Idaho State University-Meridian Medical Arts Charter School
Biol 1101- Biology I & Biology I Lab
Meets General Education Objective
Monday-Friday

**Instructor:** Lindley Ballen (she/her)
**Office/Room:** 1
**Office hours:** 7:30 am-3:30 pm
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**Name of text:** Life: The Science of Biology, 7th Ed., Sinauer Associates 2004

**Course description:** Major concepts in biology with an emphasis on the acquisition of new knowledge, cell structure and function, principles of inheritance, and evolution. This course is for students majoring in biological sciences. COREQ: BIOL 1101L. Partially satisfies Objective 5 of the General Education Requirements.

**Course objectives:** Upon completion of the course, the student should have sufficient knowledge of and be able to:

- Explain the basic concepts of cells as the fundamental unit of life
- Understand and apply the basic concepts of cell energetics
- Demonstrate a working knowledge of the processes of cell division, heredity, and molecular biology
- Discuss and evaluate the basic concepts of ecology and evolution
- Understand how the biological sciences explain the natural world and begin the process of developing critical thinking skills by recognizing and evaluating evidence and use it to solve problems
- Understand basic concepts and develop critical thinking skills that will serve as a foundation for more advanced biology courses

**Weekly agenda:**

| Week(s) | Topic | Assignments/Labs/Exams |
|---|---|---|
| 1 | Lab safety and syllabus | • Sign Safety sheet<br>• Course syllabus |
| 2-3 | Introduction to the Scientific Method<br>Basic Principles of Science<br>Formulating hypotheses | • Sody Pop Lab (Termite Lab)<br>• Practice writing hypotheses worksheet |
| 4-6 | Developing experiments and understanding variables<br>Writing a peer reviewed paper | • Practice writing introductions worksheet<br>• Practice writing discussions worksheet<br>• Reading: Scientific Methods and |

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| | | Human Knowledge by Pianka |
| Summative: Experiment and lab report | | |
| 7 | Chemistry, early earth, prebiotic soup<br>Introduction to cells | • Create a cell Zine! |
| 8 | Cell membranes | • Naked Egg Lab |
| 8-9 | Biological macromolecules:<br>Sugars<br>Lipids<br>Amino Acids and proteins | • Cheese curds lab |
| Summative exam: Cells to Macromolecules | | |
| 12 | RNA and DNA | • DNA keychains activity |
| 13-14 | DNA Replication | • PCR/Gel electrophoresis |
| 15-16 | Transcription and translation | • Secret code activity |
| 17-18 | Mitosis and meiosis | • Pop beads lab (mitosis), root tip lab (see stages of meiosis)<br>• Pop beads lab (meiosis)<br>• Microscopy lab |
| Summative exam: RNA/DNA to Mitosis/Meiosis | | |
| 19-21 | Genetics<br>Chi Squared Analyses | • Star Wars genetics assignment<br>• Crossing over lab |
| 22-25 | Bioengineering, genetic advances, ethics | • Various discussion topics and peer reviewed papers |
| Summative exam: Genetics | | |
| 26-31 | Respiration and Photosynthesis | • Respiration lab<br>• Photoreactive paper art activity<br>• Photosynthesis lab<br>• Photosynthesis lab report |
| Summative exam: Respiration, photosynthesis | | |
| Final project and summative exam | | |

**Course Requirements and Assessments:** This course requires classroom work, exams, and laboratory work. You must complete at least 80% of the assignments in order to pass the class. This means that you cannot just pass the exams, never turn in classwork or homework, and expect to pass the class.

- Classwork/assignments- Classwork and assignments will be given almost daily.
- Exams- You will have several exams throughout the year. Exams will assess your ability to understand the principles and apply knowledge to novel situations. Exams will consist of a combination of multiple choice, short answer, and essay questions.

- Labs- Students will be engaged in a variety of laboratory work for a minimum of 25% of the instructional time. Labs are inquiry based and student-driven.

**Grading:** Grading will follow the standard grading scale accepted by Idaho State University.

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| A | 94-100% | A- | 90-93.9% | B+ | 87-89% | B | 83-86% |
| B- | 80-82.9% | C+ | 77.9-79% | C | 73-76% | C- | 70-72.9% |

Percentages for Ds and Fs are not listed because that is a no-no zone :-) You can and will pass this class with a C or higher to earn college-level credit. You can do it!

Grades will be determined based upon student performance on the following tasks:

| Assignment | Weight |
|---|---|
| Exams and summative assignments | 50% |
| Labs | 25% |
| Classwork | 15% |
| Homework, warm-ups, and misc. | 10% |

Classwork may be entered in PowerSchool on a 5 point scale (5 meaning the work was complete and done well to 0 meaning the work was not completed; scores from 4 to 1 indicate not all of the work was completed and/or answered thoroughly). Most of the classwork will be corrected and discussed before students turn it in. Students should make corrections to help with comprehension.

**Graded Work/Test Corrections:** In most cases, I do not allow students to submit revised or corrected versions of classwork/projects/warmups/tests after it has been graded and entered into PowerSchool. I provided feedback or an answer key for most assignments that is for student reference only. Students are encouraged to review my feedback, make corrections on their own, or use it to help study for a test, however, the score received on classwork/projects/warmups/tests is the score that stands.

**Test Make-Up:** You are enrolled in a college-level class and are expected to be present in class on the day of the test. Test dates are posted at least one week in advance. Therefore, missing a test does not mean you receive up to two full days to make up a test, so please plan accordingly. If you know in advance that you will miss a test, you must discuss a make-up time with me as far in advance as possible. If your absence is unplanned, you must email me the day of the missed test by 2:15 pm to schedule a make-up. If an email is not received by 2:15 pm on the day of the missed test, 2 points will be deducted from the final test score.

**Late Work:**Missing work will be entered into PowerSchool with a reminder zero to encourage students to turn in their work. For each unit, students will have up until the missing work cutoff date (always two full days before each unit exam unless otherwise noted) to turn in the missing assignment. In most cases, late assignments that are submitted after the unit late work cutoff date *will not* be accepted. Please come to me to discuss any issues you may have before an assignment is due. Please remember that any decisions made regarding the acceptance of late work or extending due dates is made at the discretion of the teacher and will be made on an individual case by case basis.

**Academic Integrity and Dishonesty:** Please make sure you are familiar with Idaho State University's policies on academic integrity and dishonesty. Please make sure you know and understand the definitions of cheating and plagiarism. The

expectation is that you will not engage in any form of academic dishonesty. Be honest and give credit where credit is due. If you engage in cheating or plagiarism the penalty imposed by an instructor for academic dishonesty shall be based on the instructor's professional judgment and wisdom. Details can be found on the following website: http://coursecat.isu.edu/undergraduate/academic_integrity_and_dishonesty_policy/

**Reasonable Accommodations for Students with Disabilities:** If you have a disability or think you have a disability (physical, learning, hearing, visual or psychiatric) which may need a reasonable accommodation, please contact the Disability Services Office located in the Rendezvous Building Room 125, 282-3599 and in the Idaho Fallsin the Bennion Student Union Room 223.

**Evaluation of Course and Instructor:** At the end of the course, evaluations will be given to students for feedback on the course and instructor.

**ISU Course Expectations:** This is a college-level course and thus will demand college-level work. Reading assignments, classroom activities, and homework will be assigned weekly. Regular attendance is expected for this class as absences will negatively affect your grade. There are no make-up exams for lack of preparation or unexcused absences. If you are going to miss an exam you will need to schedule a time to take that exam prior to the exam. The exam must be taken within 1 week of the original exam date. Failure to make prior arrangements or a missed exam will result in a zero score on the exam. Exam retakes are not allowed.

You will be expected to act like a college-level student. Arriving late, cell phone use, and talking during a lecture are extremely disruptive to other students and the instructor and will not be tolerated. Photography or recording by any mechanism will not be allowed unless otherwise instructed or prior approval is obtained.

**MMACHS Class Rules:**

- Be prepared and on time: Come to class with all required materials as you will not be excused to retrieve materials from your locker. If you choose to come to class late, *you* are responsible for obtaining all missed notes from a classmate.
- Be considerate, kind, and respectful: We are all part of a learning environment and have tasks to complete. Your job as a student is to learn and my job as a teacher is to help facilitate that learning. Learning and classroom management is easier when both parties agree to be respectful of each other and are kind and considerate towards one another.
- Treat each other with dignity: We all come from different backgrounds and have had different life experiences. Please listen to each other's ideas with an open mind and heart. You do not have to agree with one another but you must respect each person's individuality.
- Be safe: Observe and follow all class and lab safety rules.
- Participate and be an active learner: Technology is ever-present in our lives. It is our responsibility to learn how to positively utilize and include this technology in our lives. If your cell phone or other devices become a problem or distraction for yourself and others, you will be asked to place it in a bin in the classroom. If your electronic device becomes a consistent problem you will need to write an email to your parents (cc myself) explaining why your device has become a problem and how you plan to remedy this situation going forward.
- For remote learning: You are expected to log into class on time. You are expected to actively and appropriately engage in learning. You are expected to be professional. You are expected to treat the online learning environment as if you were physically in the classroom. If you wouldn't wear it, say it, do it, etc in the classroom, do not expect to be allowed to do it while learning remotely. For example, please do not show up for class in bed, wearing your jammies, snuggling with your dog.

I am very excited to be your teacher this year. I enjoy being available to students and parents to discuss grades, student performance, and other concerns. Please do not hesitate to speak with me if you have a concern- 9 times out of 10 it is something that I can easily remedy. I am here to help and to be an ally on your educational journey.