

ENY4004C: General Entomology

“Know the smaller majority”

Catalog description:

ENY 4004C COS-BIOL4(2,6). General Entomology: PR: earned a "C" (2.0) or better in both BSC 2010C and BSC 2011C, or C.I. Biology of insects: identification, taxonomy, physiology, behavior, and ecology. Occasional. M&S fee \$15.00

Class Meeting Time: Tuesday and Thursday **10:00am – 10:50am**, Virtually on Zoom (Synchronous class).

Lab Meeting Time: Tuesday and Thursday **11:15am – 1:45pm**, Virtually on Zoom, Occasionally in the Field (Synchronous in class or the field).

Instructor:

Dr. Barbara Sharanowski

Biology 441

barb.sharanowski@ucf.edu

Office Hours: Wednesday 2:00-3:00pm – **Join Virtual Zoom Link**, and by appointment, appointment recommended

Graduate Teaching Assistant:

Davide Dal Pos

Biology 442

davide.dalpos@knights.ucf.edu

Virtual Office Hours: Monday 3:00-4:00pm

Undergraduate Teaching Assistant

Carl Bowling

Biology 442

carl.bowling@knights.ucf.edu

In Lab Help: Tuesdays/Thursdays 1:00 - 1:45pm

ZOOM:

Because of the continued remote instruction requirement due to the COVID-19 pandemic, this course will use Zoom for synchronous (“real time”) class meetings. Thus we will meet on zoom during scheduled class time.

Please take the time to familiarize yourself with Zoom by visiting the UCF Zoom Guides at <https://cdl.ucf.edu/support/webcourses/zoom/>. You may choose to use Zoom on your mobile device (phone or tablet) and video is highly recommended.

Things to Know About Zoom:

You must sign in to my Zoom session using your UCF NID and password.

The Zoom sessions may be recorded. Improper classroom behavior is not tolerated within Zoom sessions and may result in a referral to the Office of Student Conduct.

You can contact Webcourses@UCF Support at <https://cdl.ucf.edu/support/webcourses/> if you have any technical issues accessing Zoom.

Flexibility and Accountability Statement:

I recognize and understand the difficult times we are all in. The COVID-19 pandemic impacts us all in many ways, including physical, mental, emotional, financial, academic, and professional. For that reason, I will work with all of you to accommodate challenges you may be encountering and to provide the tools and support necessary for you to succeed. Please also be patient with me, as I am a human, like you, who is also impacted by these elements.

I will understand the necessity of prioritizing other aspects of your life and will work with you to make the best decisions regarding your success in this course. However, this does not mean that I will not hold you accountable, especially in terms of class attendance, participation, and contributions. Therefore, I ask that you inform me in writing (email or Canvas) of any class absences, missed or late assignments, or days where you will be attending the class but won't be able to **make meaningful contributions** (by having your cameras and microphones on and participating in our class activities).

Diversity, Equity, and Inclusion:

The University of Central Florida considers the diversity of its students, faculty, and staff to be a strength and critical to its educational mission. UCF expects every member of the university community to contribute to an inclusive and respectful culture for all in its classrooms, work environments, and at campus events. Dimensions of diversity can include sex, race, age, national origin, ethnicity, gender identity and expression, intellectual and physical ability, sexual orientation, income, faith and non-faith perspectives, socio-economic class, political ideology, education, primary language, family status, military experience, cognitive style, and communication style. The individual intersection of these experiences and characteristics must be valued in our community.

Title IX prohibits sex discrimination, including sexual misconduct, sexual violence, sexual harassment, and retaliation. If you or someone you know has been harassed or assaulted, you can find resources available to support the victim, including confidential resources and information concerning reporting options at www.shield.ucf.edu and <http://cares.sdes.ucf.edu/>.

If there are aspects of the design, instruction, and/or experiences within this course that result in barriers to your inclusion or accurate assessment of achievement, please notify the instructor as soon as possible and/or contact Student Accessibility Services.

Scope of Course: Insects affect human lives in significant ways every day, from pollinating our crops to transmitting deadly diseases. This course provides an excellent background in general entomology, including the classification, anatomy, physiology, behavior, ecology, and evolution of insects. There is a large focus on how insects impact human life and ecological interactions between insects and other organisms across diverse ecosystems. The lab focuses on identifying common insects across all orders as well as developing skills in insect collecting, preservation, curation, and imaging. This course is useful for anyone considering a career in entomology, museum-based careers, and for any student interested in taxonomy, biodiversity, systematics, evolution, insect morphology, and applied aspects of insect identification and pest control.

Course Philosophy

Students' Learning Responsibilities

Students are expected to practice personal and academic integrity and to take responsibility for one's own personal and academic commitments. Within the context of this class, regular attendance is critical to facilitate effective learning. Participation in class is expected and heavily encouraged. Students should respect others and contribute to cooperative learning by promoting a respectful atmosphere and striving to learn from differences in people, ideas, and opinions. Students are expected to be prepared for class and submit assignments on time. Students are highly encouraged to ask for help under any circumstances, but

particularly if having difficulty with material or learning. Video is not mandatory during class times, but is highly encouraged, especially during the lab. It is important that we foster a sense of community within our class to feel connected to each other and the material we are learning. It is also really nice for me to get to know you, and I can only do that when I can see your faces.

Instructor's Notes:

The instructor reserves the right to make changes to the syllabus and the management of the class at any time during the semester. These changes will be announced in lecture. If the student is in disagreement with anything contained within the syllabus (e.g. course material, structure, grading policy, etc), it is recommended that the student withdraw from the course prior to the university posted deadline. The instructor also reserves the right to **adjust grades up or down** upon a request for a re-assessment by the student.

Student Learning Outcomes:

After completion of the course, students should be able to:

(Cognitive)

- Differentiate an insect from other life forms and know the basic anatomy of an insect.
- Understand the classification of insects, importance of taxonomy to other disciplines, and appreciate the vast diversity of insect life and form and function
- Recognize insect morphological characteristics, including external and internal anatomy
- Describe basic insect physiology, including growth and development of different types of insects
- Recognize, evaluate, and articulate the advantages and disadvantages of different management strategies in pest control of insects.

(Behavioral)

- Collect insects for study using a range of aquatic, aerial and terrestrial field collecting techniques
- Identify all orders and common families of insects
- Preserve specimens for museum study and appreciate the importance of museums for teaching, research, and outreach
- Research a topic of interest and be able to communicate scientific knowledge in a meaningful way to a broad audience

(Affective)

- Understand the value and importance of insects and understand the ecological roles insects have in different ecosystems
- Appreciate the global impact of insects on human existence with respect to disease transmission and agricultural production

Classroom Conduct: By enrolling at UCF, all students have agreed to abide by the Golden Rule. Please become familiar with this document at: <http://www.goldenrule.sdes.ucf.edu/>. Please also use common courtesy in class (even though virtual) by arriving on time, refraining from sleeping/ talking during class, muting your microphone when you are not speaking, follow Zoom politeness when asking questions (either via chat or by using the raise your hand button) and **turning off** cell phones, music devices, etc. Students are responsible for all announcements made or assignments given during class. Students who fail to abide by the above may be asked to leave the class/sign out of zoom.

Academic Integrity:

Plagiarism or any other form of cheating in examinations, term tests or academic work is subject to serious academic penalty. Cheating in examinations or tests may take the form of copying from another student, using unauthorized materials during the exam, or collaborating with classmates during an exam. Exam cheating can also include exam impersonation. Cheating is often quite obvious to professors and

there is no need for it. This class will be fun and exciting, and I hope you are all interested in learning the material. A student found guilty of contributing to cheating in examinations or assignments is also subject to serious academic penalty. Plagiarism involves an attempt to pass off the work and ideas of others as one's own and is considered cheating. Citing all sources for ideas, images, or otherwise is essential. Students must cite the source of images used in their presentations, but are encouraged to take their own photographs. Students should acquaint themselves with the University's policy on plagiarism, cheating, exam impersonation, and duplicate submission (see <http://www.goldenrule.sdes.ucf.edu/>). Electronic detection tools may be used to screen assignments in cases of suspected plagiarism.

Disability Access Statement:

The University of Central Florida is committed to providing reasonable accommodations for all persons with disabilities. This syllabus is available in alternate formats upon request. Students with disabilities who need accommodations in this course must contact the professor at the beginning of the semester to discuss needed accommodations. Students who need accommodations must be registered with Student Disability Services, Student Resource Center Room 132, phone (407) 823-2371, TTY/TDD only phone (407) 823-2116, before requesting accommodations from the professor.

Inquiries to the Instructor:

Students are encouraged to discuss issues pertaining to assignments with the instructor well in advance of deadlines. While every effort will be made to return student inquiries via email as soon as possible, students should expect a minimum of 24 hours to receive a response during weekdays from 9am-5pm. Responses should not be expected on weekends (We all need downtime). Students are encouraged to join the zoom link during office hours for assistance. I really like when students come to office hours – please feel free to chat with myself or the TAs about the class and your performance. I often have numerous tips for doing better if you are not getting the grades you want.

Instructional Methods:

This course combines traditional lecture and interactive laboratories to achieve course and learning objectives. Traditional lectures are intended to introduce the major morphological features for different insect lineages and to explain the current understanding of insect evolution in a phylogenetic framework. During lab sessions students will sort, curate and identify their own collected material and learn how to identify various insects. Field days are scheduled but may be cancelled or delayed due to weather. Students should come prepared to hike for field days with proper shoes, a hat, sunscreen, long pants to prevent scrapes, water and snacks for sustenance, and insect repellent if needed. We will need to follow COVID safety protocols during field days, be prepared to come on campus and have your mask.

Exam Formats:

As we are virtual exams will be held online through WebCourses. Exams are open book, but I ask most questions in a way that requires understanding of the material. Thus, studying is critical to learn the material. Googling and looking things up in your note will rarely help you. Further, the exams will be timed, with a large question pool, and randomized, so questions will be different for different test takers. Exams will be held during class time, thus I will be available on Zoom to answer questions and assist if you have technical difficulties. You do not need your video on during Exams, but you do need to be logged into Zoom and Webcourses.

Late Assignments:

Late assignments will be deducted 10% of the final grade for that assignment for every 24-hour period it is late. Assignments must be submitted at class time on the date and time due. Late is considered past the set time noted in the due date. Thus, if an assignment is due at 8:30am and is handed in at 1pm on the same day, it is still considered 1 day late.

Missed Assignments:

To pass the course, all items for which a mark is allocated must be completed and submitted. Additionally, the lab component of the course must be passed to successfully complete the course. Unexcused missed assignments will result in a failure of the class. Where assignments are missed and excused through written notification such as a doctor's certification of illness, evidence of death in the family, or other circumstances that are beyond the control of the student, the student may be given the options below.

- 1) Complete the assignment and receive the late assignment penalty as described above,
- 2) Establish a new due date with the instructor and complete the assignment without penalty when handed in by the new due date, or
- 3) The final grade will be determined by increasing the value of the final class or lab exam (for missed lab assignments or missed class midterm) by the amount that would have been allocated to the missed assignment. **Option three is only viable under extreme circumstances.**

It is essential you communicate with me if you are going to miss an assignment. Please let me know what your circumstances are.

Missed Exams:

See above, however all students must write both the lab and class final exams to pass the course. If the final exam has been missed for a valid, documented reason such as illness, or death in the family, another exam date will be set at the discretion of the instructor.

COVID-19 and Illness Notification:

Students who believe they may have a COVID-19 diagnosis should contact UCF Student Health Services (407-823-2509) so proper contact tracing procedures can take place.

Students should not come to campus if they are ill, are experiencing any symptoms of COVID-19, have tested positive for COVID, or if anyone living in their residence has tested positive or is sick with COVID-19 symptoms. CDC guidance for COVID-19 symptoms is located here: (<https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>)

Students should contact their instructor(s) as soon as possible if they miss class for any illness reason to discuss reasonable adjustments that might need to be made. When possible, students should contact their instructor(s) before missing class.

In Case of Faculty Illness:

If the instructor falls ill during the semester, there may be changes to this course, including having a backup instructor take over the course. Please look for announcements or mail in Webcourses@UCF or Knights email for any alterations to this course.

Course Accessibility and Disability COVID-19 Supplemental Statement

Accommodations may need to be added or adjusted should this course shift from an on-campus to a remote format. Students with disabilities should speak with their instructor and should contact sas@ucf.edu to discuss specific accommodations for this or other courses.

Course materials:

Not mandatory, it is a nice reference text book but by no means essential.

Textbook – The Insects: An Outline of Entomology. P.J. Gullan and P.S. Cranston. 2014. 5th Edition, ISBN 978-1-118-84615-5. Available as E-book online.

Recommened: USB Digital Microscope:

If you would like to look at insects a little closer you can buy a phone or computer attachable digital microscope. All of the insects you need to know for the exam are sight ID'able, but this may help key insects out and is just cool if you like looking at things up close at home.

- Bysameyee USB Digital Microscope 40X to 1000X, 8 LED Magnification Endoscope Camera with Carrying Case & Metal Stand, Compatible for Android Windows 7 8 10 Linux Mac (Does not work on iphones or iPADS) – \$25.99: <https://tinyurl.com/y43x8uk3>
- Can search for USB Digital Microscope iphone for other products ranging at about 40\$

Required: Collecting Kit (provided to you)

- Net
- Insect Collecting Box
- Vials
- Kill Jar
- Ethanol
- Card Stock for labels
- Point mounts
- Glue

Assessment and Grades:

Grade Evaluation

<u>Assignment</u>	<u>Percent</u>	<u>Format</u>
1. Syllabus Exam	2.50%	Online
2. Lab Quiz (Morphology)	5.00%	Online
3. Lab Quiz (Orders)	5.00%	Online
4. Lab quiz (Families 1)	5.00%	Online
5. Lab quiz (Families 2)	5.00%	Online
6. Lab Quiz (Families 3)	5.00%	Online
7. Class Midterm1	12.50%	Online
8. Class Midterm2	12.50%	Online
9. Academic Presentation	15.00%	In Class – Zoom
10. Lab Insect Collection	12.50%	Hand In
11. Class Final	20.00%	Online

Grading Scheme: A = 100-90; B = 89-80; C=79-70; D=69-60; F (fail) < 60

Description of Examinations:

Syllabus Exam (2.5%)

This short exam tests your knowledge of the information obtained in this syllabus, rules mentioned in class, as well as descriptions of assignments handed out in class. Basic class rules and assignments are the focus. Note: My pet peeves are misuse of the word “like” and “literally” and the sound of crinkly chip bags or people chewing.

Class Midterm (12.5% each) and Class Final (20%)

The midterm and final exam will consist of multiple-choice, short-answer and short paragraph questions about specific topics covered in lectures and class discussions. Questions will assess student's mastery of the content and ability to communicate and defend viewpoints on specific issues related to insects and their impact on the environment and human life. Some content is taught in both lecture and lab and will require students to integrate the knowledge learned in both sections.

Pretest

A Pretest will be given out on the first day to test student's knowledge and background information upon entering the class. There are no grades associated with this test, it is purely to assist the instructor.

Lab Quizzes (5% each)

The lab quizzes will assess student's ability to identify insects by knowing key morphological characteristics that define orders and common families of insects learned within the laboratory. Students will be expected to know specific identifying characteristics of organisms to allow them to identify multiple families of insects across all orders. For example, Scarabaeidae (scarab beetles) can be identified by their lamellate antennae, spiny legs, robust and somewhat oval shaped body. You will be expected to know the spelling of orders and families.

Description of Assignments

Academic Oral Presentation (15% of final grade):

The purpose of this assignment is to ensure students can research an entomological topic of interest and communicate about entomological science in an academic manner. Students will choose an insect or topic to research but should obtain approval/feedback from the professor. Quality of research is the most important element. Students will present their topic to the class on Zoom (5 minute oral presentation, followed by 2 minutes of questions). Power point is strongly recommended as a delivery format and students can pretape/video, voice over their presentations. See assignment handout and grading rubric for more details.

Insect Collection (12.5% of final grade)

The purpose of the collection is to teach students how to collect, sort, and identify insects – with a focus on adult insects. Students will also learn how to properly curate and preserve insect specimens, including proper mounting, labeling, and storage. Students must hand in 25 curated and identified specimens. See assignment handout and grading rubric for more details.

Specimen Check

Students are heavily encouraged to have a minimum of 10 specimens checked by the T.A. for proper labeling and curation by mid-semester.

Assignment and Exam Due Dates

See Handout and next page

Course Schedule:

See Handout and next page

Schedule is subject to change by the Instructor. Exam dates and assignment due dates will remain static unless there is a university cancellation.

Date	Day	Topic	Tests and Assignments	Opt. Readings	Lab
12-Jan	T	Overview of Class, Intro to insects	Pretest	Ch: 1	No Lab
14-Jan	TH	External Anatomy	Syllabus Test* Mandatory	Ch: 2	No Lab
19-Jan	T	Insect Classification: The Orders		Taxoboxes	External Anatomy
21-Jan	TH	Insect Classification: The Orders	Lab Quiz (Morphology)	Taxoboxes	Using Keys, The Orders 1
26-Jan	T	Insect Growth and Development		Ch: 6	The Orders 2
28-Jan	TH	Internal Anatomy & Physiology	Lab Quiz (Orders)	Ch: 3	Curation, Labeling, Hymenoptera 1
2-Feb	T	Systematics, Museums		Ch: 7	Hymenoptera 2
4-Feb	TH	Six-legged Sex: Reproduction		Ch: 5	Coleoptera 1
9-Feb	T	Class Midterm 1	Class Midterm 1		Collecting methods
11-Feb	TH	Field Day			Field Day
16-Feb	T	Insect Communication/Behaviour		Ch: 4	Coleoptera 2
18-Feb	TH	Defense and Mimicry	Lab Quiz (Families 1)	Ch: 14	Neuroptera, Megaloptera, Siphonaptera, Mecoptera
23-Feb	T	Social Insects 2		Ch: 12	Diptera 1
25-Feb	TH	Ground-Dwelling insects		Ch: 9	Diptera 2
2-Mar	T	Field Day			Field Day
4-Mar	TH	Aquatic Insects		Ch: 10	Lepidoptera
9-Mar	T	Insects and Plants	Lab Quiz (Families 2)	Ch: 11	Hemiptera 1
11-Mar	TH	Pollination, Co-evolution, Mutualism		Ch: 11, 14	Hemiptera 2
16-Mar	T	Predators		CH:13	Psocodea, Orthopteroid Orders 1
18-Mar	TH	Class Midterm 2	Class Midterm 2		Work on Collections
23-Mar	T	Parasitoids		Ch: 13	Orthopteroid Orders 2 - specimen check
25-Mar	TH	Parasites	Withdraw Deadline	CH:13	Odonata, Ephemeroptera
30-Mar	T	Class Presentations	Class Presentations		Class Presentations
1-Apr	TH	Forensic Entomology		Ch: 15	Class Presentations
6-Apr	T	Med/Vet Entomology		Ch: 15	Hexapod Orders
8-Apr	TH	Pest Management - Ag and Urban	Lab Quiz 3 (Families 3)	Ch: 16	Work on Collections
13-Apr	T	Spring Break - No classes			
15-Apr	TH	Spring Break - No classes			
20-Apr	T	Biocontrol		Ch: 16	Live Insects, Rearing
22-Apr	TH	Art, Careers, Class Wrap Up	Collections Due		No Lab

Syllabus Quiz:

I will ask you questions on:

- My office hour times, policies on missed exams, notes, grade reviews, passing the class and lab, presentation topic, the variability of the schedule, COVID policies, assignment details such as citations and handing what to hand in for your presentation, my pet peeves, my email policy, and classroom/Zoom respect, and inclusion policies, participation and video in zoom, what to bring for field days, my favorite insect (which I will mention in the first day of class), my late assignment policies, and Online exam formats.