

**BIO 14 Course Outline as of Fall 2023****CATALOG INFORMATION**

Dept and Nbr: BIO 14 Title: CURRENT ISSUES IN BIO

Full Title: Current Issues in Biology

Last Reviewed: 5/9/2022

Units	Course Hours per Week		Nbr of Weeks		Course Hours Total	
Maximum	3.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	6	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable

Grading: Grade or P/NP

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly:

**Catalog Description:**

In this non-majors course students will be introduced to the core principles of biology through the study of current issues in modern biology. Topics include ecology, evolution, anatomy, physiology, genetics, and molecular and cell biology.

**Prerequisites/Corequisites:****Recommended Preparation:**

Eligibility for ENGL 100 or ESL 100

**Limits on Enrollment:****Schedule of Classes Information:**

Description: In this non-majors course students will be introduced to the core principles of biology through the study of current issues in modern biology. Topics include ecology, evolution, anatomy, physiology, genetics, and molecular and cell biology. (Grade or P/NP)

Prerequisites/Corequisites:

Recommended: Eligibility for ENGL 100 or ESL 100

Limits on Enrollment:

Transfer Credit: CSU;UC.

Repeatability: Two Repeats if Grade was D, F, NC, or NP

## **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

<b>AS Degree:</b>	<b>Area</b>		Effective:	Inactive:
	C	Natural Sciences	Fall 2018	
	C	Natural Sciences	Fall 2006	Spring 2010
<b>CSU GE:</b>	<b>Transfer Area</b>		Effective:	Inactive:
	B2	Life Science	Fall 2018	
	B2	Life Science	Fall 2006	Spring 2010
<b>IGETC:</b>	<b>Transfer Area</b>		Effective:	Inactive:
	5B	Biological Sciences	Fall 2018	
	5B	Biological Sciences	Fall 2006	Spring 2010
<b>CSU Transfer:</b>	Transferable	Effective:	Fall 2018	Inactive:
<b>UC Transfer:</b>	Transferable	Effective:	Fall 2018	Inactive:

### **CID:**

### **Certificate/Major Applicable:**

Major Applicable Course

## **COURSE CONTENT**

### **Student Learning Outcomes:**

At the conclusion of this course, the student should be able to:

1. Apply the scientific method to investigating and evaluating biological phenomena.
2. Explain the application of the core principles of biology to current issues.

### **Objectives:**

At the conclusion of this course, the student should be able to:

1. Explain the scientific method and critically evaluate current scientific issues using this methodology.
2. Compare and contrast science and pseudoscience.
3. Assess the role of science in society.
4. Demonstrate knowledge of each of the following core principles of biology: ecology, evolution, anatomy, physiology, genetics, and molecular and cell biology.
5. Synthesize information from the core principles of biology and apply them to specific current issues in modern biology.

### **Topics and Scope:**

- I. Scientific Method Versus Other Methods of Decision-making
  - A. What is science and how is the scientific process conducted?
  - B. Science versus pseudoscience
  - C. Science's role in and influence on society
- II. Basic Principles of Ecology
  - A. Flow of energy and matter
  - B. Ecosystem structure and function

- C. Community structure and function
- D. Population structure, growth rates, and human population dynamics
- III. Principles of Evolution
  - A. Natural selection
  - B. Speciation
  - C. Relationship to biodiversity and extinction crises
- IV. Structure and Function of Cells
  - A. Prokaryotic versus eukaryotic cells
  - B. Molecular biology
  - C. Relationship to anatomy and physiology, genetics, and evolution
- V. Genetics and Inheritance
  - A. Molecular genetics
  - B. Mendelian genetics
  - C. Relationship to cell biology, evolution, and populations
- VI. Anatomy and Physiology of Plants and Animals
  - A. Structure and function of specific selected tissues, organs, organ systems, and organisms
  - B. Relationship to ecology, evolution, genetics, and disease mechanisms
- VII. Applications of the Above Topics to Current Events and Issues in Modern Biology

**Assignment:**

1. Assigned reading from text and/or instructor prepared material (10-30 pages/week)
2. Case studies relating to specific biological topics and their relationship to current events
3. Response papers analyzing current biological issues (2-4 pages each)
4. Oral report on a current biological issue
5. Quizzes (3-10)
6. Objective examinations including unit exams (2-4) and a comprehensive final exam (including essay questions)

**Methods of Evaluation/Basis of Grade:**

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Response papers
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Writing 5 - 30%
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**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Case studies
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Problem solving 5 - 30%
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**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Oral report
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Skill Demonstrations 0 - 10%
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**Exams:** All forms of formal testing, other than skill performance exams.

Quizzes, unit exams, and comprehensive final exam

Exams  
40 - 70%

**Other:** Includes any assessment tools that do not logically fit into the above categories.

Participation

Other Category  
0 - 10%

**Representative Textbooks and Materials:**

Principles of Biology. 3rd ed. Brooker, Robert, Widmaier, Eric, Graham, Linda and Stiling, Peter. McGraw Hill. 2021

Current Issues in Biology, Volume 6. Scientific American. Pearson. 2010 (classic)

Biology Today: An Issues Approach. 3rd ed. Minkoff, Eli and Baker, Pamela. Garland Science. 2003 (classic)

Instructor prepared materials