BIO 407 – Biology and Society 102 Practicum in Laboratory Teaching
Course Syllabus: Fall 2013

Instructor: Lisa L. Harmon
Email: lisah@uidaho.edu
Office: LSS 353
Phone: 885-6185
Office Hours: MW 9:30-10:20 LSS 353 or by appointment
Laboratory: **All Lab Sections & TA Meetings in LSS 363**

***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. Students will be required to print labs **before** coming to class and complete discussion questions from this site.

Grading:
Students will be evaluated by the course lecturer and by their students at the end of the semester. Based on this information, a letter grade will be assigned to their work.

***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.

Laboratory Schedule:

Monday 2:30-5:20 (Section 04) Roy Handley
Tuesday 9:30-12:20 (Section 01) Lisa Harmon
Tuesday 1:30-4:20 (Section 02) Alysia Lohman
Tuesday 4:30-7:20 (Section 03) Sean Browning/Natalie Gage
Wednesday 1:30-4:20 (Section 05) Courtney Bean
Wednesday 4:30-7:20 (Section 06) Tina Nagle
Thursday 9:30-12:20 (Section 07) Maxwell Reinhardt
Thursday 12:30-3:20 (Section 08) Angelena Buvel/Madison Watson
Thursday 3:30-6:20 (Section 09) Ericka Obaiteck/Jolene Pflaum

BIO 102L – Biology and Society Lab
Course Syllabus: Fall 2013

Instructor: Lisa L. Harmon
Email: lisah@uidaho.edu
Office: LSS 353
Phone: 885-6185
Office Hours: MW 9:30-10:20 LSS 353 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. Biology 102 Laboratory is a part of the University of Idaho General Education curriculum that emphasizes a multi-year, broad liberal education. This course will discuss environmental issues, genetics and human health topics that will be integrated into other courses you take here.

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/Activities (20 pts. Each)	240
• Comprehensive Laboratory Practical	60
TOTAL	300

***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 12/2 to 12/6 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 2:30-5:20 (Section 04) Roy Handley
Tuesday 9:30-12:20 (Section 01) Lisa Harmon
Tuesday 1:30-4:20 (Section 02) Alysia Lohman
Tuesday 4:30-7:20 (Section 03) Sean Browning/Natalie Gage
Wednesday 1:30-4:20 (Section 05) Courtney Bean
Wednesday 4:30-7:20 (Section 06) Tina Nagle
Thursday 9:30-12:20 (Section 07) Maxwell Reinhardt
Thursday 12:30-3:20 (Section 08) Angelena Buvel/Madison Watson
Thursday 3:30-6:20 (Section 09) Ericka Obaiteck/Jolene Pflaum

Laboratory Course Outline:

DATE	Lab Name	Prelab Assignment	Postlab Assignment
8/26-8/29	Safety/Bone Lab	Print Bone Lab	Discussion Quest. #1 Due 9/9-9/12
9/2-9/5	**Short Week/No Lab**		
9/9-9/12	Tree of Life Intro.	Print Tree of Life Lab	Discussion Quest. #2 Due 9/16-9/19
9/16-9/19	Nutrient Pollution Lab	No Lab to Print	Discussion Quest. #3 Due 9/23-9/26
9/23-9/26	Owl Pellets & Ecology	Print Owl Lab	Discussion Quest. #4 Due 9/30-10/3
9/30-10/3	Natural Selection Lab	Print Nat. Select. Lab	Discussion Quest. #5 Due 10/7-10/10
10/7-10/10	Cell Diversity Lab	Print Cell Lab	Discussion Quest. #6 Due 10/14-10/17
10/14-10/17	Cell Membrane Lab	Print Membrane Lab	Discussion Quest. #7 Due 10/21-10/24
10/21-10/24	Energy Lab	Print Energy Lab	Discussion Quest. #8 Due 10/28-10/31
10/28-10/31	Cell Division Lab	Print Cell Div. Lab	Discussion Quest. #9 Due 11/4-11/7
11/4-11/7	DNA Cancer Lab	Print DNA Can. Lab	Discussion Quest. #10 Due 11/11-11/14
11/11-11/14	Herbal Medicine Lab	Print Herbal Med Lab (WK#1)	Lab Report #11 Due 12/2-12/5
11/18-11/21	Finish Herbal/First Aid	Print Herbal (WK#2) & Print First Aid	Discussion Quest. #12 Due In Class
11/25-11/29	**Fall Recess/No Lab**		
12/2-12/5	Lab Final Exam	No Lab to Print	Complete in Lab
12/9-12/13	Dead Week/ Lab Checkout		
12/16-12/19	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.