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# INVERTEBRATE BIODIVERSITY

ZOO 4205C

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## SPRING 2026 • THE UNIVERSITY OF FLORIDA

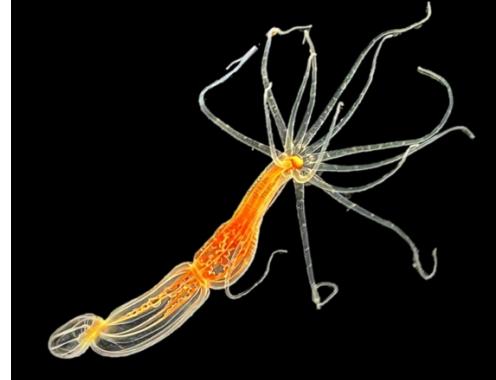
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### CLASS TIMES

Lecture: Wednesday and Friday 11:45 am – 1:40 pm,  
Bartram Hall Room 211

Lab Sections: Carr Hall Room 120

- Section 344C Thursday 3 pm – 6 pm
- Section 344D Friday 1:55 pm – 4:55 pm



### INSTRUCTOR

Dr. Kyle McCulloch

Department of Biology

- Email: [k.mcculloch1@ufl.edu](mailto:k.mcculloch1@ufl.edu)
- In-person Office: Carr 611 – **by appointment only, otherwise I will not be there.**
- Student Office Hours: Thursday 1-2p, or by zoom.

### LAB TA

Wednesday and Friday Labs: Kyle Hudson, [hudson.k@ufl.edu](mailto:hudson.k@ufl.edu)

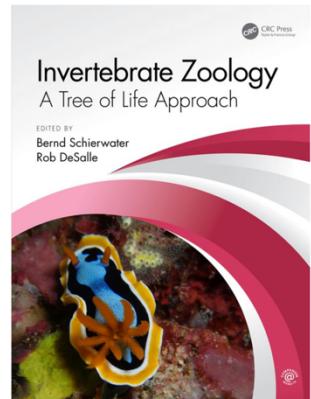
### COURSE GOALS

In this course, you'll learn in brilliant detail about our incredible diversity of invertebrate animals. We will focus on the evolution of these organisms and how they are related to one another. The course will also focus on anatomy, identification, their life histories, and development. Along the way, you'll develop your skills in scientific illustration (no, you don't have to be an artist!), keeping a lab/field journal, reading primary literature and understanding research lectures, and more.

## COURSE REQUIREMENTS

### Textbook

Required: Invertebrate Zoology A Tree of Life Approach. Edited by Bernd Schierwater and Rob DeSalle. I will be taking information from both lecture and the reading assignments from this text for weekly low-stakes quizzes, homework and the bigger exams.



### iClicker

We will be using iClicker for most of our in-class lecture assignments. This will help me see what you know, where sticking points may be, give everyone a chance to participate, and increase how much you learn in class - this is called recall practice, and it is a great way to learn AND study!

You will need to download the iClicker student mobile app via the App Store or Google Play, or you can use the iClicker web app by signing in as a student at [iclicker.com](https://iclicker.com). [Follow the instructions here to create or sign in to your existing UF iClicker account.](#) I have set up iClicker to sync with Canvas, so you have been added directly to our iClicker course if you already had an iClicker account at UF. If iClicker did not find an account, you will have received an invitation to join via email once you [update your existing account's profile](#), or [create a new account](#). Once you've completed that, you should be dropped directly into this course! Here's a join link in case that doesn't work: <https://join.iclicker.com/APJP>.

Now the fun part - participation! I have turned on a GPS location requirement for iClicker, so you can only participate if you are here. Please let me know if you have any issue with this. You will need to allow the device you are using to reveal your location to successfully check in. If you have any issues with your device's location settings, refer to the [Attendance Geolocation Troubleshooting Guide](#).

When it's time for class, make sure you have selected my course from the main screen of iClicker. Select the **Join** button that appears on your screen, then answer each question I ask in iClicker. For short answer, numeric, and target questions, make sure you select **Send**.

**Keep track of your attendance, review your work, and study after class in iClicker.** You can review your grades, performance, and participation in iClicker. You can bookmark the questions I asked during class to turn them into flashcards or practice tests in the [Study Tools section of iClicker](#).

### E-learning

Please set your preferences in E-Learning/Canvas so that you receive timely notifications of course announcements and other information. I will be communicating extensively and often with you using Canvas announcements which you can set to come to your email. When in doubt, go to our Canvas page and click "Announcements" for all of the latest information and assignments.

## Lab Materials

Lab will be primarily specimen and dissection based with a couple of field trips to find and identify living organisms. All dissection materials will be provided. In addition to practical work learning and dissecting specimens, you will also be keeping a lab/field notebook and drawing specimens; these are essential skills that we will practice in this course. You will need: drawing supplies (I suggest drawing pencils and paper if you can get them or have them, but regular notebook or printer paper and standard writing pencils will do, too), a notebook in which to keep your lab notes and drawings – can be bound or a binder with loose-leaf paper, and ideally a waterproof field notebook. You may also wish to have colored pencils, though adding color to drawings is optional. Alternatively, you might wish to use a tablet to draw digitally – whatever you are comfortable using to make high-quality hand drawings. Do NOT use images from your camera/phone or take images from the internet as this will be considered academic dishonesty.

## CONTACTING YOUR INSTRUCTOR

### Student Office Hours

I am available for one-on-one help on more detailed questions about course content, grades, etc., or if you just want to pop on to say hi!

- Office hours are BY APPOINTMENT, available Thursdays 1 pm – 2 pm and other times are also possible if these times do not fit in your schedule – email if needed.
- Please allow **at least 24 hours in between making your appointment and the appointment time** so that I have time to check notifications and know to be there. Otherwise I will not be present in the room waiting.
- Meetings will be in person unless otherwise arranged for zoom.

### Course Questions Forum

For questions that may pertain to the entire class (about an assignment, about course policies), please use the Course Questions Forum on Canvas. Also, don't forget to see if your question has already been answered. Please help classmates, too, if you know the answer!

## Canvas Inbox/Email

I will respond to questions that are individual in nature (grades, absences, etc.) within 24 hours during the week. After 5 pm on Friday I will not respond until Monday. Be professional in tone and expectations. Please do not expect an immediate response. Please do your best to avoid asking me questions whose answers you can find in the syllabus, announcements, or in the Course Questions Forum.

## ASSESSMENTS & GRADING

I will make every effort to have each assignment graded and posted within one week of the due date.

Grade Component	Description	Percentage
Exams	4 non-cumulative exams on topics discussed in lecture and assigned readings. They will be closed-book exams with a variety of question types. Exam dates are included on the schedule. <b>Please check the schedule for exams ahead of time and clear your schedule at those times. Make-ups are not allowed due to work or other personal obligations.</b>	40%
Lab Assignments & Projects	Single or multi-week projects will be assigned that can be completed during the lab period, or occasionally in field environments. Labs are due within one week.	25%
Lab Exams	There will be 2 lab practical exams (see schedule).	20%
Top Hat Homework & In-class Participation	Homework will be assigned on a weekly basis and due at 11:59pm Saturday on Canvas for that week's assignment, or sometimes in-person written quizzes will take the place of homework that week, at my discretion. It will NOT be possible to finish all assignments at the last minute. I suggest you read each chapter and complete the embedded questions for each chapter before the lecture. Do NOT wait until Saturday night. Saturday night internet or website issues are not a valid excuse for late assignments and will not be considered. In-class participation assignments will mainly be conducted using iClicker and attendance is required to get credit.	15%

## Grading Scale

Percent	Grade
≥ 93.00%	A
≥ 90.00%	A-
≥ 87.00%	B+
≥ 83.00%	B
≥ 80.00%	B-
≥ 77.00%	C+

Percent	Grade
≥ 73.00%	C
≥ 70.00%	C-
≥ 67.00%	D+
≥ 63.00%	D
≥ 60.00%	D-
< 60.00%	E

## **"Life Happens" Policy**

Everyone has an off week sometimes! Because of this, I'll be **dropping your lowest 2 assignment grades.**

If you miss assignments, don't worry about asking for extensions UNLESS you already have the maximum number of zeros allowed under this policy which will automatically be dropped from your grade. If you miss additional assignment due dates in excess of those allowed by this policy AND your absence is excusable based on UF policy, please see the Attendance & Make-ups section below for guidelines.

## **ATTENDANCE & MAKE-UPS**

If you have a planned conflict, discuss it with me in advance. If there is an unforeseen circumstance, please let me know as soon as possible. I know that special circumstances may come up, and we will stay in communication to ensure your success. Please see the UF policy for excused absences here: <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>

For some assignments, **extensions MAY be granted** if and only if you have already received other zeros that will be dropped based on the "Life Happens" policy (See the Assessments and Grading section above). You must have a documented excused absence lasting at least the three days before and including the due date. For example, if the assignment is due Sunday, your documentation of absence must include Friday, Saturday, and Sunday to be granted an extension. Submit documentation here: <https://care.dso.ufl.edu/instructor-notifications/> and request a letter be sent to the instructor, then message me in Canvas after your letter has been sent to let me know what assignments you are requesting extensions on, and we will discuss any modified due dates.

**No make-up exams** without prior permission or documentation of illness. Students missing an exam due to a university-approved excused absence should let the instructor know in advance. In case of illness or emergency on exam day, students must submit documentation here: <https://care.dso.ufl.edu/instructor-notifications/> and request a letter be sent to the instructor.

## **ACADEMIC HONESTY**

Any acts of cheating, plagiarism, or other forms of academic dishonesty will result in, at minimum, **a 0 grade for the assignment or test AND a reduction in the course grade by 1 letter**. Sharing information about tests or homework answers with students in future or past classes, or posting on social media information about same, is a serious act of academic dishonesty. Sharing answers for homework, exams, etc. with others (ex. GroupMe, Course Hero) or receiving same is cheating. Turning in assignments that match classmates' is plagiarism. **Unauthorized or undisclosed use of generative AI is plagiarism.** If you witness any instances of academic dishonesty in this class, notify the instructor.

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity by abiding by the Student Honor Code. On all work submitted for credit by Students 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." The Honor Code specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel.

For additional information on academic honesty, please refer to the UF student honor code at: <https://policy.ufl.edu/regulation/4-040/>

## ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

Students with disabilities requesting accommodations should first register with the Disability Resource Center in Reid Hall (352-392-8565) by providing appropriate documentation. Please see the website for more information at: <https://disability.ufl.edu/>. Once registered, students will receive an accommodation letter that must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester. Accommodations are only available to students with this documentation from the DRC, and accommodations are not retroactive (i.e. accommodations cannot be made for assignments submitted prior to Dr. Meadows receiving the letter).

## WITHDRAWAL POLICY

The add/drop deadline and the last day to withdraw from a course with a W on your transcript are listed online here: Dates and Deadlines: <https://catalog.ufl.edu/UGRD/dates-deadlines/>

## UF EVALUATIONS PROCESS

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/>.

## GETTING HELP

If you don't understand something in the **course content or are concerned about a grade**, talk to me ASAP. Do not wait until a failed exam!

However, I **cannot** solve most technical issues because I can't access your account and I am just super not a tech wizard. Instead, please see the resources below for technical difficulties.

## Technical Difficulties

**Any requests for make-ups due to technical issues** must be accompanied by the ticket number received from the Help Desk when the problem was reported to them. The ticket number will document the time and date of the problem. You should e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

- **UF IT Help Desk:** For general troubleshooting or issues with **Canvas**, the Help Desk has your back! <https://it.ufl.edu/helpdesk/>. Available by phone 24/7 at (352) 392-4357, email [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu), or connect via chat on the website. Walk-in at The Hub available, too.
- **Top Hat:** For issues with your Top Hat account, see the support center website: <https://success.tophat.com/s/>. There's a chat on the website as well as many helpful support articles. They can be contacted by phone during business hours at (888) 663-5491.

## Health and Wellness

- [U Matter, We Care](#) ASKING FOR HELP IS A SIGN OF STRENGTH. If you or a friend is in distress, contact If you or someone you know is in distress, please contact counseling 24/7 352-392-1575, or visit [umatter.ufl.edu](#) to refer or report a concern and a team member will reach out to the student in distress. The Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. In case of emergency, call 911
- [Dean of Students Office](#) (352-392-1261) provides a variety of services to students and families, including [Field and Fork](#) (UF's food pantry) and [New Student and Family programs](#)
- [Counseling and Wellness Center](#) (352-392-1575) provides counseling and support as well as crisis and wellness services including a [variety of workshops](#) throughout the semester (e.g., Yappy Hour, Relaxation and Resilience).
- [Office of Student Veteran Services](#) (352-294-2948 | [vcounselor@ufl.edu](mailto:vcounselor@ufl.edu)) assists student military veterans with access to benefits.
- [Career Connections Center](#) (352-392-1601 | [CareerCenterMarketing@ufsa.ufl.edu](mailto:CareerCenterMarketing@ufsa.ufl.edu)) connects job seekers with employers and offers guidance to enrich your collegiate experience and prepare you for life after graduation.
- [UF Police Department](#) (352-392-1111 or 9-1-1 for emergencies)
- [Student Health Care Center](#) (352-392-1161) provides 24/7 information to help you find the care you need.
- [UF Health Shands Emergency Room/Trauma Center](#) (352-733-0111) for immediate health care, call or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608
- [GatorWell Health Promotion Services](#) (352-273-4450) includes prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success.

## Academic and Student Support

- [Career Connections Center](#) (352-392-1601 | [CareerCenterMarketing@ufsa.ufl.edu](mailto:CareerCenterMarketing@ufsa.ufl.edu)) connects job seekers with employers and offers guidance to enrich your collegiate experience and prepare you for life after graduation. Visit in the Reitz Union Suite 1300.
- [UF Libraries Support](#) (866-281-6309 | [ask@ufl.libanswers.com](mailto:ask@ufl.libanswers.com)) offers various types of assistance with respect to using the libraries or finding resources.
- [CLAS Academic Resources](#) (352-392-2010) offers general study skills and free tutoring.
- [UF Writing Studio](#) (352-846-1138) can help with brainstorming, formatting, and writing papers.
- [Dean of Students Office](#) (352-392-1261) provides a variety of services to students.

## TIPS FOR SUCCESS



**Attend and Participate:** Studies show that the more you discuss, draw, analyze, and actively participate in class, the more you learn!



**Read:** Read assigned chapters before lectures. Then use lectures to hone understanding and apply your knowledge.



**Take notes:** Do not be a passive listener! Take active notes during class, especially on questions asked in the lecture.



**Ask questions:** Ask immediately. Don't be afraid to ask me to go over something again! Chances are, others need a clarification, too.



**Use your resources:** Use this syllabus to answer questions about the course and locate help when you need it. Use Canvas. Use each other!



**Plan ahead:** Plan to devote ~15 hrs/wk, including 10 hrs for lecture, discussion, and lab and 5 hrs on reading, assignments, and studying. A 4 credit-hour class takes ~180 hours of work over a semester.



**Study effectively:** Visit [learningscientists.org](http://learningscientists.org) to learn the 6 strategies for effective learning. Guess what the first one is? NO CRAMMING! Also check out videos from [Academic Resources](http://Academic%20Resources)!



**I care:** I am deeply invested in YOU and your happiness and success. Email me, make an appointment for student office hours, etc. to go over course material, talk about life, or just say hi!

## SCHEDULE

Week	Date	Reading & Lecture Topic	Ch.	Lab
1	1/14 - Wed	Introduction	1-2	NO LAB
	1/16 - Fri	Body plans, reproduction, development, & our own phylum	3-5	
2	1/21 - Wed	Phylum Chordata	37	Lab 1: Hemichordata and Chordata
	1/23 - Fri	Phylum Hemichordata	36	
3	1/28 - Wed	Phylum Echinodermata	36	Lab 2: Echinodermata
	1/30 - Fri	Phylum Echinodermata	35	

Week	Date	Reading & Lecture Topic	Ch.	Lab
4	2/4 - Wed	<b>EXAM 1 (CH 1 – 5)</b>		Lab 3: Mollusca
	2/6 - Fri	The Lophophorates: Phylum Phoronida, Phylum Brachiopoda, & Phylum Bryozoa	21-23	
5	2/11 – Wed	Phylum Mollusca Part 1	24-25	Lab 4: Annelida, Nemertea, Platyhelminthes
	2/13 - Fri	Phylum Mollusca Part 2	19	
6	2/18 - Wed	Phylum Mollusca Part 3	19	Lab 6: Field Trip Noonan's Lake + Study for Lab Exam 1
	2/20 - Fri	Phylum Mollusca Part 3	19	
7	2/25 - Wed	Phylum Annelida	20	<b>LAB EXAM 1</b>
	2/27 - Fri	<b>EXAM 2 (CH 6 – 11)</b>		
8	3/4 - Wed	Phylum Nemertea Phylum Platyhelminthes	23	Lab 6: Arthropoda and Friends 1
	3/6 - Fri	Phylum Nematoda, Phylum Priapulida, Phylum Onychophora, and Phylum Tardigrada	30- 31	
9	3/11 - Wed	Phylum Arthropoda Part 1: Introduction	32- 34	Lab 7: Field Trip – Fairy Creek
	3/13 - Fri	Phylum Arthropoda Part 2: Subphylum Chelicerata	28	
<b>SPRING BREAK 3/15 – 3/23</b>				
10	3/25 - Wed	Phylum Arthropoda: Subphylum Hexapoda (Insects and friends)	27	Lab 8: Hexapods
	3/27 - Fri	Phylum Arthropoda: Subphylum Hexapoda (Insects and friends)	26	

Week	Date	Reading & Lecture Topic	Ch.	Lab
11	4/1 - Wed	<b>EXAM 3 (CH 12 – 16, 18)</b>		Lab 9: Cnidaria, Ctenophora, Porifera
	4/3 - Fri	Phylum Cnidaria: Subphylum Medusozoa	10	
12	4/8 - Wed	Phylum Cnidaria: Subphylum Anthozoa	11	Lab 10: Invert Museum Collection + Study for Lab Exam 2
	4/10 - Fri	Phylum Cnidaria: Hydrozoa, Myxozoa	12-13	
13	4/15 - Wed	Phyla Ctenophora, Placozoa	7,9	<b>LAB EXAM 2</b>
	4/17 - Fri	Phylum Porifera	6,8	
14	4/22 - Wed	<b>EXAM 4 (CH 17, 19 – 21)</b>		