

Biology 10L: Introduction to Life Science Lab

Fall 2023

Reedley College

Class No:
52009, 52010, 52012

Class Format:
In person

Units (Hours):
1 (3)

Instructor:
Sara Blake

Meeting Time:
52010: Tue 12:30-3:20
52009: Thu 12:30-3:20
52012: Fri 9:00-11:50

Email:
sara.blake@reedleycollege.edu

Location:
LFS 17

Office Hours:
Friday 12:00-1:00 (tentative)

Website:
<https://scccd.instructure.com>
Log in with your SCCCD credentials

Office Location:
TBA

Course Description

Prerequisite or Co-requisite: Biology 10.

Summary: This lab course is recommended for the non-biological science and pre-education majors. This is an introductory course using biological concepts. The organismal structure, function, inheritance, evolution, and ecology are covered. Field trips may be required. Not open to students with credit in Biology 3.

Textbooks

The Lab manual is available free of charge. The lab manual can be purchased at the Reedley College bookstore or provided digitally on our Canvas course broken down by week. You will be responsible for all the content that I have posted to Canvas.

I highly encourage you bring a laptop or tablet to our lab meetings if you do not plan to print out the materials beforehand. It is YOUR RESPONSIBILITY to come to lab prepared with the content assigned.

Course Structure

Biol 10L is held entirely in person this semester. Labs are hands-on and experiment based. This means that as you work through the activities in the lab manual, some people may take longer than others. This is ok! Take the time that you need to learn the material and remember I am always around to help.

The Lab Reports (the downloads that you followed and filled in on Lab days) will be due as Canvas uploads on Fridays at midnight. This gives you a little extra time if you did not quite finish up the concept questions at the end of the labs. If you prefer to hand-write the labs, they are due during class time. I will accept them late, but then you will not have anything to study for the following week's lab.

Communication

As a course with online components, it is important to be conscious of the difference in communication styles. When representing yourself online you must identify yourself by your real name. Be mindful of your word choice and avoid sharing personal information in online discussions.

Student Learning Outcomes

- Evaluate current scientific literature and examine how the scientific method is employed in biological research.
- Identify levels of biological organization and apply these concepts to living systems.
 - By examining anatomical and physiological features.
 - By investigating chemical and energy relationships.
- Assess human impacts on natural systems and critically evaluate solutions to environmental problems.
- Explore the cellular basis of life.
- Apply the principles of Mendelian genetics to evolutionary theory and human medicine.
- Recognize the function of DNA and how its discovery has impacted modern science.
- Classify the wide range of living organisms and identify the evolutionary mechanisms that have impacted this diversity.
- Recognize the chemical basis of life.

Objectives

- compare and contrast Eukaryote and Prokaryote cell structure.
- recognize chemical elements, bonds and properties of water.
- compare anatomical and physiological features seen in the animal kingdom with emphasis on human body systems.
- calculate genetic probabilities based on the principles of Mendelian genetics.
- distinguish the processes of transcription and translation and identify their roles in protein synthesis.
- diagram plant life cycles and identify major plant adaptations.
- explain and compare the processes of photosynthesis and cellular respiration.
- demonstrate knowledge of evolutionary theory and identify the different mechanisms responsible for biological change.
- describe energy flow and nutrient cycling within an ecosystem.
- consider human impact on natural systems.
- relate principles of population ecology to the study of the global human population.
- read scientific literature and apply the steps of the scientific method to laboratory research.
- use the compound light microscope to examine cellular anatomy and reproduction.
- apply taxonomic classification in identifying animals through the use of a dichotomous key.

Grading

Your grade will be determined by calculating the amount of points you earned divided by the total points available in the course. Do not hesitate to email me if you notice a mistake in your online grades, however emails regarding extra credit opportunities or requests to give you a higher grade will not be entertained. Letter grades are distributed on the following scale:

PERCENT	GRADE
90 – 100	A
80 – 89.99	B
70 – 79.99	C
60 – 69.99	D
0 – 59.99	F

The point breakdown for this course (as it sits now) is as follows:

TASK	POINTS
Lab Assignments (17x 10pts)	170
Lab Quizzes (17 x 10pts)	170
Total Available	340

Significant Assignments

Lab Assignments: These are the grade parts of the Labs, where you write up your results or conclusions and illustrations of the important cells and structures that we cover that day. Since we are in an age of pocket technology, if you are uncomfortable hand-illustrating our microscope findings you are welcome to take photos with a phone and embed them in your reports. Just make sure you are still including all necessary components.

Lab Quizzes: The lab quizzes will be given the week following the lab that they apply to. So if we learn about Animals in week 9, the quiz for the Animal content will be held in week 10. These quizzes **MUST** be taken in the first 30 minutes of our labs and will be taken on Canvas.

Attendance and Add/Drop Policy

Not showing up on the first class day will result in being dropped from the course. You will also be dropped if you miss more than 2 labs in the first 9 weeks.

You have until half way through the semester to drop. If you elect to do so, be sure to drop yourself. Do not assume you have been automatically dropped! This is very important, as after the half way point a grade must be given, by state law, whether you attend class or not.

College Policies

The college has several policies that you will be expected to adhere to in my course. The Policy on Students with Disabilities, the University Honor Code, the Policy on Cheating and Plagiarism, a statement on copyright, and the university computer requirement, portions of which are below, can all be found in the University Catalog (Policies and Regulations) and Class Schedule.

Academic Dishonesty

Students at Reedley College are entitled to the best education that the college can make available to them, and they, their instructors, and their fellow students share the responsibility to ensure this education is honestly attained. Because cheating, plagiarism, and collusion in dishonest activities erode the integrity of the college, each student is expected to exert an entire honest effort in all academic endeavors. Academic dishonesty in any form is a very serious offense and will incur serious consequences. See college catalog for details.

Subject to Change

This syllabus and schedule are subject to change in the event of extenuating circumstances. If you are absent from class, it is your responsibility to check on announcements made while you were absent.

Tentative Course Schedule

WEEK (MONDAY)	LAB ACTIVITY	LAB QUIZ
1 (8/7)	Scientific Method	Intro Survey
2 (8/14)	Chemistry	Scientific Method
3 (8/21)	Microscopy	Chemistry
4 (8/28)	Cells and Membranes	Microscopy
5 (9/4)	Cellular Respiration	Cells
6 (9/11)	Photosynthesis	Cellular Respiration
7 (9/18)	DNA and Protein Synthesis	Photosynthesis
8 (9/25)	Mitosis and Meiosis	Protein Synthesis
9 (10/2)	Genetics	Mitosis and Meiosis
10 (10/9)	Epidemiology	Genetics
11 (10/16)	Evolution	Disease
12 (10/23)	Diversity of Life 1	Evolution
13 (10/30)	Diversity of Life 2	Diversity of Life 1
14 (11/6)	Diversity of Life 3	Diversity of Life 2
15 (11/13)	Ecology and Biodiversity	Diversity of Life 3
16 (11/20)	Human Ecology, Carbon Footprint	Ecology and Biodiversity
17 (11/27)	TBA	Human Ecology
18 (12/4)	TBA	TBA