Biology for Science Majors 2

Class
BIOL 1407

The diversity and classification of life will be studied, including animals, plants, protists, fungi, and prokaryotes. Special emphasis will be given to anatomy, physiology, ecology, and evolution of plants and animals. Laboratory activities will reinforce study of the diversity and classification of life, including animals, plants, protists, fungi, and prokaryotes.

Course Learning Objectives

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

1. Describe modern evolutionary synthesis, natural selection, population genetics, micro and macroevolution, and speciation.
2. Describe phylogenetic relationships and classification schemes.
3. Identify the major phyla of life with an emphasis on plants and animals, including the basis for classification, structural and physiological adaptations, evolutionary history, and ecological significance.
4. Describe basic animal physiology and homeostasis as maintained by organ systems.
5. Compare different sexual and asexual life cycles noting their adaptive advantages.
6. Illustrate the relationship between major geologic change, extinctions, and evolutionary trends.
7. Apply scientific reasoning to investigate questions, and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
8. Use critical thinking and scientific problem solving to make informed decisions in the laboratory.
9. Communicate effectively the results of scientific investigations.
10. Demonstrate knowledge of modern evolutionary synthesis, natural selection, population genetics, micro and macroevolution, and speciation.
11. Distinguish between phylogenetic relationships and classification schemes.
12. Identify the major phyla of life with an emphasis on plants and animals, including the basis for classification, structural and physiological adaptations, evolutionary history, and ecological significance.
13. Describe basic animal physiology and homeostasis as maintained by organ systems.
14. Compare different sexual and asexual life cycles noting their adaptive advantages.
15. Illustrate the relationship between major geologic change, extinctions, and evolutionary trends.

Required Institutional Core Learning Outcomes

Communication (COM), Critical Thinking (CT), Empirical and Quantitative Reasoning (EQR), and Teamwork (TW)

Required Textbooks

Textbook: Raven, Johnson, Mason, Losos, and Singer; *Biology*, Twelfth Edition, McGraw-Hill, 2020.

Online tutorial: McGraw-Hill Connect / LearnSmart (access code required – includes e-book version of the required textbook)

Lab manual: Vodopich/Moore and Dolphin/Vleck, *BIOL 1406/1407 Biology* Laboratory Manual, Special Edition for Weatherford College, McGraw-Hill Companies Inc., 2017.

Evaluation Standards

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

1. Performance on incremental exams (40%)
2. Performance on comprehensive final exam (10%)
3. Performance on online tutorial assignments (15%)
4. Completion of a research project, group project, or other special assignment (10%)
5. Performance on all required 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