

BIO 102L – Biology and Society Lab
Course Syllabus: Spring 2014

Instructor: Lisa L. Harmon
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Office: LSS 353
Phone: 885-6185
Office Hours: MWF 9:30-10:20 REN or by appointment
Laboratory: All Lab Sections Meet in LSS 363

Course Description:

There has never been a better day to start learning biology. Being a living thing you interact with the natural world each day. BIO 102 Lab is similar to the lecture course in that it is organized around four core areas: evolution and ecology; cells; genes; and animal systems. The goals of the course are to create a better understanding of biology, relate the core content to students' lives, clarify the process of science and develop practical laboratory skills.

Class Notes and Other Course Information:

All class information can be found on the class site on BB Learn

<http://www.bblearn.uidaho.edu>. You will be prompted to enter your username (vand1234) and password (same as your email account) to access course materials. Students will be required to print labs **before** coming to class and complete discussion questions from this site.

Grading:

- 12 Laboratories (20 pts. Each) 240
- Comprehensive Laboratory Exam 60

TOTAL	300
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Calculating Your Grade:

Letter grades are awarded based on the University of Idaho grade scale:

A	90 – 100%
B	80 – 89.9%
C	70 – 79.9%
D	60 – 69.9%
F	0 – 59.9%

Grades will be provided on the “My Grades” section of Bb Learn.

Absence from Laboratories:

Absences from a lab or lab exam will only be excused with a written letter in advance documenting reasons of illness, family emergency or conflict with an official University function (Athletics, FFA, Ag Ambassadors, course field trips, etc).

Exam Policy:

Students with university excused absences during the exam period must notify the instructor in advance. *Failure to notify instructor in writing (email) three days **in advance** will result in you NOT being allowed to make-up the exam.* Not showing up for the exam means you get a zero.

Grading Concerns:

If you think your laboratories, projects or exams were incorrectly graded, you must submit your concern to the Teaching Assistant (TA) within 7 days of receiving your graded assignment. If you would like to resubmit an answer for re-grading, a paragraph including at least one reference about your grading concern must be submitted to the TA within 7 days. Late Assignments will receive a 10% reduction each day it is late.

Exam Format:

The final laboratory exam will be given during the week of 4/28-5/1 during your normal laboratory time.

Academic Dishonesty:

Acts of cheating or plagiarism will not be tolerated. Your exams and writing assignments must be your own work. According to university policy cheating or plagiarism can result in you failing this class. This includes giving your work to others to copy.

→Cheating refers to the acquisition of answers to class questions in a dishonest fashion.

→Plagiarism is defined as i) the representation of another persons work as your own, in its entirety or with slight changing of wording, ii) the use of writing from published sources without citing the author(s) or iii) downloading material from the internet and presenting it as your own work.

UI Faculty-Staff Handbook: its.uidaho.edu/fsh/2300.html outlines the expected code of conduct for students at the University of Idaho. Article II addresses academic honesty of students.

Laboratory Schedule:

Monday 11:30-2:20 (Section 07) Roy Handley

Tuesday 8:30-11:20 (Section 01) Natalie Gage/Candice McKinley

Tuesday 11:30-2:20 (Section 02) Lisa Harmon

Tuesday 2:30-5:20 (Section 03) Angelena Buvel/Madison Watson

Tuesday 5:30-8:20 (Section 04) Courtney Bean/Benjamin Devaud

Wednesday 12:30-3:20 (Section 09) Mitch Carey

Wednesday 5:30-8:20 (Section 05) Alysia Lohman/Sydney Moffett

Thursday 8:30-11:20 (Section 06) Ericka Obaitek/Jolene Pflaum

Laboratory Course Outline:

DATE	Lab Name	Prelab Assignment	Postlab Assignment
1/15-1/17	Short Week/No Lab		
1/21-1/23 (No Mon. Lab)	Safety/Tree of Life Lab (Tuesday-Thursday Labs)	Print Tree of Lab Lab	Discussion Quest. #1 Due 1/27-1/30
1/27-1/30	Owl Pellets & Ecology	Print Owl Lab	Discussion Quest. #2 Due 2/3-2/6
2/3-2/6	Nutrient Pollution Lab	No Lab to Print	Discussion Quest. #3 Due 2/10-2/13
2/10-2/13	Natural Selection Lab	Print Nat. Select. Lab	Discussion Quest. #4 Due 2/24-2/27
2/17-2/20	Short Week/No Lab		
2/24-2/27	Bone Lab	Print Bone Lab	Discussion Quest. #5 Due 3/3-3/6
3/3-3/6	Cell Diversity Lab	Print Cell Lab	Discussion Quest. #6 Due 3/10-3/13
3/10-3/13	Cell Membrane Lab	Print Membrane Lab	Discussion Quest. #7 Due 3/24-3/27
3/17-3/21	Spring Break/No Lab		
3/24-3/27	Energy Lab	Print Energy Lab	Discussion Quest. #8 Due 3/31-4/3
3/31-4/3	Cell Division Lab	Print Cell Div. Lab	Discussion Quest. #9 Due 4/7-4/10
4/7-4/10	DNA/Cancer Lab	Print DNA Can. Lab	Finish Packet Next Week In Class
4/14-4/17	Finish DNA/Herbal Med. Lab (Week #1)	Print Herbal Med Lab (WK#1)	Lab Report Due 4/28-5/1
4/21-4/24	Finish Herbal/First Aid	Print Herbal (WK#2) & Print First Aid	First Aid Summaries & Presentations Due
4/28-5/1	Lab Final Exam	No Lab to Print	Herbal Lab Reports Due & Take Exam
5/5-5/8	Dead Week/ Lab Checkout		
5/12-5/16	Finals Week/No Lab		

**** All Postlab Discussion Questions are to be typed and stapled to completed laboratories. This packet will be worth 20 points and is to be turned in to your TA the following week at the beginning of lab unless otherwise stated by your TA.***

Ecology Learning Outcomes:

- 1) Students will be able to define basic terms like niche, habitat, consumer, producer, population, community and ecosystem that relate to topics within ecology.
- 2) Students will be able to simulate how nutrients are recycled within an ecosystem.
- 3) Students will be able to draw and label a food chain or food web showing how energy flows within an ecosystem.
- 4) Students will answer in written form questions regarding how energy flows and nutrients are recycled within an ecosystem.
- 5) Students will be able to simulate using a computer model how limiting nutrients impact a local freshwater ecosystem.
- 6) Students will simulate eutrophication and biological magnification using computer modeling.
- 7) Students will research one way that humans impact our ecosystems and will share their ecological problem with their lab class in written and verbal forms.
- 8) Students will suggest possible local, regional and international solutions to a particular ecological problem.

Evolution Learning Outcomes:

- 1) Students will be able to explain in writing how natural selection works and will simulate how this works within a population in the laboratory.
- 2) Students will be able to define the term evolution and give five pieces of evidence for evolution.
- 3) Students will observe pieces of evidence for evolution in the laboratory like homologous structures in different mammal groups.
- 4) Students will understand how to create a phylogeny, be able to label its main parts and know what represents a clade on an evolutionary tree.
- 5) Students will survey the tree of life and observe the main similarities and differences between the three domains and various kingdoms of organisms on planet Earth.

Cell & Cell Processes Learning Outcomes:

- 1) Students will be able to list the similarities and differences between prokaryotic and eukaryotic cells based on laboratory examples provided.
- 2) Students will be able to list the similarities and differences between plant and animal cells based on laboratory examples provided.
- 3) Students will be able to identify and draw various organelles and know their functions for the cell.
- 4) Students will be able to list which organelles belong to the endomembrane system.
- 5) Students will observe various single and simple multicellular organisms within the lab.
- 6) Students will learn to clean and use microscopes within the lab.
- 7) Students will be able to observe and define active (primary and secondary active transport) and passive transport (simple diffusion, facilitated diffusion and osmosis).
- 8) Student will observe photosynthesis and cellular respiration within the laboratory.
- 9) Students will compare and contrast mitosis to meiosis.

Genetics, Human Body and Scientific Method Learning Outcomes:

- 1) Students will follow the steps of the scientific method to answer a question and will complete a formal laboratory report to demonstrate how they followed the various steps of the method.
- 2) Students will collect a data set, analyze this data and make conclusion about a data set.
- 3) Students will compare how well herbal medicines work to inhibit bacterial growth.
- 4) Students will research how herbal medicines and prescription drugs are approved by the FDA.
- 5) Students will know the chemical shape and structure of DNA, and be able to define terms like gene, chromosomes, phenotype, genotype, recessive traits and dominant traits.
- 6) Students will be able to identify various inheritance patterns in humans.
- 7) Students will understand how PCR and gel electrophoresis works, and will run a gel within the laboratory.
- 8) Students will be able to create and read a pedigree that traces a recessive or dominant trait through a family.
- 9) Students will be able to create and read Punnett Squares to determine genotype and phenotype ratios.
- 10) Students will explain why different first aid methods work based on their knowledge of physiology and anatomy.