TAFTCOLLEGE

Reviewed by: S. Lytle
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Date Reviewed: Spring 2022
Textbook update: Fall 2024
C&GE approved: April 21, 2022
Board approved: May 11, 2022
Semester effective: Fall 2024

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

Advisory: Eligibility for English 1500 or 1501 strongly recommended

Hours and Units Calculations:
48 hours lecture. 96 Outside of class hours. (144 Total Student Learning Hours) 3 Units

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 principal 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*. 11th ed., McGraw-Hill, 2024.

Additional Required Materials: None

Course Objectives:

By the end of the course, a successful student will be able to
1. possess knowledge of general biological concepts.
2. be able to describe fundamental principles of biology as illustrated by plants and animals.
3. understand the scientific method.
4. be able to make critical observations.
5. understand the relationship between an organism and the biological environment.

Course Level Student Learning Outcomes

Local General Education Learning Outcomes

1. Develop an understanding of the relationship between science and other human behaviors.
2. Demonstrate the scientific method.

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. Recorded Video Lectures
3. PowerPoint presentations
4. Class discussions

Methods of Evaluation:

1. Substantial writing assignments, including:
   a. essay exams
   b. discussion posts
   c. term or other papers
   d. multimedia presentations
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

TAFTCOLLEGE

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
Discipline	Biological Sciences