

## **BIOLOGY 10L: Introduction to Life Science Lab**

### **Spring 2020**

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Lab #58888: Monday 8:45-11:50pm; LFS 11

### **I. COURSE DESCRIPTION**

**A. Title:** Biology 10L – Introduction to Life Science Lab

**B. Prerequisite or Co-requisite:** Biology 10.

**C. 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.

**D.** Biology 10L is a 1 unit lab class.

### **II. COURSE CONTENT**

#### **Student Learning Outcomes:**

*Upon completion of this course, students will be able to:*

- 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:**

*In the process of completing this course, students will:*

- 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.

### **III. REQUIRED MATERIALS:**

1. Reedley College Biology Handouts. This can be obtained in the school bookstore.
2. E-mail address. This can be obtained free through the school

### **IV. ATTENDANCE:**

You will be dropped if you fail to attend the first lab. You will also be dropped if you miss more than two labs.

## V. Grading:

Course grades are non-negotiable.

FINAL GRADES WILL NOT BE CURVED... ALSO, I DO NOT round up your grades to the next letter grade.

### A. Grading

<u>Description</u>	<u>Points Possible</u>
16 Lab Assignments (15 pts. each)	240
16 Lab Quizzes (10 pts. each)	160
<u>Performance Final Project</u>	<u>50</u>

Approximate Total Points = 450

### B. Grading scale:

The final course grade is based on:

Percent Range	Grade
90-100	A
80-89.99	B
70-79.99	C
60-69.99	D
Less than 60	F

At any point you can check your grades on our Canvas site through the Reedley College homepage: [www.reedleycollege.edu](http://www.reedleycollege.edu)

You are encouraged to check this site regularly and keep track of your own grades!

C. Quizzes will occur on dates specified on the course schedule. Quizzes are to be assigned and completed through canvas. Quizzes may only be accessed one time, and

must be completed in one sitting. Material may include and combination of multiple-choice, true-false, matching, and short answer questions. Note on technology: Quizzes will not be reset or allowed to be made up due to technology issues (e.g. internet connection lost, computer battery died, ect.). It is the student's responsibility to make sure the correct technology requirements are met to complete the quiz, when accessed, in one sitting.

D. Lab reports will be collected at the end of each laboratory period where a laboratory exercise was conducted. These must be complete before you leave the lab period.

## **VI. Other information:**

**Drops:** 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.

## **VII. Help:**

If you should have difficulty grasping the material presented during the course be sure to talk to your instructor at the first sign of trouble. Often, a few minutes can clear up many problems! If you are having trouble studying, perhaps you need a few study hints or a tutor at the Tutorial Center. Please go in for help!

Success comes before work only in the dictionary. Overall, I hope you have a fun semester and learn Biology along the way. Good Luck.

## **VIII. 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.

### IX. Accommodations

If you have a verified need for an academic accommodation or material in alternate media (i.e. Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.

<b>Lab Schedule Biology 10L – Spring 2020</b>			
1/13	<b>Week 1:</b> Microscope safety/use Letter e slides	<u>Quiz</u>	
1/20	<b>Week 2:</b> Macromolecule Chemistry	Quiz 1 Microscopes & Safety	<b>NO CLASS</b>
1/27	<b>Week 3:</b> Cell Lab	Quiz 2 Macromolecules	
2/3	<b>Week 4:</b> Fermentation Lab	Quiz 3 Cells	
2/10	<b>Week 5:</b> Mitosis Lab	Quiz 4 Mitosis	<b>NO CLASS</b>
2/17	<b>Week 6:</b> Protein Synthesis/DNA	Quiz 5 Fermentation	
2/24	<b>Week 7:</b> Genetics Worksheet	Quiz 6 Protein Synthesis/DNA	
3/2	<b>Week 8:</b> Natural Selection	Quiz 7 Genetics	
3/9	<b>Week 9:</b> Disease Lab	Quiz 8 Natural Selection	
3/16	<b>Week 10:</b> Protist	Quiz 9 Diseases	
3/23	<b>Week 11:</b>		

	Pollination Video Intro to Pollination Project	Quiz 10 Protist
3/30	<b>Week 12:</b> Animal Diversity	Quiz 11 Pollination
4/13	<b>Week 13:</b> River Lab	Quiz 12 Animals
4/20	<b>Week 14:</b> Population Demographic	Quiz 13 River Lab
4/27	<b>Week 15:</b> <b>Pollination Project</b>	Quiz 14 Population Demographic
5/4	<b>Week 16:</b> Demography Lab Assign Carbon Footprint Worksheet	
5/11	<b>Week 17:</b> Carbon Footprint Lab Extra Credit Due	Quiz 15 Demography
5/18	<b>Week 18:</b>	Quiz 16 Carbon Footprint