

ORGANISMAL BIOLOGY LABORATORY (BIOL 1108) – SPRING 2020

Instructional Team: Jeffrey T. Olimpo, Ph.D.*; Thomas M. McCabe, Ph.D.; and Ms. Julie Schlichte

Office: B226, Biology Building (Mon., 2:00pm – 3:00pm; Tues., 11:00am – 12:00pm)*

E-mail: jtolimpo@utep.edu; tmmccabe@utep.edu; jmschlichte@miners.utep.edu

*These are hours when I am **guaranteed** to be in my office. If these times do not work for you, please send me an e-mail, and we can arrange another time to meet. I am here to help! ☺

COURSE DESCRIPTION

Welcome to a study of life! This course offers students a unique opportunity to explore the relationship between abiotic/biotic factors and lifecycle outcomes in the marine copepod, *Tigriopus californicus*, through an intensive, self-driven research experience. As opposed to traditional laboratory coursework, this means that *you* will be determining your own research questions, methods to use, types of experiments to perform, and “next steps” in the research process based on obtained conclusions. We (as your instructors) seek to promote an environment where (reasonable) risk is rewarded, overcoming failure is part of true scientific inquiry, and the contributions *you* make to science are invaluable.

COURSE OBJECTIVES

This course is designed to provide students with an authentic research opportunity in the biological sciences. Upon completion of the course, students will be able to:

- Apply scientific process skills to make informed decisions throughout all aspects of the experimental process, from development of a research question to dissemination of outcomes associated with the project
- Demonstrate an increased understanding of quantitative and/or qualitative research methods, as evidenced in written and oral deliverables
- Make meaningful empirical connections between scientific concepts and outcomes
- Describe, succinctly, the results of their research to both lay and scientific audiences

COURSE MATERIALS

1. Laboratory notebook (a *non*-spiral bound composition book will suffice)
2. Pens, calculator, etc.
3. Personal Protective Equipment (PPE) needed: laboratory coat

ACADEMIC INTEGRITY

As members of a scholarly community dedicated to healthy intellectual development, students and faculty are expected to share the responsibility of maintaining high standards of honesty and integrity in their academic work. All material for this course must be your work and no one else's. **Cheating or plagiarism in any form will not be tolerated.** This includes, but is not limited to, copying someone else's work on an assignment. Please note that all suspected instances of plagiarism or academic dishonesty will be referred to the Dean of Students Office, in accordance with UTEP policies and procedures.

The honor code also states that all members of the UTEP community are entrusted with the responsibility to uphold and promote five fundamental values: Honesty, Trust, Respect, Fairness, and Responsibility. These core elements foster an atmosphere, inside and outside of the classroom, which serves as a foundation and guides the UTEP community's academic, professional, and personal growth. Endorsement of these core elements by students, faculty, staff, administration, and trustees strengthens the integrity and value of our academic climate.

COMMUNICATIONS

When you e-mail me, please include a proper subject, any message you are responding to, the course name and CRN, as well as your name. Please use your UTEP account to ensure the e-mail is not blocked by the university's spam filter. If you e-mail directly from the Blackboard course, essential information like the course name and section will automatically be included. I will do my best to respond to your e-mail within 24-48 hours. If you do not receive a response within this timeframe, I ask that you please re-send your e-mail. Please be sure to regularly check the e-mail account listed for you in Blackboard, as this is where all course correspondence will be sent.

CENTER FOR ACCOMMODATIONS AND SUPPORT SERVICES

Students requesting accommodations in this course must be registered with the Center for Accommodations and Support Services (CASS) Office in Room 106 of the Union East Bldg. You may contact them at (915) 747-5148 or cass@utep.edu for more information. Once you are registered with the CASS Office, please notify me as soon as possible so that we may meet to discuss appropriate accommodations, as recommended by CASS.

TECHNICAL SUPPORT

Please let us know if you experience any issues/concerns related to the use of the computers in the lab, and we will do our best to resolve those issues/concerns ASAP. Please also note that the IT Support Team can assist with Blackboard, password resets, and student e-mail accounts. Hours and other helpful information can be found at <http://www.helpdesk.utep.edu>.

COURSE GRADING & EXPECTATIONS

COURSE GRADING:

- Participation/Attendance 100 pts.
- Quizzes (5 @ 10 pts./ea.) 50 pts.
- Homework Assignments (5 @ 10 pts./ea.) 50 pts.
- Research Question 10 pts.
- Preliminary Project Outline 25 pts.
- Equipment Request Form 15 pts.
- Lightning Talk 50 pts.
- Final Project Outline 50 pts.
- Laboratory Notebook 50 pts.
- Preliminary Presentation Draft 25 pts.
- Final Presentation 75 pts.

A = 450 - 500 pts.	D = 300 - 349 pts.
B = 400 - 449 pts.	F = < 300 pts.
C = 350 - 399 pts.	

PARTICIPATION/ATTENDANCE

Your attendance is **required** for all laboratories, unless otherwise noted. Class will begin promptly at **9:30am** and will run no later than **11:20am**. If, for whatever reason, you cannot make it to class on time, please do your best to enter quietly when you do arrive. Please note that two unexcused absences will result in a 25% reduction in your participation/attendance grade, whereas three unexcused absences will result in a 50% reduction. More than three unexcused absences will result in an automatic grade of "F" in the course!

LABORATORY CONDUCT

Please make every effort to be courteous to your fellow students and your instructors. Policies regarding responsible conduct of research and ethics are expected to be adhered to and are essential not only in a "local" sense but in a broader, professional sense as well. Transparency and open lines of communication in the laboratory are critical. Therefore, please report all laboratory accidents, suspected instances of research misconduct, etc. to the instructional team ASAP.

BLACKBOARD

This course makes extensive use of Blackboard® (<https://adminapps.utep.edu/blackboardlearn>). You will use Blackboard to download laboratory exercises, submit assignments, download or print

additional course materials, and check your grades. Please note that your login and password are the same as you would use to access your UTEP e-mail account.

QUIZZES

You will complete several structured laboratory exercises at the start of the semester, the purpose of which is to familiarize yourself with standard procedures that will be employed in the course. Often, these exercises will be accompanied by a quiz. Quizzes will be administered at the start of class (first 10 – 15 min.) and will cover material from both the *previous* and *current* weeks' laboratory exercises. For instance, the first quiz will cover material from both the scientific process laboratory exercise (lab #1) and the primary literature laboratory exercise (lab #2). No late quizzes will be accepted, so please be sure to arrive to class on time!

HOMEWORK ASSIGNMENTS

In an effort to provide you with the necessary training and skills required for successful completion of your independent research projects, a series of five (5) structured homework assignments will be administered this semester. These assignments correspond to the series of confirmatory laboratory exercises that occur at the start of the semester. All completed homework assignments are due at the beginning of the following class (see laboratory schedule).

RESEARCH QUESTION AND EQUIPMENT REQUEST FORM

Scientific endeavors often begin with the formation of a research question and associated hypotheses. As a team, you will first discuss which independent and dependent variables you are interested in examining, as related to the model system, *T. californicus*. You will then submit the idea to us (your instructors) for review, and we will help mentor you through the process of executing your independent research projects. To facilitate this process, we will also ask your team to submit an equipment request form. This will ensure that we are able to provide all supplies and materials needed for you to effectively and efficiently perform your experiments.

PRELIMINARY AND FINAL PROJECT OUTLINES

The preliminary project report provides an avenue for your team to construct an initial draft of your research plan. It should include your team name, research question(s), hypothesis(es), methods, and references from the primary literature. We will provide you with feedback on this report one week after it is due. The final project outline is an edited and completed version of the preliminary draft. Further details regarding these assignments will be discussed in class.

LIGHTNING TALK

While the project reports are submitted only to us (your instructors), the lightning talk will provide your team with an opportunity to share your research plan with the class. Further details

regarding expectations and grading criteria for this assignment will be discussed early in the semester.

LABORATORY NOTEBOOK

You will work as a three- to -four-member team on all exercises and investigations. **However, you will each keep your own laboratory notebook.** Maintaining a detailed laboratory notebook is critical, as the notebook serves as a record of all experiments, analyses, etc. that were performed as part of your independent research projects. In addition, *anyone* should be able to pick up your laboratory notebook and repeat your experiments, so thoroughness and honesty are key. Further information regarding the notebook, the structure of entries, and grading criteria for this assignment will be discussed as we approach the first notebook check.

PRELIMINARY AND FINAL PRESENTATION DRAFTS

At the end of the semester, your team will give a professional presentation that describes the scope, outcomes, and impacts of your independent research project. Further details regarding expectations and grading criteria for these assignments will be discussed mid-semester.

LABORATORY SCHEDULE

DATE	LABORATORY EXERCISE	DELIVERABLE (IN-CLASS)	ASSIGNMENT(S) DUE
1/24	Exploration Exercise	Research Question	-
1/31	Lab #1 (Science Process)	Preliminary Project Outline	-
2/7	Lab #2 (Primary Literature)	Equipment Request Form	Quiz #1; HW #1
2/14	Lab #3 (Microscopy)	Lightning Talk (LT)	Quiz #2; LT
2/21	Lab #4 (Dilutions)	Final Project Outline	Quiz #3; HW #2
2/28	Mock Experiment	Notebook Check #1	Quiz #4; HW #3
3/6	Lab #6 / Research Projects	-	HW #4 (Data Sheet)
3/13	Lab #6 – Part II (Statistics)	Notebook Check #2	Quiz #5; HW #5
3/20	NO CLASS	-	-
3/27	NO CLASS	-	-
4/3	Research Projects	Notebook Check #3	-
4/10		-	-
4/17		-	-
4/24		Notebook Check #4	-
5/1		-	Preliminary Present.
5/8	Final Presentations	Final Presentations	Final Presentation

** Please note that the course drop date is **March 27th**. **

*** Disclaimer: We reserve the right to change the contents of this syllabus due to unforeseen circumstances. Students will be given notice of relevant changes through Blackboard and e-mail. ***