

BIOLOGY 10L: Introduction to Life Science Lab

Summer 2016

Instructor: Andrew Strankman

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Course Number: 71610: Time: Mon-Thu 11:15-12:30pm; LFS 11 June 20th- July 28th

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. TESTS AND EVALUATIONS:

A. Grading

Description	Points Possible
15 Lab Assignments (15 pts. each)	225
15 Lab Quizzes (5 pts. each)	75
2 Writing Assignments (30 pts. each)	60
6x Lab Drawings (10 pts. each)	80
Total Points =	440

To calculate your grade, total all points earned and divide that number by the total points available (450). **Course grades are non-negotiable; Instructor reserves the right to curve individual tests and/or assignments. FINAL GRADES WILL NOT BE CURVED... ALSO, I DO NOT round up your grades to the next letter grade.**

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

- C. *Quizzes* may include multiple choice questions, true/false and matching questions. The information on the quizzes is taken from the labs we have performed in class. There are

no make-up quizzes.

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.

X. Laboratory Schedule

Week	Dates	Lecture (Book Chapter)
1	Mon 6/20	Syllabus, Scientific Method and Microscopes LR 1 Due
1	Tue 6/21	Cell Lab I
1	Wed 6/22	Cell Lab II LR 2 Due
1	Thu 6/23	Mitosis Lab Drawing 1 Due LR 3 Due
2	Mon 6/27	Photosynthesis/Leaf Lab LR 4 Due
2	Tue 6/28	DNA Extraction LR 5 Due
2	Wed 6/29	Genetics LR 6 Due
2	Thu 6/30	Essay #1 Research Day Drawing 2 Due
3	Mon 7/4	INDEPENDENCE DAY NO CLASS
3	Tue	Dot Game

	7/5	LR 7 Due
3	Wed 7/6	Disease Lab LR 8 Due
3	Thu 7/7	Essay #1 Final Draft Drawing 3 Due
4	Mon 7/11	Your Inner Fish I
4	Tue 7/12	Your Inner Fish II LR 9 Due
4	Wed 7/13	Animal Diversity I
4	Thu 7/14	Animal Diversity II Drawing 4 Due LR 10 Due
5	Mon 7/18	Food Inc. I
5	Tue 7/19	Food Inc. II LR 11 Due
5	Wed 7/20	Demography Lab LR 12 Due
5	Thu 7/21	Essay #2 Rough Draft Drawing 5 Due
6	Mon 7/25	River Walk or Zoo Trip
6	Tue 7/26	Microorganisms of Aquatic Systems LR 13 Due
6	Wed 7/27	Essay #2 Final Draft LR 14 Due
6	Thu 7/28	Final Lab Quiz Drawing 6 Due