

# Animal Physiology Biology 402 Spring 2022

Instructor: Dr. Douglas Currie

**LAB TIMES:** WED 12:30-4:20pm  
**LAB LOCATION:** Science 303



Office: 231 B Wing of the Science Building,  
Portland Campus.  
Phone: 228-8192

Lab: 194 New Wing of the science building, Portland Campus.  
Phone: 228-8384

Email: [douglas.currie@maine.edu](mailto:douglas.currie@maine.edu)

Webpage: <http://www.usm.maine.edu/bio/douglas-currie>

Campus map:

<http://usm.maine.edu/sites/default/files/about/portland-campus-map.pdf>

**Office Hours:** Thursday 1:15-2:15 or by appointment. At these times I could be in my office or in my lab- talk to me after lecture to check. I will also be available to respond to email questions which you can send to me at the address above. Talk to me or email to make an appointment.

Mon.	Tues.	Wed.	Thurs.	Fri.
	Lecture: 12:30- 1:45	Lab prep	Lecture: 12:30- 1:45	Faculty meeting
	Office hours 1:45-2:15	Lab prep	Office hours 1:45-2:15	Administrative meetings
Research	Lab setup	Lab 12:30-4:20	Research	

**Prerequisites:** You must have successfully completed CHY 115, either PHY 111 or PHY 121, AND (i.e. grade C- or higher), Mat 152, Mat 220, Bio 401 (or concurrent) or have permission of the instructor.

**Text:** Animal Physiology: Hill, Wyse and Anderson. 4<sup>th</sup> Edition

**Additional resources:** There is no lab manual for this class. I will provide materials for each lab. You will need to have a binder to keep these materials and log your data and results. Because the course will also require written assignments, I also recommend "A Short Guide to Writing about Biology", 5<sup>th</sup> Ed., by Jan Pechenik or "A Student Handbook for Writing in Biology", 3<sup>rd</sup> Ed., by Karin Knisely.

**Attendance:** I expect students to attend all labs. The room is used for multiple classes and so I have to clear up the labs to leave space for other instructors. This means that it is not possible to give an alternative time for the labs, and so you cannot make up a lab you have missed. Missed labs will therefore count against your grade. If you miss more than two labs you will receive an F for the course.

## LAB SAFETY POLICIES

1. Be sure and label everything at your work station.
2. Do not pipette anything by mouth in this lab.

3. Do not bring any food or beverages into the lab- leave them outside the lab in the corridor. If you want to take a break and have a soda or a bite to eat, please go out in the hall.
4. If you are not sure about a procedure, ask me!
5. Pay attention to specific instructions given at the beginning of each lab.
6. Keep your work area clean while you work - once you are finished with a piece of glassware, or a pipette, place them in the appropriate containers. Glassware goes in the plastic pan next to the sink- remove any label tape and rinse with tap water, then leave it in the pan. Pipettes go into the pipette soaker which is to the right of the sink- remove any tape, lift the basket so its upper lip is above the container and place the pipette in the basket with its tip up.
7. If you are doing any dissection wear gloves and wash your hands when you are finished.
8. Keep all extraneous material, e.g. coats, books, etc. off of the lab bench.
9. Each of you will be expected to leave their work space, equipment and glassware in a clean and orderly state

### LABORATORY POLICIES:

1. Each of you will be required to have a 3-ring binder in which to place lab handouts and data.
2. When recording data be sure to label everything. If you make a mistake in a procedure, be sure to note the mistake in your notes -- this may allow you to salvage data. **Don't** record data on scraps of paper or in the margin of your lab handout! If you do so then when it comes time to write your report your data will be a bunch of meaningless numbers.
3. There are multiple exercises this semester. Some will require abbreviated lab reports and others will require more in-depth reports.
4. Material is due two weeks after any given lab. Material turned in the next week will be fined a 10% late fee. **No report or data will be accepted more than 3 weeks after that exercise was performed.**
5. Attendance is mandatory in all labs! If for some **good** reason you can't make one, let me know the reason. I will determine the acceptability of the reason.

The letter grades for the class will be awarded using the following scale:

A= Excellent 90-100%

B= Above average 80-89%

C= Satisfactory 70-79%

D= Unsatisfactory 60-69%

F= Failing, below 60%

Plus and minus grades will also be given. Attendance, participation and effort will also be considered with borderline grades.

**A few thoughts about killing animals in this course:** Unlike anatomy courses, physiology requires the use of living tissues and cells, and these must be acquired from freshly killed animals. Animals have been chosen with 2 criteria: the animal must have the appropriate tissue and the "simplest" animals are used wherever possible. One thing to remember is that an animal without a functioning brain is dead even though many of its body parts will continue to function for hours after the animal's brain is gone. You do not have to kill any of the animals, I can do that for you, but someone in each lab group will have to do the dissection.

The objectives of this laboratory:

- Introducing you to a variety of methods used in physiological research.
- Continued use of basic laboratory skills including observation, data collection, and data analysis.

- Development of an understanding of the process of hypothesis formulation and testing.
- Reinforcing basic biological reporting skills
- Applying and clarifying principles discussed in lectures
- Development of a better sense of how scientists conduct their research to make discoveries and how discoveries in different organisms can benefit the medical field.

**Academic integrity:** Academic dishonesty, including plagiarism, is counter to the purpose of the university. It will not be tolerated in this course. Students may also be subject to institutional penalties for such behavior.

**Students with disabilities:** The University has a very good Disabilities Service Center located at 242 Luther Bonney Hall. Students with any form of disability are encouraged to contact that office which offers multiple forms of assistance and can arrange course accommodations. Students with disabilities must bring a letter from the Disabilities Service Center to me at the beginning of the semester so that they can be given appropriate accommodations.

DSC Office. Rm 242 Luther Bonney, Voice Phone 780-4706, email: [dsc@usm.maine.edu](mailto:dsc@usm.maine.edu) web site: <http://usm.maine.edu/dsc>

### **Schedule Bio 402 Physiology Spring 2022**

This is a tentative schedule and may be adjusted by the instructor if necessary

Jan 26	Introduction and overview
Feb 2	Diving reflex lab
Feb 9	Environmental Physiology
Feb 16	Environmental Physiology
Feb 23	Osmosis and tonicity lab
Mar 2	Proteolytic enzyme activity
Mar 9	Electrophysiology resting potentials
Mar 16	Spring Break
Mar 23	Electrophysiology of disease
Mar 30	Smooth muscle physiology
Apr 6	Cell culture part 1
Apr 13	Cell culture, metabolism and immunohistochemistry
Apr 20	Earthworm extracellular recording
Apr 27	Sensory systems and behavior + Animal presentations
May 9	<b><u>Finals Week No lab</u></b>