

Biology for Non-Science Majors 1

Class

BIOL 1408

Provides a survey of biological principles with an emphasis on humans, including chemistry of life, cells, structure, function, and reproduction. Laboratory activities reinforce these principles.

Course Learning Objectives

Upon successful completion of this course, students will be able to"

1. Distinguish between prokaryotic, eukaryotic, plant and animal cells, and identify major cell structures.
2. Identify stages of the cell cycle, mitosis (plant and animal), and meiosis.
3. Interpret results from cell physiology experiments involving movement across membranes, enzymes, photosynthesis, and cellular respiration.
4. Apply genetic principles to predict the outcome of genetic crosses and statistically analyze results.
5. Describe karyotyping, pedigrees, and biotechnology and provide an example of the uses of each.
6. Identify parts of a DNA molecule, and describe replication, transcription, and translation.
7. Analyze evidence for evolution and natural selection.
8. Apply scientific reasoning to investigate questions, and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
9. Use critical thinking and scientific problem solving to make informed decisions in the laboratory.
10. Communicate effectively the results of scientific investigations.
11. Distinguish between prokaryotic, eukaryotic, plant and animal cells, and identify major cell structures.
12. Identify stages of the cell cycle, mitosis (plant and animal), and meiosis.
13. Interpret results from cell physiology experiments involving movement across membranes, enzymes, photosynthesis, and cellular respiration.
14. Apply genetic principles to predict the outcome of genetic crosses and statistically analyze results.
15. Identify the importance of karyotypes, pedigrees, and biotechnology.
16. Identify parts of a DNA molecule, and describe replication, transcription, and translation.
17. Analyze evidence for evolution and natural selection.

Required Textbooks

Houtman, Scudellari, and Malone. Biology Now with Physiology; 3rd edition, Norton, 2021 (with online access code)

Evaluation Standards

The final course grade will be based on the following activities:

1. Lecture exams and quizzes (50%)
2. Online tutorial assignments (15%)
3. Research project, group project, or other special assignment (10%)
4. Laboratory activities (25%)

A = 90 – 100%

B = 80 – 89%

C = 70 – 79%

D = 60 – 69%

F = 0 – 59%

Disabilities

ADA Statement:

Any student with a documented disability (e.g. learning, psychiatric, vision, hearing, etc.) may contact the Office on the Weatherford College Weatherford Campus to request reasonable accommodations. *Phone:* 817-598-6350 *Office Location:* Office Number 118 in the Student Services Building, upper floor. *Physical Address:* Weatherford College 225 College Park Drive Weatherford, TX.

Academic Integrity

Academic Integrity is fundamental to the educational mission of Weatherford College, and the College expects its students to maintain high standards of personal and scholarly conduct. Academic dishonesty of any kind will not be tolerated. Academic dishonesty includes, but is not limited to, cheating on an examination or other academic work, plagiarism, collusion, and the abuse of resource materials including unauthorized use of Generative AI. Departments may adopt discipline specific guidelines on Generative AI usage approved by the instructional dean. Any student who is demonstrated to have engaged in any of these activities will be subject to immediate disciplinary action in accordance with institutional procedures.

Lab Fee

\$24