



BIOL 2 - Introduction to Human Biology

Catalog Description

Transfer Status: CSU/UC

Unit(s): 3.00

Lecture: 51.00 Contact hours/102.00 Out of class hours/153.00 Total hours/3.00 Unit(s)

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Course Description: This course is an introduction to the basic principles of biology, focusing on humans as biological organisms. Topics include chemistry, cell and tissue structure, human body structure and function, human genetics, heredity and evolution, and human ecology. An emphasis is placed on the application of principles to current issues, including common human diseases and the impact of humans on the world's ecosystems.

Objectives

Upon successful completion of this course, the student should be able to:

1. Explain and apply the scientific method to gain insight into the natural world.
2. Analyze the chemical and cellular organization associated with human tissues.
3. Describe the basic anatomy and primary functions of human organ systems and how they interact to maintain homeostasis.
4. Differentiate how human disease results from the interruption of normal organ system function.
5. Analyze the relationship between the genetic makeup and physical characteristics of the human body.
6. Critically evaluate sources for quality, relevance, and perspective for health information.
7. Describe how evolution helps us understand human physiology, diseases, and our connection to other living organisms.
8. Describe the impact of human activity on ecosystems.

Course Content

Topic Titles / Suggested Time Topic	
<u>Topics</u>	<u>Lecture</u>
	<u>Lec Hrs</u>
Introduction to the Scientific Method	2.00
The Human Position In the Tree of Life	1.00
Basic Inorganic and Organic Chemistry	3.00
Cellular and Tissue Organization	7.00
Introduction to the Cardiovascular System	2.00
Human Reproduction and Development	3.00
Basic Genetics and Inheritance	6.00
Introduction to the Biology of Cancer	2.00
Introduction to DNA and Biotechnology	3.00
Human Evolution	4.00
Humans and the Ecosystem	4.00
Introduction to the Immune System	2.00
Introduction to the Respiratory System	2.00
Introduction to the Digestive System	2.00
Introduction to the Urinary System	2.00
Introduction to the Muscular System	2.00
Introduction to the Nervous System	2.00
Information Literacy	2.00
	Total Hours: 51.00

Methods of Instruction

- A. Class Activities
- B. Discussion
- C. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
- D. Instructor Demonstrations
- E. Lecture
- F. Multimedia Presentations

G. Reading Assignments

Methods of Evaluation

- A. Exams/Tests
- B. Research Projects
- C. Homework
- D. Class participation
- E. Written Assignments
- F. Essays and research papers
- G. Class Discussion
- H. Group Participation

Examples of Assignments

Reading Assignments

1. Read the textbook section discussing the fundamental processes of the digestive system. In a 2-page essay, describe the basic functions performed by the digestive system. Include in your discussion where each of these processes occurs within the digestive system. Be prepared to present your findings in class.
2. Read the textbook section describing the cell cycle and discuss the implications of a failure in the regulatory mechanisms of the cell cycle. Be prepared to discuss your findings in class.

Writing Assignments

1. Write a 2-page essay describing the role of the kidney in the maintenance of homeostasis in the body. Submit your report to the instructor.
2. Write a 2-page essay that explains the proper design of an experiment needed to show the effectiveness of a medication in alleviating a physical symptom. The essay will include identifying the parts of an investigation and a critical analysis of the design. Submit your report to the instructor.

Out-of-Class Assignments

1. Watch the videos on mitosis and meiosis posted on the course website; describe the steps of each process in the worksheet posted on the course website; and write a paragraph comparing mitosis and meiosis. Submit your completed worksheet to the instructor.
2. Research and properly use ecological concepts to solve a problem related to altered agricultural ecosystems using scientific knowledge. Write a 5-page paper that addresses the principles required to explain the solution adequately. Submit your research paper to the instructor.

Recommended Materials of Instruction

Judith Goodenough. (2016). *Biology of Humans. Pearson, 6th.* 0134056671.
Grewal and Wakim. (2021). *Human Biology. LibreTexts, 2nd.* 97893700546.

Other Learning Materials

Supplementary material from current journals at instructors discretion.
Handouts at instructors discretion.

Minimum Qualifications

Biological Sciences (Masters Required)

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