

BIOLOGY 10L: Introduction to Life Science Lab

Spring 2022 Instructor: Ms. Karen Marks

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Lab section 51302: Thursday 1:00-3:50pm

Office Hours: M/W 12:30-1:30pm

T 3:30-4:30pm

Th 12:00-1:00pm

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 bookstore or on Canvas.
2. E-mail address. This can be obtained free through the school.

IV. ATTENDANCE

This class is strictly a laboratory class, meaning your attendance is important. Failure to regularly attend class will result in failure. Students cannot miss more than 4 labs total, and should only be missed for serious reasons, such as quarantining.

V. TESTS AND EVALUATIONS

A. Grading

Description	Points Possible
15 Lab Assignments (15 pts each)	225
17 Lab Quizzes (10 pts each)	170
Performance Art Project	50

Approximate Total Points = 445

B. Grading scale: 90% = A 80% = B 70% = C 60% = D 59% and below = F

At any point you can check your grades on Canvas through the Reedley College homepage: www.reedleycollege.edu I will regularly update the gradebook using Canvas. You are encouraged to check this site regularly and keep track of your own grades.

C. Quizzes will include multiple choice questions, true/false and matching questions. The information on the quizzes is taken from the labs we have performed in class and will be conducted every lab meeting (with exception of the first meeting.) There are no make-up quizzes except for quarantined students so attendance is vital.

VI. OTHER INFORMATION

Adds/Drops:

After the start of the semester, you must receive an add code to add the class. You must use your add code as soon as possible. Students who fail to use their add code to officially register for the class will not be permitted to stay.

You have until half way through the semester to drop. If you are enrolled in the class after the final drop deadline, you legally MUST BE GIVEN A GRADE even if you stop attending! Because of this, it is very important that if you want to drop, to drop yourself. Do not assume you have been automatically dropped.

Cancelled Classes:

If I must cancel a class meeting, you will be notified both on the door of the classroom with an official form as well as with a message sent from me via Canvas. I will NEVER leave a handwritten notice on the door cancelling class.

Technology/Cell Phones:

No cell phones to be used in class. I am aware that emergencies arise, so place your electronics on silent or vibrate mode. Distracting cell phone users will be asked to leave the class. Use of tablets and laptops are fine, provided they are not a distraction to other students. No technological devices (phones, laptops, tablets, smart watches, etc) may be used during any type of exam.

Laboratory Safety:

You will be given a Safety Rules sheet to sign in the lab, which delineates further safety procedures that you MUST follow. Please remember to clean up the lab after every exercise, as areas left dirty or messy at the end of the period will result in those student groups being **docked 5 points** for every offense. **No food, open beverages are allowed in the lab at any time.** Food and/or liquids in the laboratory is **never** allowed and may result in deduction of points or being asked to leave.

VII. TUTORING AND ASSISTANCE

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 (such as, but not limited to, copying/plagiarism, use of test banks, sharing work, and use of electronic devices during exams) is a very serious offense and will incur serious consequences such as receiving a zero on the assignment or being referred to the dean. See college catalog for details.

IX. ACCOMODATIONS

Students with diagnosed disabilities should contact the Disabled Students Programs and Services' (DSP&S). Please give me a copy of the letter you receive from DSP&S detailing class accommodations you may need. If you require accommodation for test-taking, please make sure I have the letter no less than three days before the test. 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.

BIOL 10L TENTATIVE SCHEDULE:

Week 1 - Jan 13	Lab safety, Microscope safety and use, Letter "e" slides	SLO Quiz
Week 2 – Jan 20	Macromolecule lab	Quiz 1 -safety/microscopes
Week 3 – Jan 27	Cell lab	Quiz 2 - macromolecules
Week 4 – Feb 3	Fermentation Lab	Quiz 3 - cells
Week 5 – Feb 10	Mitosis Lab	Quiz 4 - fermentation
Week 6 – Feb 17	Photosynthesis lab	Quiz 5 - mitosis
Week 7 – Feb 24	Protein synthesis and DNA lab	Quiz 6 – photosynthesis
Week 8 – Mar 3	Genetics Lab	Quiz 7 - protein synthesis and DNA
Week 9 – Mar 10	Natural Selection Lab	Quiz 8 – protein synthesis and DNA
Week 10 – Mar 17	Disease lab	Quiz 9 - natural selection
Week 11 – Mar 24	Protists Lab	Quiz 10 - Disease
Week 12 – Mar 31	Pollination Lab *Introduction to Pollination Project*	Quiz 11 – Protists
Week 13 – Apr 7	Animal Diversity	Quiz 12 - Pollination
Apr 14 – NO CLASS	SPRING BREAK – NO CLASS MEETING	NO CLASS
Week 14 – Apr 21	River Lab	Quiz 13 - Animals
Week 15 – Apr 28	Pollination Project	Quiz 14 – River Walk
Week 16 – May 5	Demography Lab *Carbon footprint worksheet assigned*	No Quiz
Week 17 – May 12	Carbon Footprint Lab	Quiz 15 - demography
Week 18 – May 19	Final Quiz – (Meeting from 1-2:50pm)	Quiz 16 – carbon footprint