 2023 (2 credits)

★ Course Overview

Insects are the most diverse group of animals on the planet... and also one of the most fascinating! This course will provide students with a conceptual framework for understanding the wonderful world of insects– including their **diversity, evolution, morphology, physiology, behavior,** and **ecology.** We will also explore the many ways in which insects affect our lives (as both pests and allies), by applying fundamental concepts to address questions in **pest management, medicine, conservation, biotechnology,** and more. By the end of this course, students will have a firm foundation in basic and applied insect biology, and thus be prepared for upper-level courses in entomology & related disciplines. This course is designed to complement ENY 3005L (Principles of Entomology lab), which provides students with hands-on experience in insect identification and entomology lab techniques.

Course Catalog description: ENY 3005 introduces principles of insect study, including insect structure, insect development, evolutionary insect history, and its ecological significance. (B)

Course Information

Time: Tuesdays & Thursdays,
Period 3 (9:35 – 10:25am)

Location: 1031 Steinmetz Hall

Co-requisites: ENY 3005L
(Principles of Entomology lab)

Canvas Website:
[ufl.instructure.com/courses/
472629](https://ufl.instructure.com/courses/472629)

Instructor Information

Dr. Anthony Auletta

Email: anthonyauletta@ufl.edu

Phone: (352) 273-3954

Office: 3102 Steinmetz Hall

Office Hours: Tues., 11:00am –
12:00pm and Wed., 3:00pm –
4:00pm (or by appointment):
calendly.com/anthonyauletta

Yichen Li
(Teaching Assistant)

Email: yli10@ufl.edu

Office Hours: By email
appointment

✔ Student Learning Outcomes

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

- 🐛 **Distinguish** insects from other invertebrates, including related groups of arthropods.
- 🐛 **Identify** the major orders of insects (as well as select insect families) and **describe** the basic biology of these groups.
- 🐛 **Explain** fundamental concepts in entomology, including insect morphology and physiology, insect evolution and diversification, the ecological impacts of insects, and insect behavior.
- 🐛 **Apply** those fundamental concepts to address questions in fields such as pest control, medicine, forensics, conservation, and biotechnology.
- 🐛 **Critically read** and **evaluate** primary scientific literature, and effectively **communicate** those findings to a broad audience.

In working towards these goals, students will hopefully also foster a greater curiosity & appreciation for insects and the many important roles they play (both in the natural world and human society).

Readings & Course Materials

Textbook: The following book is required for this course. We will use it extensively throughout the semester, starting in Week 2- so make sure to purchase your copy by then! Due dates for textbook readings will be posted on Canvas; students are expected to complete these readings before the corresponding class session.

- o Gullan PJ & Cranston PS, eds. (2014). *The Insects: An Outline of Entomology, 5th Edition*. Wiley-Blackwell. ISBN: 978-1118846155.

The following book is optional but recommended- it is a great resource, especially for order- and family-level insect identification:

- o Whitfield JB & Purcell AH, eds. (2021). *Daly & Doyen's Introduction to Insect Biology and Diversity, 4th Edition*. Oxford University Press. ISBN: 978-0190853167.

Documentary: During the course, students will be assigned to watch episodes of the BBC documentary *Life in the Undergrowth* to supplement the readings and lectures. More information about the series can be found here: <https://www.bbc.co.uk/programmes/b007y9sd>. Students are responsible for obtaining the episodes on their own; episodes can be rented or purchased through Amazon and Apple TV.

Additional Readings & Videos: Other required readings and videos will be posted on Canvas. Students are expected to review these materials before the corresponding class session.

Computer Requirement: All students must have regular access to a computer with a reliable internet connection to access assignments and materials on Canvas.

Communication & Conduct

Meeting Policy: If you need help with any aspect of the course, we encourage you to come to office hours (see the details on Page 1 of this syllabus). Alternatively, you can schedule a meeting with Dr. Auletta via Calendly (<http://calendly.com/anthonyauletta>) or with your TA via email. Outside of office hours, email is our preferred method of contact. We will do our best to respond to messages within 48 hours (not including weekends or holidays). As a courtesy, please check the syllabus and Canvas before reaching out; answers to many of your questions can be found there!

Canvas: Important announcements and updates will be regularly posted to the course Canvas website, so be sure to check Canvas frequently! To ensure that you do not miss anything, please ensure that your Canvas profile is set to receive notifications.

Email Accounts: It is UF policy that you use your GatorLink account or Canvas when emailing your instructors; we will not answer emails sent from other accounts (e.g., personal Gmail, etc).

Professional Conduct: All members of the class are expected to conduct themselves in a professional and respectful manner at all times. Please use appropriate etiquette when interacting with your peers and instructors, including during class, on Canvas, and via email. Students who behave disrespectfully or disruptively will be reported to the Dean of Students Office.

Projects, Exams, & Assignments

Weekly Review Assignments: Throughout the semester, you will be assigned short **review assignments** based on concepts we've recently covered in class. These reviews will contain a mix of multiple choice, fill-in-the-blank, and free response questions. They are designed to help you keep up with the readings, review course material in preparation for the exams, and think more deeply about the course content. There will be one review assignment due each Friday, with a few exceptions- see the Course Schedule below for due dates. At the end of the semester, your lowest review assignment grade will be dropped.

Hexapod Order Quiz: There will be one **in-class quiz** in the course, which will assess your knowledge of the hexapod orders that we'll cover during the first few weeks of the semester. This quiz will consist of multiple choice and fill-in-the-blank questions.

Exams: There will be three exams in the course- **two preliminary exams** during the semester, as well as a **cumulative final exam** during Finals Week. These exams are designed to assess your mastery of the course content and will consist of a mixture of multiple choice, fill-in-the-blank, and free response questions.

Group Project: Throughout the course, students will work in small teams on a **group project** in which they critically read and present an article from a peer-reviewed journal. The goal of this project is to help you practice effectively engaging with the primary literature, which is a crucial skill for any scientist. Additionally, this project will allow you to further explore a topic in entomology that is of interest to you. More information about the project will be presented in class during the beginning of the semester and also posted on Canvas. The project will be divided into multiple parts, to be submitted at different points during semester. The due dates for each part are listed later in this syllabus (see the Course Schedule).

Extra Credit: Extra credit assignments may be posted at the **instructors' discretion only**. Any other extra work submitted in order to raise a grade will not be accepted and requests for additional extra credit will not be considered.

Submitting assignments: *All assignments must be submitted electronically via Canvas unless otherwise noted. Emailed or paper submissions for Canvas assignments will not be accepted. You are responsible for ensuring that all your work is uploaded correctly and completely by the deadline. Corrupted files will be treated as missing work (= 0 grade) until they are reuploaded correctly and late penalties will apply if your resubmission is past the deadline. So, please always double check your files right after you upload them! If you*

experience technical problems when submitting your work in Canvas, contact the UF Computing Help Desk for assistance: <https://helpdesk.ufl.edu>.

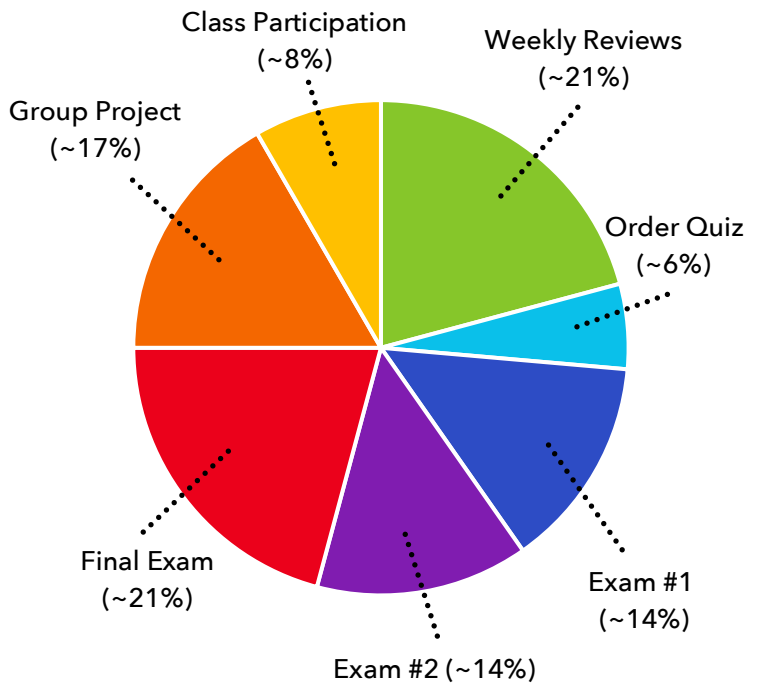
Grading Policies

This course uses a points system for grading. The anticipated maximum that can be earned in the course is **720 points**, distributed as follows:

Weekly Reviews: **150 pts (15 pts ea.)**
Hexapod Order Quiz: **40 pts**
Preliminary Exams: **200 pts (100 pts ea.)**
Final Exam: **150 pts**
Group Project: **120 pts**
Class Participation: **60 pts**

At the end of the semester, your total course grade will be converted to a letter grade using the scale below:

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



Please note that the instructors do not round up grades— requests to do so will not be considered.

For current UF policies on assigning grade points, consult the following policy website: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Disputing a grade: If you wish to dispute a grade for any exam/assignment, you must contact the instructors in writing within two days (48 hours) after the assignment has been returned. In your message, you must include a specific explanation for why you think the grade is incorrect and how you think it should be changed. An instructor will then arrange a meeting with you to discuss the issue and determine whether or not the grade should be changed. The grade assigned following this meeting will be final.

Attendance & Participation

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/>.

The learning experience is greatest when everyone in the class is present and contributes; if you are absent, you will not be able to share your insights during class or benefit from the insights of your peers and instructors. Thus, all students are expected to **attend every class session on time and stay for the entire session**. Since this is a **face-to-face course**, you will *not* have the option to join remotely via Zoom (and our class sessions will not be recorded).

Students are also expected to be **fully prepared for and engaged** in each session– this includes completing all required readings/videos, submitting all assignments on time, paying attention during class, and actively participating in all class activities. Participation in our class sessions is worth **60 points (~8% of your final course grade)**.

If you need to miss a class due to an **excusable absence**, you must let the instructor know **as far in advance as possible** to discuss arrangements for making up missed work. Excusable absences include serious illness or injury, family emergencies, approved professional activities, severe weather, religious holidays, & court-imposed legal obligations. In order to make up missed work, you will be required to submit appropriate documentation of your absence via the official **Instructor Notification portal**: <https://care.dso.ufl.edu/instructor-notifications>.

If you are absent for any other reason or fail to notify the instructor of your absence in a timely manner, you will earn a 0 for any in-class work that you missed (make-up work will not be accepted). Please note that personal travel/vacations are not considered excusable absences, and thus students will earn a 0 for any work missed due to personal travel/vacations during the course.

If you do miss a class meeting, we recommend that you contact a classmate for notes from that session; the instructors will not provide notes. If the content is still unclear after you review your classmate's notes (and the required readings/other materials on Canvas), please don't hesitate to come to office hours or schedule a meeting with an instructor. We ask that you please come to that meeting prepared to discuss the specific questions you have.



Late Work & Make-Up Assignments/Exams

All assignments are due **by the date and time indicated on the assignment page in Canvas**. For all assignments *except exams and quizzes*, there is a **12-hour grace period** after the deadline during which you may submit the assignment without incurring late penalties. If an assignment is submitted after that grace period, **20% of its total point value will be deducted for every day that it is late**.

Extensions for these assignments will be considered on a *case-by-case basis* (and granted at the instructors' discretion) **only in the event of unforeseen emergencies**. In such a case, you must contact the instructors as soon as possible to discuss your situation. You must also submit appropriate documentation of your emergency via the official **Instructor Notification portal** in a timely manner: <https://care.dso.ufl.edu/instructor-notifications>. No extensions will be granted for students who miss a deadline for any other reason. Please note that credit cannot be earned on

any assignment that is submitted after the instructor has graded and returned that assignment to the class, regardless of the circumstances. Late work will also not be accepted after the deadline for the final assignment in the course.

A note about deadlines: Remember, the due date doesn't have to be the "do" date! In other words, we encourage you to work on your assignments in advance- don't wait until right before the deadline to submit your work! Last-minute computer problems or other non-emergency situations that arise right before the submission cut-off are not valid reasons for requesting an extension. Such requests will not be considered and the late penalties described above will be applied to your work if it is not submitted on time.

Exams and quizzes must be taken at their scheduled dates and times (as indicated in the Course Schedule below). A make-up exam/quiz will *only* be offered to students who have to miss it due to a **documented emergency**. In this case, students must contact the instructor as soon as possible to inform them of the situation and also submit appropriate documentation of their emergency via the official **Instructor Notification portal** (<https://care.dso.ufl.edu/instructor-notifications>) within 5 days of the exam date. The make-up exam/quiz will be similar in format to the original, but will consist of different questions.

If you miss an exam/quiz for any other reason, you will not be permitted to make it up and will earn a grade of 0 for it. Remember, vacations are not excusable absences, so students will **not** be allowed take a make-up exam/quiz to accommodate personal travel plans.

Course Schedule

Below is a tentative* schedule of topics & assignments for the semester. Readings/videos for each session will be posted on Canvas and must be completed before the start of class. All assignments must be submitted via Canvas by 11:59pm on the due date (unless indicated otherwise).

Week	Date	Topic	Assignments
1	Jan. 10 (Tu)	Course Introduction The Importance of Insects	
	Jan. 12 (Th)	Overview of Arthropod Diversity	
2	Jan. 17 (Tu)	Non-Insect Hexapods & The Origin of the Insects	Weekly Review #1 (1/20)
	Jan. 19 (Th)	The Insects Take Flight	
3	Jan. 24 (Tu)	Further Diversification of the Insects	Weekly Review #2 (1/27)
	Jan. 26 (Th)	The Evolution of Complete Metamorphosis	
4	Jan. 31 (Tu)	The "Big Four" Insect Orders	Group Project Part 1 (1/31) Weekly Review #3 (2/3)
	Feb. 2 (Th)	Hexapod Order Quiz External Anatomy of Insects	
5	Feb. 7 (Tu)	External Anatomy of Insects	Weekly Review #4 (2/10)
	Feb. 9 (Th)	Internal Anatomy & Physiology of Insects	

6	Feb. 14 (Tu) Feb. 16 (Th)	Internal Anatomy & Physiology of Insects Internal Anatomy & Physiology of Insects	Weekly Review #5 (2/17)
7	Feb. 21 (Tu) Feb. 23 (Th)	Insect Sensory Biology & Communication Preliminary Exam #1	
8	Feb. 28 (Tu) Mar. 2 (Th)	Insect Sensory Biology & Communication Insect Sensory Biology & Communication	Group Project Part 2 (2/28) Weekly Review #6 (3/3)
9	Mar. 7 (Tu) Mar. 9 (Th)	Insect Courtship & Reproduction Insect Courtship & Reproduction	Weekly Review #7 (3/10)
10	Mar. 14 (Tu) Mar. 16 (Th)	Spring Break- NO CLASS!	
11	Mar. 21 (Tu) Mar. 23 (Th)	Social Insects Social Insects	Weekly Review #8 (3/24)
12	Mar. 28 (Tu) Mar. 30 (Th)	Insect-Plant Interactions Insect-Plant Interactions	Group Project Part 3 (3/28) Weekly Review #9 (3/31)
13	Apr. 4 (Tu) Apr. 6 (Th)	Predators, Parasites, & Pathogens Preliminary Exam #2	
14	Apr. 11 (Tu) Apr. 13 (Th)	Integrated Pest Management Integrated Pest Management	Weekly Review #10 (4/14)
15	Apr. 18 (Tu) Apr. 20 (Th)	Medical & Veterinary Entomology Additional Applications of Entomology	Weekly Review #11 (4/21)
16	Apr. 25 (Tu)	Insects in a Changing World Course Wrap-Up & Reflections	Group Project Part 4 (4/25)
Finals Week	May 1 (M)	Final Exam 3:00pm - 5:00pm in 1031 Steinmetz Hall	

* Although we will do our best to adhere to this schedule, it may be adjusted during the semester to accommodate opportunities, disruptions, and other circumstances. These changes will be communicated clearly via Canvas.



List of Important Dates

Key dates to remember are below– be sure to add them to your calendar now! Due dates for other assignments are listed in the Course Schedule above and/or on Canvas.

- February 2: Hexapod Order Quiz
- February 23: Preliminary Exam #1
- March 11-18: Spring Break (no class)
- April 6: Preliminary Exam #2
- April 25: Group Project Final Product due
- May 1: Final Exam

COVID-19 Safety

This is a **face-to-face course** that requires hands-on lab work and in-class discussions. Thus, all students must attend class in person to fully participate (see the Attendance Policy above). To help maintain a safe learning environment, everyone is expected to comply with all **COVID-19 safety guidelines** that are posted on the course Canvas website, as well as the university-wide policies relating to COVID-19 (which can be found at <https://coronavirus.ufl.edu>). Students who do not follow these guidelines will be dismissed from class and considered absent for that day, and may also be reported to the Dean of Students Office for misconduct. Due to the unpredictable nature of the pandemic, these guidelines may change during the semester; all changes will be clearly communicated in class and via Canvas. It is your responsibility to stay informed of these updates and adhere to the latest guidance provided by the instructors. Thank you for doing your part to keep our community safe!

University Policy on 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>.

Instructor's note: Any action that *subverts the learning goals* of the course (or a particular course activity) will be treated as academic misconduct and reported to the Dean of Students Office. This includes- but is not limited to- cheating or assisting others in cheating, plagiarism (i.e., misrepresenting someone else's work as your own, whether it is copied directly or paraphrased), self-plagiarism (i.e., copying/reusing work that you have submitted previously), collaborating with others when it is not permitted, fabricating data, lying to an instructor, and bad faith attempts to undermine the intent of an learning activity. In addition to being reported to the Dean of Students Office, a student will earn a grade of 0 on any assignment that is plagiarized or that otherwise violates these academic honesty policies. This 0 grade is irreversible- it cannot be dropped and the assignment cannot be

resubmitted for a different grade. After this, any subsequent incidents of plagiarism or academic honesty will result in an automatic E (= failing grade) in the course.

Accommodations 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.

Disability Resource Center

001 Reid Hall
(352) 392-8565 | <https://disability.ufl.edu/>

Instructor's note: *We want you to succeed in this course! To ensure your accommodations are in place when you need them, please be sure to have your DRC accommodation letter sent to us as early as possible- ideally at the beginning of the semester.*

Policy on Recording Class Sessions

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.

Use of Electronic Devices

You may use personal electronic devices such as laptops or tablets in class, unless otherwise noted by the instructor. However, it is your responsibility to make sure that you use your devices in a **professional and courteous manner**. This includes:

- Limiting device use only to activities that are **directly related to your learning of course material**, such as taking notes or following along with the lecture slides. Using your devices for any other purpose is not allowed in the classroom; doing so is disrespectful to the instructor, distracting to your fellow students, and robs you of a quality learning experience.
- Keeping your devices **muted at all times** to prevent disrupting others around you.
- Quietly stepping out into the hall if you must take a call or contact someone. We understand that emergencies can happen and will not prevent you from attending to them, but we also ask that you try to minimize disruptions to your peers.

If your device use is disruptive or inappropriate, you will be asked to put away your device. Students who repeatedly violate this policy will no longer be allowed to use devices in class.

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.

Course Evaluations

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/>.

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

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

3190 Radio Road ♦ (352) 392-1575 ♦ <https://counseling.ufl.edu/>

Other campus resources include:

U Matter, We Care: <http://umatter.ufl.edu>

Career Connections Center: Reitz Student Union- First Floor; (352) 392-1601;
<http://career.ufl.edu>

Student Success Initiative: <http://studentsuccess.ufl.edu>

Student Complaints: Complaints regarding on-campus courses may be filed at <https://sccr.dso.ufl.edu/policies/student-honor-code-studentconduct-code/>. For online courses, please see <https://distance.ufl.edu/getting-help/student-complaint-process/>

It is your responsibility to ensure that you fully understand the policies outlined in this syllabus as well as the policies of the university as they relate to this course. By remaining enrolled in this course, you agree that you have read and understood all of these policies and that you agree to be held accountable to them.

At their discretion, the instructors may change aspects of the course during the semester to accommodate new opportunities, unforeseen disruptions, or other circumstances. These changes will be communicated clearly in class and through Canvas. The current version of the syllabus will always be available on our course's Canvas website. It is your responsibility to ensure that you are following the most recent version of the syllabus.

If you have any questions, please contact the instructors as soon as possible (preferably at the beginning of the course)!

Cover Photo: Horse fly (Tabanidae)
by Nicky Bay ([flickr.com/photos/nickadel/](https://www.flickr.com/photos/nickadel/))