

ZOO 4205C Invertebrate Biodiversity
Fall 2022
Lecture: T, TH 1230-1350 h, BSFS 102
Lab: TH 0930-1220 h, BSFS 102

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Invertebrate Biodiversity: PR: Complete all of the following. Earned a minimum grade of C in each of the following: BSC2010C - Biology I (4) BSC2011C - Biology II (4) PCB3044 - Principles of Ecology (3) or C.I. Comparative biology of invertebrates, emphasizing morphology, evolution, ecology and conservation biology. Fall

Course outline: In lecture, we will address the natural history of all multicellular invertebrates, from sponges and corals to sea urchins and sea squirts. Lab will be devoted to as much hands-on experience as possible. The goal is to provide you with the background and experience necessary to begin independent or graduate-level research, to step into a job as an invertebrate zoologist, and to better understand the wild world of invertebrates.

Course objectives:

- ✓ To provide a solid background in invertebrate biology
- ✓ To understand the relationship between form and function, habit and habitat
- ✓ To provide hands-on experiences using the scientific method

Required textbook: [Richard C. Brusca, Gonzalo Giribet, and Wendy Moore \(2022\). *Invertebrates*, 4th edition. Oxford University Press, ISBN: 9780197554418 \(paperback\), 1104 pages.](#) The 3rd edition also is acceptable.

Attendance and Participation: Are mandatory in all labs and strongly encouraged in lecture. Lab and lecture will begin promptly at their designated times so don't be late.

If you need help: Web Courses is the required form of communication. Questions about the lab should be directed to Mr. Dal Pos; for everything else, contact Dr. Fauth. Your message must be written in a professional manner and include your full name as it appears in the class roster. We will try to answer questions within two class days unless the answer already is in the syllabus, was answered in class, posted on Web Courses, or can be determined using readily available resources or common sense.

Schedule

Date	Topic	Reading ¹
23 AUG	Course organization & the scientific method	Syllabus
25 AUG	Lab: The power of observations – complete on your own	
	Lecture: From observation to hypothesis testing	
30 AUG	Introduction to the invertebrates	Chapters 1 & 2
01 SEP	Lab & lecture combined: Exam 1, pre-test	
06 SEP	Bauplan and animal development	Chapters 4 & 5
08 SEP	Lab & lecture combined: Curating our invertebrate collection	Preserving and Specimen Handling: Insects and other Invertebrates
13 SEP	Porifera & Placozoa	Ch. 6
15 SEP	Lab & lecture combined: finish curating our invertebrate collection	
20 SEP	Cnidaria & Ctenophora	Ch. 7 & 8
22 SEP	Lab: Porifera, Placozoa, Cnidaria & Ctenophora	Chapters 9-12
	Lecture: Xenacoelomorpha, Platyhelminthes, Nemertea & other protostomes	
27 SEP	Molluscs Part 1	Ch. 13
29 SEP	Lab and lecture combined: course project	Collecting and Preserving Specimens
04 OCT	Molluscs Part 2	
06 OCT	Lab and lecture combined: Exam 2	
11 OCT	Annelids	Ch. 14
13 OCT	Lecture (begins at 0930 h this day): Chaetognatha, spiralian & the Gnathifera	Chapters 15 & 16
	Lab (begins at 1100 h this day): Molluscs, annelids & spiralian	
18 OCT	Nematoda and Nematomorpha	Ch. 18
20 OCT	Lab & lecture combined: course project	

¹ Readings correspond with the 3rd edition of *Invertebrates*

25 OCT	Lophophorates & Scalidophora	Chapters 17 & 19
27 OCT	Lab & lecture combined: course project	Ch. 20
01 NOV	Arthropods & related phyla	Ch. 21
03 NOV	Lab: Flatworms, lophophorates, roundworms & Scalidophora	
	Lecture: Trilobites & crustaceans	
08 NOV	Hexapoda	Ch. 22
10 NOV	Lecture (begins at 0930 h this day): Myriapoda & Chelicerata	Chapters 23 & 24
	Lab (begins at 1100 h this day): Arthropods	
15 NOV	Lecture: Echinoderms Part I	Ch. 25
17 NOV	Lab & lecture combined: course project	
22 NOV	Special topic – Sea Creatures in Glass	
24 NOV	Thanksgiving Holiday – no lab or class	
29 NOV	Echinoderms Part II	
01 DEC	Lecture: Hemichordates & the invertebrate chordates	Chapters 26 & 27
	Lab: Echinoderms and invertebrate chordates	
08 DEC	Exam 3, Final Exam: 1000 AM – noon	

Syllabus: The schedule, topics, activities, and class rules are tentative, and the professor reserves the right to alter them as needed. Students will be notified of changes during class and/or via Web Courses.

Office hours: We will be available via Zoom during the “home office” hours shown below. If you need assistance with a lab, please meet with Mr. Dal Pos. For everything else, please contact Dr. Fauth.

Dr. John E. Fauth	M 1300 – 1500 h or by appointment at another mutually convenient time. Please confirm meetings in advance because academic advisees, graduate students, etc., also meet with me during office hours.
Mr. Davide Dal Pos	W 1000 – 1200 h

“Home office” hours are subject to change to accommodate other responsibilities. Changes will be announced in class and/or on Web Courses. We’re also available during down time of labs.

Grading: Your numerical grade will be determined by your work on the three exams, the course project, and lab assignments, as shown below:

Exam 1, pre-test	5%
Exam 2	20%
Exam 3, final exam	25%
Course project	25%
Lab assignments (weighted equally, except lab curation carries double weight)	25%

All exams are cumulative. You must work independently of others and neither give nor receive assistance or communicate with others during them. Exams will include diverse questions on all aspects of the course, including lecture material, classroom discussions, field work, labs and other activities. Exams will be challenging and will require you to use the scientific method and to apply concepts to new situations. To encourage good study habits and discourage memorize/regurgitate/forget behavior, we will politely decline to answer questions one class day before each exam. Late assignments will not be accepted and will receive a grade of zero. That's how science works: if your grant proposal is late, it won't be accepted and you will not be considered for funding.

I use competency-based grading in all my courses: to earn an A, one must demonstrate the abilities expected of an excellent, undergraduate invertebrate zoologist. **If the entire class demonstrates such abilities, I will be absolutely delighted to give everyone an A! The easiest way for everyone to earn an A is to help each other - peer learning and altruism benefit everyone.** Exam and lab grades will be recorded in Web Courses; we also will post scoring summaries there. Do not pay any attention to the summary columns labeled "Assignments" and "Total" in Webcourses. Your final numerical score will be calculated exactly as stated at the beginning of this section, minus 5 point deductions for each instance of being late for class or lab, or other disruptive, discourteous or unsafe behavior. Leave all weapons securely encased at home or in your personal vehicle; there's no need for them in class, the lab, or during field work.

At the end of the semester, numerical scores will be converted into letter grades as shown here:

92.6 – 100.0	A		70.0 – 77.4	C
89.5 – 92.5	A-		68.5 – 69.5	C-
87.5 – 89.4	B+		67.5 – 68.4	D+
82.6 – 87.4	B		62.6 – 67.4	D
79.5 – 82.5	B-		59.5 – 62.5	D-
77.5 – 79.4	C+		59.4 or less	F

Make-up exams and other assignments: All exams are cumulative, so if an acceptable absence forces you to miss Exam 1 or 2, its weight will be added to the final exam. Similarly, if an acceptable absence forces you to miss the submission deadline for a lab assignment, its weight will be distributed among the remaining lab assignments. Acceptable absences are major illness, serious family emergencies, special curricular or professional requirements (e.g., attending a scientific meeting), court-imposed legal obligations, military obligations, severe weather conditions, religious holidays, and participation in official university-sponsored activities such as intercollegiate athletics. Acceptable absences must be documented, in advance if possible. If you miss an exam for other than an acceptable absence your score will be a zero. Likewise for field work and lab assignments – you must be present and contributing and submit work on time to receive credit. Late submissions will receive a grade of zero – that's how science works in the real world.

Academic integrity: Students should familiarize themselves with UCF's Rules of Conduct at <https://scai.sdes.ucf.edu/student-rules-of-conduct/>. According to Section 1, "Academic Misconduct," students are prohibited from engaging in

1. Unauthorized assistance: Using or attempting to use unauthorized materials, information or study aids in any academic exercise unless specifically authorized by the instructor of record. The unauthorized possession of examination or course-related material also constitutes cheating.
2. Communication to another through written, visual, electronic, or oral means: The presentation of material which has not been studied or learned, but rather was obtained through someone else's efforts and used as part of an examination, course assignment, or project.
3. Commercial Use of Academic Material: Selling of course material to another person, student, and/or uploading course material to a third-party vendor without authorization or without the express written permission of the university and the instructor. Course materials include but are not limited to class notes, Instructor's PowerPoints, course syllabi, tests, quizzes, labs, instruction sheets, homework, study guides, handouts, etc.
4. Falsifying or misrepresenting the student's own academic work.
5. Plagiarism: Using or appropriating another's work without any indication of the source, thereby attempting to convey the impression that such work is the student's own.
6. Multiple Submissions: Submitting the same academic work for credit more than once without the express written permission of the instructor.
7. Helping another violate academic behavior standards.
8. Soliciting assistance with academic coursework and/or degree requirements.

Responses to academic dishonesty, plagiarism, or cheating: students should also familiarize themselves with the procedures for academic misconduct in UCF's student handbook, *The Golden Rule* <<https://goldenrule.sdes.ucf.edu/>>. UCF faculty members have a responsibility for students' education and the value of a UCF degree, and so seek to prevent unethical behavior and respond to academic misconduct when necessary. Penalties for violating rules, policies, and instructions within this course can range from a zero on the exercise to an "F" letter grade in the course. In addition, an Academic Misconduct report could be filed with the Office of Student Conduct, which could lead to disciplinary warning, disciplinary probation, or deferred suspension or separation from the University through suspension, dismissal, or expulsion with the addition of a "Z" designation on one's transcript.

Being found in violation of academic conduct standards could result in a student having to disclose such behavior on a graduate school application, being removed from a leadership position within a student organization, the recipient of scholarships, participation in University activities such as study abroad, internships, etc.

Let's avoid all of this by demonstrating values of honesty, trust, and integrity. No grade is worth compromising your integrity and moving your moral compass. Stay true to doing the right thing: take the zero, not a shortcut.

Withdrawal: The deadline for withdrawal without penalty is published by UCF. You must decide whether to remain in the course by that time. I do not give grades of Incomplete and the Biology Department does not permit NC (No Credit).

Field work: This class will require catching and identifying adult and larval dragonflies in and around campus wetlands. You are expected to dress appropriately for hot, humid Florida weather and to bring drinking water. Wear loose-fitting, breathable protective clothing, including long pants with a belt, calf-high socks, a long-sleeved shirt, and a hat. If you are allergic to pollen, wetland plants, insect bites, or insect stings, I strongly recommend that you carry the necessary first aid (e.g., rescue inhaler, EpiPen) at all times. Both adult and larval dragonflies are predators that can bite. However, their bites generally are not serious because they rarely break human skin.

Course Accessibility Statement: The University of Central Florida is committed to providing access and inclusion for all persons with disabilities. Students with disabilities who need access to course content due to course design limitations should contact the professor as soon as possible. Students should also connect with Student Accessibility Services (SAS) <http://sas.sdes.ucf.edu/> (Ferrell Commons 185, sas@ucf.edu, phone 407-823-2371). For students connected with SAS, a Course Accessibility Letter may be created and sent to professors, which informs faculty of potential course access and accommodations that might be necessary and reasonable. Determining reasonable access and accommodations requires consideration of the course design, course learning objectives and the individual academic and course barriers experienced by the student. Further conversation with SAS, faculty and the student may be warranted to ensure an accessible course experience.

Campus Safety Statement: Emergencies on campus are rare, but if one should arise during class, everyone needs to work together. Students should be aware of their surroundings and familiar with some basic safety and security concepts. In case of an emergency, dial 911 for assistance – even when doing field work!

Every UCF classroom contains an emergency procedure guide posted on a wall near the door. Students should make a note of the guide's physical location and review the online version at http://emergency.ucf.edu/emergency_guide.html. Students should know the evacuation routes from each of their classrooms and have a plan for finding safety in case of an emergency.

If there is a medical emergency during class, students may need to access a first-aid kit or AED (Automated External Defibrillator). To learn where those are located, see <https://ehs.ucf.edu/automated-external-defibrillator-aed-locations>.

To stay informed about emergency situations, students can sign up to receive UCF text alerts by going to <https://my.ucf.edu> and logging in. Click on "Student Self Service" located on the left side of the screen in the toolbar, scroll down to the blue "Personal Information" heading on the Student Center screen, click on "UCF Alert", fill out the information, including e-mail address, cell phone number, and cell phone provider, click "Apply" to save the changes, and then click "OK."

Students with special needs related to emergency situations should speak with their instructors outside of class.

To learn about how to manage an active-shooter situation on campus or elsewhere, consider viewing this video (<https://youtu.be/NIKYajEx4pk>).

Make-Up Assignments for Authorized University Events or Co-curricular Activities: Students who represent the university in an authorized event or activity (for example, student-athletes) and who are unable to meet a course deadline due to a conflict with that event must provide the instructor with documentation in advance to arrange a make-up. No penalty will be applied. For more information, see the UCF policy at <https://policies.ucf.edu/documents/4-401.pdf>

Deployed Active Duty Military Students: Students who are deployed active duty military and/or National Guard personnel and require accommodation should contact their instructors as soon as possible after the semester begins and/or after they receive notification of deployment to make related arrangements.

Religious observances: Students must notify their instructor in advance if they intend to miss class for a religious observance. For more information, see the UCF policy at <http://regulations.ucf.edu/chapter5/documents/5.020ReligiousObservancesFINALJan19.pdf>

In-Class Recording Statement: Students may, without prior notice, record video or audio of a class lecture for a class in which the student is enrolled for their own personal educational use. A class lecture is defined as a formal or methodical oral presentation as part of a university course intended to present information or teach students about a particular subject. Recording classroom activities other than class lectures, including but not limited to lab sessions, student presentations (whether individually or part of a group), class discussion (except when incidental to and incorporated within a class lecture), clinical presentations such as patient history, academic exercises involving student participation, test or examination administrations, field trips, and private conversations is prohibited. Recordings may not be used as a substitute for class participation and class attendance, and may not be published or shared without the written consent of Dr. Fauth. Failure to adhere to these requirements may constitute a violation of the University's Student Code of Conduct as described in the Golden Rule.

Three keys to success:

- Pay attention
- Work hard
- Have fun!

