BIO 102L – Biology and Society Lab (In-Person Lab Sections 01, 02 & 03)

Course Syllabus: SPRING 2022

Instructor: Lisa Bird
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Office: LSS 164A
Phone: 208-885-6185
Office Hours: MW 8:30-9:20AM LSS 164A or by appointment (email me)
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 five core areas: (1) Ecology and Conservation; (2) Cells and Cellular Processes; (3) Genetics and Inheritance; (4) Evolution of Living Things; and (5) 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 the Canvas website at canvas.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 from this site.

Grading:
- 13 Laboratories (15 pts. each) 195
- Final Research Project & Presentation (20 pts.) 20

TOTAL 215

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 updated each week on the “Grades” section of Canvas. 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.
**Clothing Requirements:**
Students are required to wear pants that reach to the ankle, shirts that cover the shoulders and close-toed shoes to each lab. When masks are required by the University of Idaho, these will also be required in lab. Students who do not have this clothing on for lab will not be allowed in the lab room.

**Absence from Laboratories:**
Absences from a lab 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.). If a student needs to miss a laboratory, please email the instructor in advance of the lab. 20% of the points for a lab will be taken off each day the student does not notify their instructor of an excused absence up to seven days after the lab is complete. Failure to contact the instructor during the same week of the lab missed will result in a zero for the lab. Students may **NOT** attend other lab sections without permission due to space and safety issues.

**Final Project Policy:**
Students with university excused absences during the final project presentation week must notify the instructor in advance. *Failure to notify the instructor in writing (email) three days in advance will result in you NOT being allowed to make-up the presentation.* Not showing up for the presentation means you get a zero. **The Final Presentations will be on 4/26 & 4/27!**

**Grading Concerns:**
If you think your laboratories or projects were incorrectly graded, you must submit your concern to the instructor 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 instructor within 7 days. Late Assignments will receive a 20% reduction each day they are late.

**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](http://www.uidaho.edu/cdar) or call 208-885-6307.

**Academic Dishonesty:**
Acts of cheating or plagiarism will not be tolerated. Your labs 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 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 Schedule:**
Tuesday 8:30-11:20 (Section 01)
Tuesday 11:30-2:20 (Section 02)
Wednesday 11:30-2:20 (Section 03)

**Laboratory Course Outline:**

<table>
<thead>
<tr>
<th>DATE</th>
<th>Lab Name</th>
<th>What to bring to lab</th>
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<tbody>
<tr>
<td>1/12-1/14</td>
<td>NO LAB/Short Week</td>
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<tr>
<td>1/18-1/19</td>
<td>Safety &amp; Tree of Life Lab</td>
<td>Print Tree of Life Lab</td>
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<tr>
<td>1/25-1/26</td>
<td>Ecology Introduction Lab</td>
<td>Print Eco Intro Lab</td>
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<tr>
<td>2/1-2/2</td>
<td>Nutrient Pollution Lab/ Tree ID</td>
<td>Print Tree Identification Sheet</td>
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<td>2/8-2/9</td>
<td>Macromolecules Lab</td>
<td>Print Macromolecules Lab</td>
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<tr>
<td>2/15-2/16</td>
<td>Cell Diversity Lab</td>
<td>Print Cell Diversity Lab</td>
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<tr>
<td>2/22-2/23</td>
<td>Cell Membrane Lab</td>
<td>Print Cell Membrane Lab</td>
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<tr>
<td>3/1-3/2</td>
<td>Energy &amp; Enzymes Lab</td>
<td>Print Energy &amp; Enzymes Lab</td>
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<tr>
<td>3/8-3/9</td>
<td>Cell Division Lab</td>
<td>Print Cell Division Lab</td>
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<td>3/13-3/20</td>
<td>NO LAB/Spring Break</td>
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<tr>
<td>3/22-3/23</td>
<td>DNA/Cancer Lab</td>
<td>Print DNA/Cancer Lab</td>
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<td>3/29-3/30</td>
<td>Finish Cancer Lab/Natural</td>
<td>Print Natural Select. Lab</td>
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<td></td>
<td>Selection Lab</td>
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<tr>
<td>4/5-4/6</td>
<td>Bone Lab</td>
<td>Bone Lab</td>
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<tr>
<td>4/12-4/13</td>
<td>Herbal Medicine Lab</td>
<td>Herbal Medicine Lab</td>
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<td>4/19-4/20</td>
<td>Finish Herbal Med. Lab/ COVID</td>
<td>Print COVID Testing Lab</td>
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<td>Testing Lab</td>
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<td>4/26-4/27</td>
<td>Project Papers &amp; Presentations</td>
<td>Print Papers &amp; Bring Presentation on Flash</td>
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<td>Drives</td>
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<td>5/3-5/14</td>
<td>Dead Week/Lab Checkout</td>
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<td></td>
<td>Finals Week/NO LABS</td>
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*All labs must be completed in class and turned in at the end of the lab time. Make sure to print out the weekly lab before you come to class.*
SPRING 2022 Learning Outcomes:

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 calculate and analyze population growth curves.
3) Students will be able to simulate how nutrients are recycled within an ecosystem and some problems that cause imbalances in these cycles.
4) Students will be able to draw and label a food chain or food web showing how energy flows within an ecosystem.
5) Students will survey the diversity of life and classify organisms into various phyla.
6) Students will be able to describe some distinguishing characteristics of plants, animals and fungi.

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.
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.

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 list the four macromolecules that help build cells.
4) Students will be able to state the simple monomers, polymers and functions of the four macromolecules.
5) Students will be able to identify and draw various organelles and know their functions for the cell.
6) Students will be able to list which organelles belong to the endomembrane system.
7) Students will observe various single cell and simple multicellular organisms within the lab.
8) Students will learn to clean and use microscopes within the lab.
9) Students will be able to observe and define active (primary and secondary active transport) and passive transport (simple diffusion, facilitated diffusion and osmosis).
10) Student will observe photosynthesis, cellular respiration and fermentation within the laboratory, and answer written questions about these processes.
11) Students will do reactions with enzymes and inhibitors. Students will relate information on enzymes and inhibitors to their importance in facilitating the chemical reactions inside cells.
12) 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 conclusions about a data set.
3) Students will compare how well herbal medicines work to inhibit bacterial growth.
4) 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.
5) Students will build the structures of DNA and RNA and compare them with guided questions.
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 explain human body myths based on their knowledge of physiology and anatomy.