

Spokane Community College

COURSE LEARNING OUTCOMES (CLO) AND OUTLINE

Course Title: General Biology
Prefix and Course Number: BIOL& 160
Version Date: 3/16/2022

Course Learning Outcomes

By the end of this course, a student should be able to:

1. Explain the qualities and hierarchy of life.
2. Use the scientific method to develop and evaluate hypotheses and experiments. Collect and evaluate data as part of this method, including the construction and interpretation of graphs.
3. Demonstrate understanding of chemical reactions, the basics of organic chemistry, and the importance of water in biological systems.
4. Explain how molecules move in processes such as osmosis, diffusion, and other transport processes moving molecules into or out of a cell.
5. Identify cellular structures by appearance and function. Relate these qualities to the overall abilities of a cell.
6. Compare and contrast the common energetic process in living species including the processes of glycolysis, the citric acid cycle, the electron transport chain, and photosynthesis.
7. Compare and contrast the purpose and processes of mitosis and meiosis.
8. Solve problems using basic principles of heredity and relate the concept of heredity to evolution and its importance in biology.
9. Explain how genetic information is stored and how that information is used to create proteins resulting in physical characteristics.
10. Demonstrate skill using various laboratory techniques including microscopy.

Course Outline:

Assessment is conducted through exams, discussions, laboratory reports, and other assignments. Assessments are developed from lectures, texts, discussions, and laboratory exercises.

- I. Introduction to Biology
 - a. The Scientific Method
 - b. Properties of Life
 - c. Evolution
- II. Chemistry of Life
 - a. Chemical reactions and molecules
- III. Biological Macromolecules
 - a. Carbohydrates
 - b. Lipids
 - c. Proteins
 - d. Nucleic acids
- IV. Cells
 - a. Prokaryotes vs. eukaryotes
 - b. Eukaryotic cell structure
 - c. Membrane structure and function
 - d. Intercellular communication and Transport Processes
- V. Energy
 - a. Energy and ATP
- VI. Photosynthesis
 - a. Light-dependent reactions

