

Reviewed by: S. Lytle
Reviewed by: W. Berry
Reviewed by: G. Golling
Text update: April 2, 2014
Date Reviewed: Spring 2017
C&GE approved: April 17, 2017
Board approved: May 10, 2017
Semester effective: Spring 2018

Biology (BIOL) 1500 Fundamentals of Biology (3 Units) CSU: UC
[formerly Biology 1]

Advisory: Eligibility for English 1500 strongly recommended

Total Hours: 48 hours lecture

Catalog Description: This survey of the principles of biology includes cell theory, cell division, heredity, and anatomy and physiology of plants and animals. The course also includes a survey of the principle groups of plants and animals. This course is a non-majors life science course. Not open to students who have successfully passed BIOL 1510.

Type of Class/Course: Degree Credit

Text: Johnson, George B. *The Living World*. 8th ed. Boston: McGraw, 2014. Print.

Additional Required Materials: None

Course Objectives:

By the end of the course, a successful student will be able to

1. provide a general introduction to biology
2. develop the fundamental principles of biology as illustrated by plants and animals
3. develop in the student an understanding of the scientific method
4. develop the students' ability to make critical observations
5. develop in the students an understanding of their interaction with their biological environment

Course Scope and Content:

- Unit I The Study of Life
- A. The Science of Biology
 - B. The Scientific Process
- Unit II The Living Cell
- A. The Chemistry of Life
 - B. Molecules of Life
 - C. Cells
 - D. Energy and Life

- E. Photosynthesis
- F. How Cells Harvest Energy from Food

Unit III The Continuity of Life

- A. Mitosis
- B. Meiosis
- C. Foundations of Genetics
- D. Genetic Material
- E. How Genes Work

Unit IV The Evolution and Diversity of Life

- A. Evolution and Natural Selection
- B. Classification of Organisms
- C. Prokaryotes and Viruses
- D. Protists
- E. Fungi

Unit V Plant Life

- A. Evolution of Plants
- B. Plant form and Function

Unit VI Evolution of Animal Life

- A. Evolution of the Animal Phyla
- B. History of the Vertebrates
- C. How Humans Evolved

Unit VII Animal Life

- A. Circulation or
- B. Respiration or
- C. Digestion or
- D. Nervous System or
- E. Reproduction and Development

Unit VIII The Living Environment

- A. Populations and Communities
- B. Ecosystems
- C. Behavior and the Environment or
- D. How Humans Influence the Living World

Learning Activities Required Outside of Class:

The students in this class will spend a minimum of 6 hours per week outside of the regular class time doing the following:



1. Studying
2. Answering questions
3. Skill practice
4. Completing required reading
5. Problem solving
6. Written work

Methods of Instruction:

1. Assigned readings from text and selected references
2. Lecture and demonstration by instructor
3. Multimedia presentations
4. Class discussions

Methods of Evaluation:

1. Substantial writing assignments, including:
 - a. essay exams
 - b. term or other papers
2. Computational or non-computational problem-solving demonstrations, including:
 - a. exams
 - b. homework problems
 - c. quizzes
3. Other examinations, including:
 - a. multiple choice
 - b. matching items
 - c. true/false items
 - d. completion

Supplemental Data:

TOP Code:	040100- Biology
SAM Priority Code:	E: Non-Occupational
Funding Agency:	Y: Not Applicable
Program Status:	1: Program Applicable
Noncredit Category:	Y: Not Applicable
Special Class Status:	N: Course is not a special class

Basic Skills Status:	N: Not Applicable
Prior to College Level:	Y: Not Applicable
Cooperative Work Experience:	N: Course is not a part of a cooperative education program
Eligible for Credit by Exam:	No
Eligible for Pass/No Pass:	Yes