BZ111 Biology of Animals Lab Syllabus (Spring 2024)

General Course Information

Laboratory Objectives

During the course of the semester, BZ 111 students will:

1. Select or Develop a Design Process
- Select or develop elements of the methodology or theoretical framework to solve problems in a given discipline.

2. Analyze and Interpret Evidence
- Examine evidence to identify patterns, differences, similarities, limitations, and/or implications related to the focus.
- Utilize multiple representations to interpret the data.

3. Draw Conclusions
- State a conclusion based on findings.

4. Interpret Information
- Explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words).

5. Represent Information
- Convert information into and between various mathematical forms (e.g., equations, graphs, diagrams, tables, words).

6. **Properly apply the scientific method** to investigate scientific questions, and to communicate their results to others;
7. **Demonstrate the proper and safe use of basic biological/scientific equipment** (e.g., microscopes, dissection tools, etc.)
8. **Demonstrate knowledge of fundamental biological concepts and processes**;
9. **Demonstrate (with hands-on lab experience) knowledge of major animal phyla**, including the structure & function of organ systems in both invertebrates and vertebrates

CSU Principles of Community

The principles of community support the CSU mission and vision of access, research, teaching, service, and engagement. A collaborative and vibrant community is a foundation for learning, critical inquiry, and discovery. Therefore, each member of the CSU community has a responsibility to uphold these principles when engaging with one another and acting on behalf of the university.

INCLUSION	We create and nurture environments and welcome, value and affirm all members of our community, including their various identities, skills, ideas, talents, and contributions.
INTEGRITY	We are accountable for our actions and will act ethically and honestly in all our interactions.
RESPECT	We honor the inherent dignity of all people within an environment where we are committed to freedom of expression, critical discourse, and the advancement of knowledge.
SERVICE	We are responsible, individually, and collectively, to give of our time, talents, and resources to promote the well-being of each other and the development of our local, regional, and global communities.
SOCIAL JUSTICE	We have the right to be treated and the responsibility to treat others with fairness and equity, the duty to challenge prejudice, and to uphold the laws, policies and procedures that promote justice in all respects.

Lab Manual: The text, ***Biology of Animals – BZ111 Lab Manual*** **(4th edition)**, by Alpana Damle, Top Hat Publishing, is **required**. The lab manual is available at the CSU Bookstore and Ram's Bookstore. This course is designed with the goal of helping you gain a deeper and clearer understanding of some major animal biology concepts. Performing the lab exercises in this manual will involve making observations and collecting data, which must be analyzed and interpreted. In addition, the results must be communicated. Writing and graphing your results in an understandable and concise manner facilitates clear communication. We encourage student comments and input to improve the lab exercises in future iterations of the lab manual.

Laboratory attendance: Attendance at the lab is **mandatory**. Come to the lab prepared to do the work and stay focused on the job. While you will work in groups, each group member must be familiar with all aspects of lab exercises. This will ensure your lab runs smoothly, and also may help you get a better grade in the course.
If you cannot attend your assigned lab section (for a legitimate reason, such as a University Sanctioned Activity or a doctor's appointment) during a given week, you may arrange to attend another lab section (to avoid receiving a "0" for that week's lab). To do this, you must ask permission of **both** your regular lab instructor and the instructor of the lab section you wish to attend. Lab times and contact information for all the TAs are available on your lab Canvas under 'Course Content' and the icon labeled "BZ111 TA contact info." Please do not abuse this privilege – this may be used for emergencies only. Be aware that a lab TA can require students to leave lab if they appear extremely ill and pose an issue of spread of a contagious disease. There will be **no make-up labs, quizzes, or practicals**. We understand that students may sometimes be unable to attend lab for reasons outside their control, including an illness—for this reason we will drop your two lowest lab quiz grades (meaning you can miss two labs without penalty). These dropped lab grades should be reserved for **emergencies only** as we do not allow excused absences for any reason (with the exception of absences excused via official letter from the Student Disability Center /Student Case Management or for University Sanctioned Activities). **If you have more than 2 unexcused absences, you will automatically receive a zero for this class.**

Note: BZ111 is a separate course from BZ110, for which you will receive an independent grade.

Safety instructions: A lab environment must be safe and productive. Many of the lab exercises in the manual involve the use of materials or procedures that can be hazardous to you and others in the lab if not handled or performed correctly. Any behavior that distracts you, your lab group members, or others in the lab could result in possible harm. Knowing where lab safety equipment is and how to use it can be critical to efficiently responding to a lab accident. Your lab TA is responsible for the safe and effective operation of the lab. ALL students will be required to purchase a pair of safety goggles and bring them to lab during the week that animal dissections will take place. Safety goggles are a piece of personal protective equipment (PPE) used to protect the eyes from chemicals flying objects, and airborne particles. Safety goggles can be purchased at the bookstore, Chemistry Stockroom, or at a hardware store.
If you have any conditions or special needs that put you at a greater risk of injury in the lab, notify your lab TA before the lab begins. Wearing appropriate clothing (long pants, close-toed shoes) is an important protection prep for the lab. Long hair should be tied back during animal dissections to keep it out of your face. The First Aid kit located in the TA bench can be used to treat minor cuts and abrasions. Always wash your hands prior to and immediately after finishing the lab. Ther is also an AED (automatic external defibrillator) located outside the lecture classroom (room 104) on the first floor of the Yates Building, which can be used in emergencies. The equipment guides users through the steps while it is being used – no prior

Students MUST do the following tasks at the end of each lab period:

1. All used blank slides washed, **dried**, and returned to the appropriate box
2. All prepared slides returned to the correct slide box straight, labels facing forward
3. Your bench top (work area) wiped down with paper towel and cleaning solution and materials in the work area organized.
4. All dissecting equipment washed, **dried**, and returned to the appropriate location
5. Report any broken glass or chemical spills to your lab TA immediately.
6. Any trash you generate must be disposed of properly (in the trash receptacle or 'Sharps' container provided.)
7. Do Not perform any unauthorized experiments.

NO FOOD OR DRINK IS ALLOWED IN THE LABORATORY! Cell phones and other electronic devices must be in silent mode, and stored away during lab time (unless cell phones/cameras are being used as part of a laboratory activity)

Grading Policy

Your laboratory grade will be based on 11 weekly quizzes, 3 practicals, lab report submissions, and attitude and participation in lab. The point break-down will be as follows:

Weekly quizzes……..9 (highest of 11) @ 15 pts each	**= 135 pts**
Practicals……...3 @ 25 pts each	**= 75 pts**
Lab Reports……1 @ (7+13) pts	**= 20 pts**
1 @ 50 pts	**= 50 pts**
Attitude and Participation……	**= 20 pts**
Total possible points:	**300 pts**

The **quizzes** (worth **15 pts** each) will include questions relevant to the material you covered the previous week (12 pts.), plus material you will be covering in the current week's lab (3 pts.). **Therefore, you should read and become familiar with the introductory material and laboratory exercises each week before coming to class**. *If you are late to class and miss the quiz, you will not be permitted to take it late or make it up at another time.* You may drop your 2 lowest lab quiz scores (excluding the lab practical). **Note**: Your quiz or practical **will not be graded** if you do not **complete all of the lab exercises including filling in your lab manual** and/or **cleaning up your work area** at the end of the laboratory period. For quizzes, practicals, and lab reports, you have ONE week after they are handed back to discuss your grade for points back. Once that week has passed, the grade will be frozen in the grade book. **There will be no extra credit given on this course.**

Your lab reports must be submitted on canvas by the due dates specified in the lab syllabus. Students that need accommodation must provide documentation from the Student Disability Center or Student Case Management. If unavoidable situations prevent timely completion and submission of a lab report, the report will be accepted after the due date with a 10% late penalty automatically assessed for each day that the report is turned in late. No exceptions to this rule will be made by your lab TA.

While your lab TA will be able to guide you through the discovery process, ultimately, what you get out of it will largely be a function of what you put into it. To be successful in lab, read the lab exercise ahead of time. If you are struggling in the lab, it is strongly advised to attend your TA's office hours or set up another appointment if those times do not work for you. If you do not understand something, get help as soon as possible.

Academic dishonesty of any kind will not be tolerated and must be reported to student judicial affairs. We adhere to the CSU policies on academic integrity and classroom behavior which can be found in the CSU General Catalog for 2023-2024 at http://catalog.colostate.edu/general-catalog/policies/students-responsibilities/#academic-integrity

*** If you have any general questions or concerns regarding the BZ111 Laboratory, you may contact the Laboratory Coordinator for BZ labs:** Dr. Alpana Damle (apdamle@colostate.edu) (Room 204 Yates Building; 970-491-4061). Please include your course name, section number, and lab instructor's name in any emails or phone calls.

Need Help?

CSU is a community that cares for you. If you are struggling with drugs or alcohol and/or experiencing depression, anxiety, overwhelming stress, or thoughts of hurting yourself or others please know there is help available. Counseling Services has trained professionals who can help. Contact 970-491-6053 or go to

http://health.colostate.edu. If you are concerned about a friend or peer, tell someone by calling 970-491-1350 to discuss your concerns with a professional who can discreetly connect the distressed individual with the proper resources (http://safety.colostate.edu/tell-someone.aspx). Rams take care of Rams. Reach out and ask for help if you or someone you know is having a difficult time.

Laboratory Schedule for BZ111, Biology of Animals, Spring 2024

Week # / Date	Topic	Exercise in Lab Manual
1. 1/16-1/18	**NO LABS - Read Lab Syllabus posted on Canvas**	
2. 1/23-1/25	Scientific Method and Experimental Design	Ex. 1
3. 1/30-2/1	**Quiz 1** Human Cardiopulmonary Physiology	Ex. 2
4. 2/6-2/8	**Quiz 2 & Lab Report Pt.1 (Title, Intro, Materials/Methods with citations) due to Turnitin** Mitosis and Meiosis	E x. 3
5. 2/13-2/15	**Quiz 3** Mendelian Genetics	Ex. 4
6. 2/20-2/22	**Quiz 4** Population Genetics	Ex. 5
7. 2/27-2/29	**Practical 1 – In Class** Use of the Microscope: Cells and Protists	Ex. 6
8. 3/5-3/7	**Quiz 5 & Lab Report Pt. 2 due (Results and Discussion with citations) due to Turnitin** Porifera and Cnidaria	Ex. 7
9. 3/12-3/14	**NO LABS – Spring Break**	
10. 3/19-3/21	**Quiz 6** Platyhelminthes, Nematoda, Annelida	Ex. 8
11. 3/26-3/28	**Quiz 7** Mollusca	Ex. 9
12. 4/2-4/4	**Quiz 8 & Final/Revised Lab Report due** Arthropoda	Ex. 10
13. 4/9-4/11	**Practical 2 – In Class** Echinodermata	Ex. 11
14. 4/16-4/18	**Quiz 9** Chordata	Ex. 12
15. 4/23-4/25	**Quiz 10** Vertebrate Behavior and Diversity	Ex. 13
16. 5/2-5/4	**Quiz 11** Fetal Pig Dissection **Practical 3 - Online**	Ex. 14