

BIO 407 – Biology and Society 102 Practicum in Laboratory Teaching

Course Syllabus: Fall 2020

Instructor: Lisa L. Harmon
Email: lisah@uidaho.edu
Office: LSS 265
Phone: 885-6185
Office Hours: MW 8-10AM in LSS 265 or by appointment

Course Description:

Practicum in Biology Laboratory Teaching is an experience that allows students to become peer mentors, tutors and teaching assistants to other students within the department. In this course students will prepare introductory lectures to laboratories, help set-up and take down weekly labs, tutor students inside the classroom, monitor laboratories in progress and provide students with feedback on their responses to laboratory questions. This experience helps students practice and solidify their own knowledge of a broad range of biology concepts, and it allows students to practice teaching using various methodologies.

University Learning Outcomes:

Learn and Integrate—Students will learn a variety of new laboratory skills and apply their knowledge to help guide other students in laboratory exercises and independent research projects for each course.

Think and Create—Students will create and communicate weekly introductions to the laboratories that help explain the main concepts being addressed. They will use multiple teaching strategies and apply the concepts to real world issues to gain student attention and fully explain the information under study in the laboratory that week.

Communicate—Students will create and articulate a broad range of scientific concepts to primarily freshmen and sophomore students. Teaching Assistants will spend three hours a week circulating within laboratory classes helping answer student questions or mentoring students completing independent research projects. Teaching Assistants must also communicate in written form to their students, providing them with valuable feedback on the concepts under study.

Clarifying Purpose and Perspective—Students will learn to manage information, time, people and their own work. They will be open to mentoring a diverse group of students. Students will gain a tremendous amount of confidence and expand their knowledge of self and others from teaching and mentoring.

Practice Citizenship—In the Laboratory Practicum Experience students will establish themselves as leaders within a group of twenty-four peers. They will make ethical decisions and use responsible behaviors in order to gain the respect of their classes. They will learn how to be firm and fair in dealing with the diverse groups of students they teach. They will collaborate with the instructors, technicians and other Teaching Assistants in order to successfully complete this job. Finally, teaching assistants will mediate semester project debates, discussions and presentations.

Class Notes and Other Course Information:

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

<https://www.bblearn.uidaho.edu>. You will be prompted to enter your username (vand1234) and password (same as your email account) to access course materials.

Grading: Scoring Guide for Laboratory Practicum Teaching Assistants:

Weekly Score (0-5 pts awarded weekly for 15 Weeks):

Weekly Task:	No=0	Yes=1
TA runs Zoom Help Room		

Total Points Possible for Semester= 75

Final Reflection Paper (Due at End of Semester):

1-2 page summary

TA shares three things they gained and learned from the Practicum Experience

TA shares one lab they would change and one they would keep and why

Typed, 10-12 Font, Double-spaced

Grammar/Spelling Correct

Paper Scoring Guide:

Points Awarded	Description of Paper
6 pts.	*Student discusses three things they have gained or learned from the Practicum Experience (2 pts per idea)
6 pts.	*Students discuss their favorite and least favorite lab (with improvement suggestions) (3 pts per idea)
1 pt.	*Paper is typed with correct formatting (1pt.)
2 pts.	*Paper has correct grammar and spelling (2 pts.)

Total Points Possible for Semester=15

Other Scores for Semester:

-5 pts. awarded for TA helping proctor/grade matching one exam during the semester

-5 pts. awarded based on TA end of the semester evaluations (average of scores)

Total Points Possible for Semester=10

Total Points for TA Practicum Class=100

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 and Meetings:

TAs must show up for every laboratory and TA meeting. If a TA needs to be absent for any reason, it is their responsibility to find a substitute for the classes they will miss. Substitutes can be other TAs for that semester or the course instructor. Please plan to attend all TA meetings. If you need to be absent, it is your responsibility to reschedule a meeting time with the instructor.

Confidentiality:

TAs will receive FERPA training and pass a standard university assessment on this knowledge. TAs will keep all student information and educational records confidential.

Discrimination:

No discrimination or harassment will be tolerated in the laboratories. TAs will be asked to watch the university approved discrimination program entitled, “Our Inclusive Workplace: Discrimination and Harassment Prevention Training for University of Idaho Employees.”

Center for Disability Access and Resources (CDAR):

Students with disabilities needing accommodations to fully participate in this class should contact the Center for Disability Access and Resources (CDAR). All accommodations must be approved through CDAR prior to being implemented. To learn more about the accommodation process, visit CDAR’s website at www.uidaho.edu/cdar or call 208-885-6307.

BIO 102L – Biology and Society Lab (Online-All Sections)

Course Syllabus: Fall 2020

Instructor: Lisa L. Harmon
Email: lisah@uidaho.edu
Office: LSS 265
Phone: 885-6185
Office Hours: MW 8-10AM LSS 265 or by appointment
Laboratory: **All Fall 2020 Labs will be completed using online activities**

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: (1) Ecology and Conservation; (2) Evolution of Living Things; (3) Genetics and Inheritance; and (4) Human Body Form and Function. 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 visualize experiments to better understand living systems.

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 given weekly instructions for each lab activity for the semester on Bb Learn.

Grading:

- 12 Laboratories Exercises (15 pts. each) 180
- Final Research Paper 20

TOTAL	200
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Calculating Your Grade:

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

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

Grades will be updated each week on the “My Grades” section of Bb Learn. Early Warning Grades (D’s & F’s) will be entered into the VandalStar program and an advisor will contact you within the first few weeks of classes. Midterm and Final Grades will be entered into the Vandal Web program.

Grading Policy for All Laboratories:

All labs will be open for completion for one week. Students may complete the lab activity at any time during that week. I recommend trying the activities early and communicating with the instructor if problems come up. Once the seven-day window has closed, any activity not completed will be graded as zero points.

Final Paper Policy:

The final human body myth papers will be due by Friday 12/4 at 11:59pm. All papers will need to be emailed to the instructor at lisah@uidaho.edu. 5 points of extra credit will be given to all papers that are received by Monday 11/30 at 11:59pm.

Grading Concerns:

If you think your laboratories, projects or exams were incorrectly graded, you must submit your concern to the instructor within 7 days of receiving your grade on Bb Learn. Please send me an email if a problem comes up.

Center for Disability Access and Resources (CDAR):

Students with disabilities needing accommodations to fully participate in this class should contact the Center for Disability Access and Resources (CDAR). All accommodations must be approved through CDAR prior to being implemented. To learn more about the accommodation process, visit CDAR's website at www.uidaho.edu/cdar or call 208-885-6307. Some assignments have timed quizzes. If you qualify for extra time through CDAR, this will be automated in the computer system. Please send me an email if you need further information or have questions about this.

Academic Dishonesty:

Acts of cheating or plagiarism will not be tolerated. Your exams and written 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 person's 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 Student Handbook outlines the expected code of conduct for students at the University of Idaho. Article II addresses academic honesty of students.

Laboratory Course Outline:

DATE	Lab Activity	Weekly Assignment & Due Date
Week #1 8/24- 8/28	Sign up for online systems	Sign up for iNaturalist, Simbio Virtual Labs & make sure access to Bb Learn is up-to-date <u>Due Fri 8/28 at 11:59pm</u>
Week #2 8/28- 9/4	iNaturalist Activity	Hike with iNaturalist app and identify 15 organisms. Organism List <u>Due Friday 9/4 at 11:59pm</u>
Week #3 9/4- 9/11	Simbio Virtual Lab= Isle Royale	Complete Isle Royale simulation on SimUText website All activities & graded questions <u>Due Fri 9/11 at 11:59pm</u>
Week #4 9/11- 9/18	Simbio Virtual Lab= Nutrient Pollution	Complete Nutrient Pollution simulation on SimUText site All activities & graded questions <u>Due Fri 9/18 at 11:59pm</u>
Week #5 9/18- 9/25	Climate Change Activity	Watch 3 Ted Talks relating to Climate Change Annotated Bibliography <u>Due Friday 9/25 at 11:59pm</u>
Week #6 9/25- 10/2	Simbio Virtual Lab= Darwinian Snails	Complete Darwinian Snail simulation on SimUText site All activities & graded questions <u>Due Fri 10/2 at 11:59pm</u>
Week #7 10/2- 10/9	Simbio Virtual Lab= Genetic Drift-Bottleneck Ferrets	Complete Genetic Drift-BN Ferret simulation on SimUText All activities & graded questions <u>Due Fri 10/9 at 11:59pm</u>
Week #8 10/9- 10/16	Tree of Life Activity	Complete Tree of Life phylogeny exploration Phylogeny with organisms <u>Due Friday 10/16 at 11:59pm</u>
Week #9 10/16- 10/23	Simbio Virtual Lab= DNA Explored	Complete the DNA Explored simulation on SimUText site All activities & questions <u>Due Fri 10/23 at 11:59pm</u>
Week #10 10/23- 10/30	Cell Division Activity	Complete cell division drawings & take quiz on Bb Learn Cell Division Quiz <u>Due Friday 10/30 at 11:59pm</u>
Week #11 10/30- 11/6	Simbio Virtual Lab= Mendelian Pigs	Complete the Mendelian Pigs simulation on SimUText site All activities & graded questions <u>Due Fri 11/6 at 11:59pm</u>
Week #12 11/6- 11/13	DNA/Cancer Activity	Complete DNA/Cancer Lab & take quiz on Bb Learn DNA/Cancer Quiz <u>Due Friday 11/13 at 11:59pm</u>
Week #13 11/13- 11/20	Simbio Virtual Lab= How Diseases Spread	Complete How Diseases Spread simulation on SimUText All activities & questions <u>Due Fri 11/29 at 11:59pm</u>
Week #14 11/21- 11/29	NO LABS= Thanksgiving Break	
Week #15 11/30-12/4	Human Body Myth Papers	Complete Human Body Myth Papers— Paper <u>Due Friday 12/4 at 11:59pm (No Late Papers)</u> (5 pts extra credit if paper is received by Monday 11/30)
Week #16-17 12/4- 12/18	NO LABS/FINALS	

Fall 2020 Learning Outcomes:

Ecology Learning Outcomes:

- 1) Students will explore an outdoor space, classify 15 organisms and answer some questions about each living thing relating to its niche and habitat.
- 2) Students will simulate population interactions between wolves, moose and grasses.
- 3) Students will use math and graphing to analyze the growth of populations over time and simulate influences on these populations like predation, introduced species and climate change.
- 4) Students will be able to simulate how nutrients are recycled within an ecosystem and some problems that cause imbalances in these cycles.
- 5) Students will write their personal reflections on climate change impacts and possible solutions.

Evolution Learning Outcomes:

- 1) Students will simulate how natural selection works within a population.
- 2) Students will measure and graph changes in a population of snails over time.
- 3) Students will simulate the effects of genetic drift, bottlenecks and other processes that impact populations in the wild.
- 4) 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.
- 5) Students will create a phylogeny that includes bacteria, archaeans, and eukarya (including plants, animals and fungi) along with example organisms in each of these domains and kingdoms.

Genetics and Inheritance Learning Outcomes:

- 1) Students will be able to describe the chemical components of DNA, DNA's overall shape and how it is replicated.
- 2) Students will explore how PCR mimics DNA replication.
- 3) Students will compare and contrast mitosis to meiosis.
- 4) Students will simulate Mendelian complete dominance and some variations on Mendel's Laws in a breeding experiment.
- 5) Students will be able to identify various inheritance patterns in a breeding experiment.
- 6) Students will understand how PCR and gel electrophoresis works, and will view this process being completed in the laboratory.
- 7) Students will be able to create and read a pedigree that traces a recessive or dominant trait through a family.
- 8) Students will be able to create and read Punnett Squares to determine offspring genotype and phenotype ratios.

Human Body Form and Function Learning Outcomes:

- 1) Students will explore how diseases like COVID-19 spread and how vaccinations work within populations.
- 2) Students will explain human body myths based on their knowledge of physiology and anatomy.
- 3) Students will research a myth and create a written summary of the findings along with an annotated bibliography.