General Zoology (for Majors)

Fundamental biological concepts relevant to animals, including systematics, evolution, structure and function, cellular and molecular metabolism, reproduction, development, diversity, phylogeny, and ecology. (This course is intended for science majors.) Three hours lecture and three hours lab per week.

Course Learning Objectives

Upon successful completion of the lecture component of this course, students will be able to:

1. Compare and contrast the structures, reproduction, and characteristics of animals.
2. Describe the characteristics of life and the basic properties of substances needed for life.
3. Identify the principles of inheritance and solve classical genetic problems.
4. Describe phylogenetic relationships and classification schemes.
5. Identify the major phyla of life with an emphasis on animals, including the basis for classification, structural and physiological adaptations, evolutionary history, and ecological significance.
6. Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.
7. Identify the substrates, products, and important chemical pathways in respiration.
8. Describe the unity and diversity of animals and the evidence for evolution through natural selection.
9. Describe the reasoning processes applied to scientific investigations and thinking.
10. Describe basic animal physiology and homeostasis as maintained by organ systems.
11. Describe modern evolutionary synthesis, natural selection, population genetics, micro and macroevolution, and speciation.
12. Describe the structure of cell membranes and the movement of molecules across a membrane.

Upon successful completion of the lab component of this course, students will:

1. Apply scientific reasoning to investigate questionsand utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
2. Use critical thinking and scientific problem-solving to make informed decisions in the laboratory.
3. Communicate effectively the results of scientific investigations.
4. Compare and contrast the structures, reproduction, and characteristics of animals.
5. Describe the characteristics of life and the basic properties of substances needed for life.
6. Identify the principles of inheritance and solve classical genetic problems.
7. Describe phylogenetic relationships and classification schemes.
8. Identify the major phyla of life with an emphasis on animals, including the basis for classification, structural and physiological adaptations, evolutionary history, and ecological significance.
9. Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.
10. Identify the substrates, products, and important chemical pathways in respiration.
11. Describe the unity and diversity of animals and the evidence for evolution through natural selection.
12. Describe the reasoning processes applied to scientific investigations and thinking.
13. Describe basic animal physiology and homeostasis as maintained by organ systems.
14. Describe modern evolutionary synthesis, natural selection, population genetics, micro and macroevolution, and speciation.
15. Describe the structure of cell membranes and the movement of molecules across a membrane.

Required Institutional Learning Core Learning Outcomes (ICLO):

Communication (COM), Critical Thinking (CT), Empirical & Quantitative Reasoning (EQR),

Required Textbooks

Text Book: Animal Diversity, 7th ed. 2015. Hickman, C.L., Roberts, L. S., Keen, S. L., Larson, A., and Eisenhour, D. J. McGraw-Hill Education. 492 pp. with Access Code ISBN: 978-1-2596367-3-8

Lab Manual: Laboratory Studies in Animal Diversity, 7th ed. Hickman, C.L., Roberts, L. S., Keen, S. L., Larson, A., and Eisenhour, D. J. McGraw-Hill Education. 382 pp. ISBN: 978-0-07-765517-4

Evaluation Standards

In lecture there will be 4 lecture tests, lecture quizzes, a special assignment, and a comprehensive final exam (inclusive of all lecture and lab materials). In lab, there will be lab quizzes, other assignments, and 2 lab practicals. The other assignments will consist of lab reports based on experiments or simulations done in lab.

Lecture

- Tests (4 @ 100 pts each) 40%
- Comprehensive final exam 15%
- Lecture Quizzes 5%
- Project 10%
- Lab Grade (weighted) 30%
- Total Course Grade 100%

Laboratory Grade

- Lab Quizzes 20%
- Other Assignments 30%
- Lab Practicals (2 for 25% each) 50%
- Total 100%

LETTER GRADE DETERMINAITON:

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.