

**PRINCIPLES OF BIOLOGY BI 212**

**COURSE:** BI 212 – 4 credits                      **INSTRUCTOR:** Stacey Kiser  
**OFFICE HOURS:** M-Th 12:30-1:30p,                      **OFFICE LOCATION:** SCI 162H  
F 9:00-10:00a  
Or by appointment                                      **PHONE:** 463-5047  
**E-MAIL:** kisers@lanecc.edu

**CLASS HOURS:** UH 8:00-11:00a and 2:00-5:00p

**CLASS LOCATION:** SCI 115                      **CLASS WEB SITE:** <http://teach.lanecc.edu/kisers>

**REQUIRED TEXTS:** *Biology*, Campbell and Reece, 7<sup>th</sup> ed.  
*Lab Activity Packet*, Kiser (available on-line or in class)

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**COURSE GOALS:**

1. Provide a foundation for future life science courses at Lane.  
This course is a foundation course for future Life Science courses. This term will focus on comparative physiology. We will compare animal and plant examples to look at the maintenance of life and the variation in the solutions to common physiological problems. You may go on to study physiology in more depth in upper division life science courses. I want to give you a good foundation for your future studies.
2. Prepare you to complete a four-year life science degree.  
I am preparing you to successfully transfer to a four year school and complete a degree in a life science-related major. You will need to improve your skills in scientific experimentation and scientific reading comprehension. Many of your future classes in life sciences will rely heavily on the skills you learn in this course.
3. Improve your critical thinking, reading, and writing skills.  
You will face decisions that will require you to understand biology. We will practice skills in this class that involve reading, gathering information, designing experiments, interpreting data and persuading ourselves and others about the results.



## **COURSE OBJECTIVES:**

### CONTENT:

1. An understanding of physiological concepts and processes as related to homeostasis.
2. A comparative understanding of plant and animal physiology.
3. An understanding of the comparisons among organisms and their solutions to various homeostasis problems.
4. An understanding of the diversity of animal and plant organisms.
5. A basic understanding of developmental patterns in plants and animals.

### PROCESS:

1. **Problem Posing:** All scientists learn how to ask a good question that can be answered with a rigorous process. We will learn how to identify questions that other scientists ask, and how to ask good questions to answer ourselves.
2. **Problem Solving:** After asking a good question, scientists set out to find an answer. We will practice identifying the steps scientists take in answering a question and practice writing and completing these steps to answer our own questions.
3. **Persuasion:** Asking and answering questions are no good unless you can clearly communicate what you learned with those in your peer group. We will practice by reading good persuasion, outlining it, and then practice on our peers by persuading them about our answers to questions we pose and answer in class.

## **TEACHING STYLE:**

*Why not as many lectures?* I worked as a research assistant for nearly three years on a biology education project at the University of Oregon. I learned that delivering a lot of material in a short amount of time in a lecture does not help most students really learn the material. My teaching style de-emphasizes lectures and emphasizes students working with the material instead. On most days we will be doing some sort of lab with lectures as requested or needed during the lab. I wait until students have significant questions about the material then I lecture to those specific questions. I assign a lot of group work, both in and out of class. I do lecture some, but not usually at the beginning of a unit.

*What do I expect you to do during lectures and discussions?* Listen respectfully to what I and others have to say. Take notes for future studying. Write in your book on the diagram that I am using up front. I also use a lot of discussions in my classes. Therefore I want everyone to remember to respect each other. The discussions will be a lot more honest and open. **Participate! Ask questions!**

*Why do you grade so hard?* I want you to know the material inside and out, upside down, backwards, etc. I challenge you with difficult questions and expect you to provide me with correct, logical support so I can see if you really know the material. Feel free to come tell me in a few years why I graded you too hard.

*Why do I make you write, and why do I grade your writing ability in a biology class?* See the “Persuasion” part above. Scientists are like any other professional. They need to tell others what they have done and persuade them with their evidence. Writing is one form of communicating what you know. You will need to write a lot in your future classes, so I am helping you improve your writing now.

*Why aren't you simply telling me the answers?* This teaching style places more of the responsibility of learning on you. You will not be successful in this class if you simply come, take notes, and never ask questions. My experience is that you will remember the answers better if you think of them yourself. Come see me if you think you need some pointers on how to study for a 200 level science course.

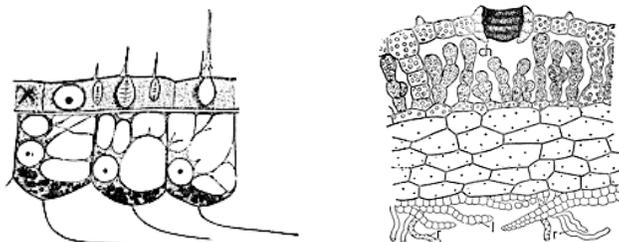
**GRADING:** You will decide for yourself how much the activities will count towards your final grade. See the **Grade Agreement** for details. You need to fill out this contract by the end of the second class meeting and will have the opportunity to negotiate after you get your graded midterm back. There will be **no** negotiation at the end of the term.

Everyone in class starts with a C grade. What you do in class determines your final grade. To keep the C, you have to complete all the work required in this course. To earn a B you will have to do well on that work. To earn an A you will have to demonstrate to me that you fully understand the material and have thought about your assignments. If you do not complete the assigned work and/or put in a lackluster performance your grade will reflect that (D or F).

**Final grades** will be decided by the percentage of the total points you receive on all the activities of your choice during the term. Grades will be decided on the traditional scale. Plus and minus grades are assigned to the top 3% and bottom 3% of each grade range.

Percentages:	100	90	80	70	60
Grades:	A	B	C	D	F

**I** (Incomplete) grades are used when a student has completed 75% of the major work required with the intent to complete the remainder of the work. It does not imply the student may repeat any part of this course without paying tuition. An incomplete grade requires a student-initiated contract, signed by the instructor and the department chair. If the remaining work has not been completed within one year, the I cannot be changed without the signature of a vice president.

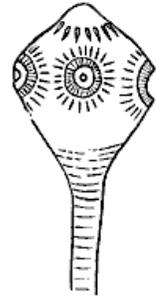


**DUE DATES:** Deadlines given in class are firm. Reasonable consideration will be given if you contact me **prior to the due date** when you know that you cannot turn in the work. **Late work will be docked 10% for every class day that it is late.**

**MISSED TESTS:** **No quizzes can be made up unless you contact the instructor before the time the exam is given in class that day.** Call the number at the top of the syllabus or send me an e-mail message to request that I leave a make-up test in the Science Resource Room (SCI 193). It is your responsibility to take the quiz before the next quiz/exam is given in class. **Midterm and Final cannot be made up, so make sure to be in class.**

**MISSED POINTS ON QUIZZES:** You will have the opportunity to re-answer quiz questions (but not midterm or final questions) for a portion of the points you lost on each question. The amount of points you can earn back depends upon the amount of thought and assessment you put into re-answering the question. You can earn up to 50% of the missed points by discussing the questions with me and re-answering the question in writing. If you do not talk with me about your re-answer or do not correctly re-answer the question you will receive less than 50% of the missed points.

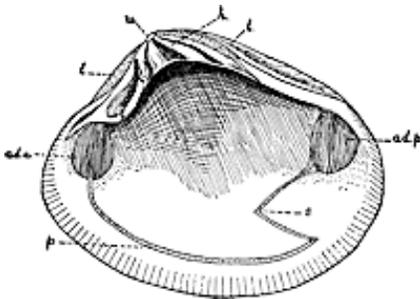
**ATTENDANCE AND REGISTRATION:** As a student you are responsible for your course registration. **LCC policy: If you are not registered by the 8<sup>th</sup> week of class, you will have to pay \$100 to register.** If you miss any of the first week of class you will be automatically dropped from the course. **Call me if your absence is a one-time problem and you want to remain in the course.** I will not grade any work from students who are not registered at the end of the first two weeks. If you stop coming to class but do not officially drop, you will receive an **NC (No Credit)** at the end of the term.



Portfolio work and test material will be covered every day in class. This amounts to a large portion of your grade. For that reason students find it hard to earn anything above a B- if they miss more than two days during the term. **It is your responsibility to find out about and make up work missed in class.** Please check with your lab partners before coming to talk to me about making up lab time.

The most important thing you can do if you are worried about your grade is **come to class!!**

**WORK OUTSIDE OF CLASS:** As a college student you are expected to put in time outside of class. This means you should do the readings and finish up questions before you walk into class. You may also need to do research and computer work on your own time. I will assume that everyone is ready to go and will start the class appropriately. So be ready to catch up!



**HELP OUTSIDE OF CLASS:** There are many opportunities for you to get help outside of class time. I hold regular office hours. If you cannot make these hours, make an appointment with me. The Science Resource Room offers tutors who have successfully taken the class, earned an A, and are selected for their ability to work with their peers. Stop by and check out the Zoology tutor hours for help. Additionally, you may find that regular meetings with your lab group or others in the class help you stay on top of the material. There is plenty of space in the Science Resource Room for these types of study sessions as well.

**RESPECTFUL CLASSROOM ATOMOSPHERE:**

I expect you to treat me, your peers, and yourself with respect. If you have a problem or witness a disrespectful act in class, including things I do and say, please let me know. You may even leave an anonymous note in my mailbox in the Science Office.

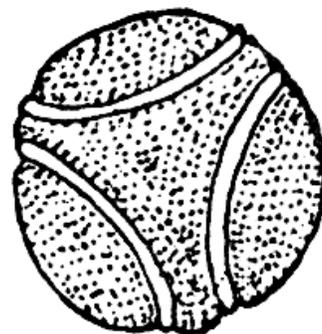
**ELECTRONIC DEVICES (INCLUDING CELL PHONES):**

I will answer any ringing cell phone in class. Please turn off your phone when you enter the class. If you need to have it on to receive an emergency call, please turn in to silent and keep it nearby so you can see when it rings. Take any calls outside of the classroom. **Above all else, make sure to turn off your cell phone before all quizzes and exams.**

**Texting:** Do it on breaks. I will not hesitate to ask you to stop texting. It is distracting to me and other students if it occurs during class sessions. Are you listening to my lecture or your group mates if you are texting? **All phones should be put away during tests!**

**SAFETY:**

Many reagents are extremely caustic and corrosive and are to be handled with care. Be alert for chipped or cracked glassware as it can inflict serious cuts. An emergency eyewash station is located at one of the sinks in the room. An emergency shower and fire blanket is located in the biology stockroom. Shut-off valves for the gas are located in the back of the room near the light switches. No smoking or eating is permitted in the classroom or the Science buildings. Shoes are required.



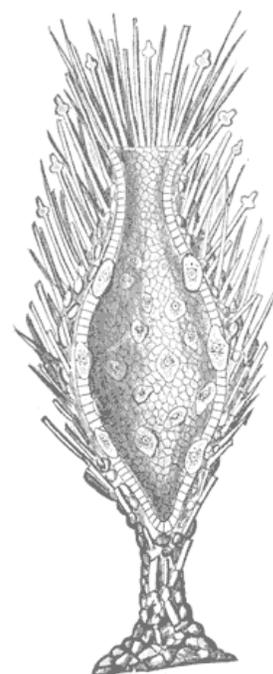
**EATING/DRINKING POLICY:**

This is a biology lab that gets used by several classes every week. Many dissect organisms on these tables. **Do no eat food in this lab!!** Eating is okay in the hallway, but not in the classroom. Drinks are okay as long as they are in containers with lids, preferably recyclable containers.

**ACADEMIC INTEGRITY:**

LCC promotes an academically fair atmosphere. I also uphold these standards in my classes. See “Student Code of Conduct” in the college catalog (pp. 65-68). This describes academic honesty and expected student conduct as well as actions I or the college will take if you do not follow these policies.

**READINGS:** Notice on the course schedule I have given you broad chapters to read. I will give you preview and review pages to read every day in class. We will be reading from two different textbooks this term, so make sure you carefully note the readings. Make sure you read the material before coming to class. From student comments, it is best if you read the material before coming to class.

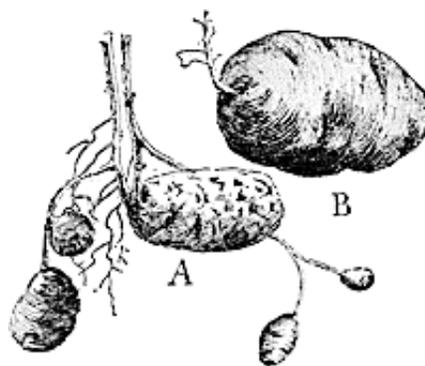


**STUDY GROUPS:** I highly encourage you to form study groups with people in this class. Studying with another person is excellent preparation for a quiz or exam. *If you want to exchange personal phone numbers you can do so in the space below:*

Name	Phone Number

**STUDENTS WITH DISABILITIES:** If you need support or assistance because of a disability, you may be eligible for academic accommodations through Disability Services. For more information contact Disability Services at (541) 463-5150, TTY 463-3079 or stop by Building 1, Room 218.

EMERGENCY PHONE NUMBERS:	EVACUATION ROUTE:
<p><b>Medical:</b> Student Health – Ext 6666 or 463-6666</p> <p><b>Security:</b> Ext 5555 or 463-5555</p> <p><b>Ambulance or Sheriff:</b> 911</p> <p><b>Public Phone:</b> Located on north side of the one story science building and in the SE and NW 2nd floor lobbies of Building 16, SCIE, outside rooms 202 and 226. Familiarize yourself with their locations. <b>THERE IS NO CHARGE FOR DIALING 911.</b></p>	<p>Follow instructor's directions to exit the building or follow the exit signs. Walk, don't run.</p> <p>Move away from the building.</p> <p><b>FIRE:</b> Pull alarm in hallway. Exit building by staying low if smoke impairs breathing and vision.</p> <p><b>EARTHQUAKE:</b> Duck and cover under desk, away from windows until motion stops. Then, carefully evacuate the building.</p>
<p><b>BAD WEATHER:</b> Listen to KLCC, 89.7 FM for campus closure information. If class is canceled please read ahead and be ready to quickly cover the material we missed. If roads are icy/snowy please drive very carefully and allow for enough travel time so that you arrive to class safely and on time. Watch for black ice in shady locations on freezing temperature days.</p>	



Week	Date	Class Topics	Text Chapters	Lab Projects
1	Jan. 8	What is a Plant? What is an Animal? How do organisms respond to their environment?	Beginnings of CH 33, 35, and 40	<b>Lab:</b> Plant and Animal Observations
2	Jan. 15	What is homeostasis? What is a good graph? How is it maintained? <b>Thursday: Quiz 1</b>	CH 40, 44	<b>Lab:</b> Collecting and presenting homeostasis data. <b>Model:</b> Thermoregulation Feedback model <b>Plant Growth Experiments:</b> Experimental teams meet, plan and initiate data collection
3	Jan. 22	Organisms' challenges to living in aquatic and terrestrial environments <b>Portfolios Due</b>	CH 29	<b>Reading Discussion:</b> <i>One Giant Step</i> <b>Plant Growth Experiments:</b> Teams meet, present Team Journal and entries to Instructors. Begin data analysis.
4	Jan. 29	Evolution of Multicellularity Cellular differentiation and organism developmental patterns Building a phylogenetic tree <b>Thursday: Quiz 2</b>	CH 28, 32, 25 Appendix C	<b>Reading Discussion:</b> <i>Closest Living Relatives, Whale Origins as Poster Child for Evolution</i> <b>Model:</b> Developmental pattern in animals and plants <b>Lab:</b> Building a phylogenetic tree
5	Feb. 5	Internal transport of materials in plants	CH 36	<b>Lab:</b> Plant Vascular System <b>Reading Discussion:</b> <i>Tallest Trees articles</i>
<b>Review Session: Sunday, 10-3, Feb. 10, EMU@U of O</b>				
6	Feb. 12	Internal transport of materials in animals <b>Thursday: Midterm and Portfolios Due</b>	CH 42	<b>Lab:</b> Animal circulatory systems <b>Review:</b> Write Mock Midterm
<b>Friday, Feb. 15 FIELD TRIP: Walama Restoration Project Data Collection</b> Extra Credit field experience				
7	Feb. 19	Obtaining energy and nutrients in plants	CH 37	<b>Plant Growth Experiments:</b> Final data collection. Finish analysis of data. Work on presentation (TBA).
8	Feb. 26	Obtaining energy and nutrients in animals <b>Thursday: Quiz 3</b>	CH 41	<b>Reading Discussion:</b> <i>What Fuels Fat?</i> <b>Model:</b> Comparative animal digestive systems <b>Dissection:</b> Earthworm <b>Lab:</b> Artificial Stomachs
9	Mar. 4	Responses to Environmental Signals <b>Thursday: Quiz 4</b>	CH 39, 45 (43, 48, 49)	<b>Lab:</b> Design and conduct environmental chemical experiments
10	Mar. 11	Plant and animal phylogeny	CH 25, 26	<b>Lab:</b> Big Picture Phylogenetic Tree <b>Review:</b> Write Mock Final
<b>Review Session: Sunday, 10-3, Mar. 16, EMU@U of O</b>				
11	Mar. 18	<b>Finals Week</b>	Finals, Tuesday, Mar. 18, 8:00-10:50a or 2:00-4:50p	

