

BIOL 1106 Laboratory
Biology I Majors

Western Texas College

I. Course description:

- A. This laboratory-based course accompanies Biology 1306, Biology for Science Majors I. Laboratory activities will reinforce study of the fundamental principles of living organisms including physical and chemical properties of life, organization, function, evolutionary adaptation. Concepts of cytology, reproduction, genetics, and scientific reasoning are included.
- B. Prerequisite/Co-requisite: MATH 1314 or equivalent.

II. Student Learning Outcomes:

- A. Describe the characteristics of life.
- B. Explain the methods of inquiry used by scientists.
- C. Identify the basic requirements of life and the properties of the major molecules needed for life.
- D. Compare and contrast the structures, reproduction, and characteristics of viruses, prokaryotic cells, and eukaryotic cells.
- E. Describe the structure of cell membranes and the movement of molecules across a membrane.
- F. Identify the substrates, products, and important chemical pathways in metabolism.
- G. Identify the principles of inheritance and solve classical genetic problems.
- H. Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.
- I. Describe the unity and diversity of life and the evidence for evolution through natural selection.
- J. Apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
- K. Use critical thinking and scientific problem solving to make informed decisions in the laboratory.
- L. Communicate effectively the results of scientific investigations

III. Assessment:

Grades will be derived from periodic quizzes and exams and lab participation is considered a factor in overall assessment.

- A. Four quizzes
- B. 2 Exams (Midterm and Final)
- C. Lab participation

IV. Required materials:

- A. Online Lab Courses: Science Interactive Kit SKU# SI-10131-BK-01

B. Campus Lab Courses: Exploring Biology in the Lab. Volume II. Murray P. Pendarvis, John L. Crawley. ISBN: 978161731839

V. Topics:

Lab	Topic
1	The Scientific Method
2	Scientific Notation and the Metric System
3	The Microscope
4	Acids, Bases, and pH
5	Organic Molecules
6	Cell Structure and Function
7	Enzymes
8	Diffusion and Osmosis
9	Photosynthesis
10	Cellular Respiration
11	Cell Division
12	Meiosis
13	Mendelian Genetics
14	DNA and the Genetic Code
15	Biotechnology and Forensics
16	Evolution

VI. Other Policies, procedures, and important dates. Please refer to the WTC Course Catalog for the following:

- A. Campus Calendar
- B. Final Exam schedule

- C. How to drop a class
- D. Withdrawal information
- E. Student Conduct/Academic Integrity
- F. Students with disabilities.