

BIO 350 Laboratory – 1 Credit Course

Fall 2023

Dr. Jennifer Larimore

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### Course Overview:

This laboratory is designed as inquiry-based. Therefore, students will design their experiment, carry out that experiment, analyze the data, and communicate their findings through a lab report and an oral presentation.

Students will be broken into small teams, similar to teams that are part of research labs. The first few lab classes will function to introduce our model species, the crayfish and the techniques that are available. Each group will be responsible for identifying a hypothesis that can be tested with the techniques and materials that will be used. To do this, an examination of primary literature will be necessary, so please bring a tablet or laptop to class or share with a friend throughout the duration of the course.

**Required Text:** <https://www.amazon.com/Handbook-Biological-Investigation-7th/dp/0887253318>

[Links to an external site.](#)

### Ethical Treatment of Animals:

As a scientist, you are to respect the organism that you are studying. It is important that the crayfish are never left without food, or enrichment and that their environmental conditions are adequate. Students will be assigned a schedule for the care and maintenance of the animals. This includes making sure they have sufficient food, removing waste or dead animals, and turning off the lights. These factors are important as alterations can impact the quality of data generated. Failure to do so will result in an automatic 0 in the laboratory section of the course.

### Lab Notebook:

A lab notebook is a legal and official record of all things that occur in your experiment and in your workings in the lab. A lab notebook is a composition notebook with numbered pages, in which for each experimental or lab day the methods used, the observations made, and the results obtained are recorded in consecutive order. All

handwritten text should be in blue or black ink and legible. If you make a mistake that's okay, simply put one line through the text and place your initials next to this omission (you should still be able to read the crossed-out text). Text is often supplemented by properly labeled diagrams, graphs, or pictures of the obtained results. If these items are printouts make sure they are attached securely to your notebook and contain references as to where to obtain and view the original file. In a research setting your lab notebook is property of the lab and likely will be used by future scientists, who may want to replicate what you have done. In this course we will randomly collect and grade your lab notebook, so ensure that your notebook is up to date, legible, and provides a clear picture of your lab activities.

### Course Project:

When a scientist writes up their results to publish in a journal, they have to follow that journal's style of manuscripts. We will practice that in this class. Your paper must follow the specifications for submission to Journal of Neuroscience for each section and for the references. Focus on the section labeled: Preparing a manuscript submission for review:

<http://www.jneurosci.org/content/preparing-manuscript#organization>

[Links to an external site.](#)

### Lab Grading Breakdown\*-

10 points - Attendance/in-group work/notebook checks

35 points - Pre-labs (7 pre-labs = 5 points each)

20 points - Poster presentation (graded individually)

30 points - Final paper (graded as a group)

5 points - Paper outline (graded as a group)

P/F - Draft of paper

----- 100 points total

\* this can be modified by professors as needed

### Course Summary:

Date	Details	Due
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Mon Sep 11, 2023	Assignment <a href="#">Lab #1 in Lab assignment</a>	due by 11:59pm
Wed Sep 13, 2023	Assignment <a href="#">TURN in Pre-lab 1 HERE</a>	due by 2pm
Mon Sep 18, 2023	Assignment <a href="#">TURN in Pre-lab 2 HERE</a>	due by 2pm
	Assignment <a href="#">TURN in Pre-lab 3 HERE</a>	due by 2pm
	Assignment <a href="#">Lab #2 in Lab assignment</a>	due by 11:59pm
	Assignment <a href="#">Lab #3 in Lab assignment</a>	due by 11:59pm
Mon Sep 25, 2023	Assignment <a href="#">Lab #4 in Lab assignment</a>	due by 11:59pm
Mon Oct 2, 2023	Assignment <a href="#">TURN in Pre-lab 4 HERE</a>	due by 2pm
	Assignment <a href="#">TURN in Pre-lab 5 HERE</a>	due by 2pm
	Assignment <a href="#">Lab #5 in Lab assignment</a>	due by 11:59pm

Mon Oct 16, 2023	Assignment <a href="#">TURN in Pre-lab 6 HERE</a>	due by 2pm
	Assignment <a href="#">Lab #6 in Lab assignment</a>	due by 11:59pm
Mon Oct 23, 2023	Assignment <a href="#">TURN in Pre-lab 7 HERE</a>	due by 2pm
	Assignment <a href="#">Lab #7 in Lab assignment</a>	due by 11:59pm
Wed Oct 25, 2023	Assignment <a href="#">Paper Outline</a>	due by 2pm
Mon Oct 30, 2023	Assignment <a href="#">Lab #8 in Lab assignment</a>	due by 11:59pm
Mon Nov 6, 2023	Assignment <a href="#">Lab #9 in Lab assignment</a>	due by 11:59pm
Wed Nov 8, 2023	Assignment <a href="#">Paper Draft</a>	due by 2pm
Mon Nov 27, 2023	Assignment <a href="#">Lab #10 in Lab assignment</a>	due by 11:59pm
Wed Nov 29, 2023	Assignment <a href="#">Final Paper</a>	due by 2pm

WED NOV 29, 2023

Assignment  
[Final Poster](#)

due by 2pm