BIOL A182: ZOOLOGY

Item	Value
Curriculum Committee Approval Date	08/04/1975
Top Code	040700 - Zoology, General
Units	3 Total Units
Hours	54 Total Hours (Lecture Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Open Entry/Open Exit	No
Grading Policy	Standard Letter (S)
Associate Arts Local General Education (GE)	• Area 5 Physical and Biological Sciences, Scientific Inquiry, Life Science (OB)
Associate Science Local General Education (GE)	• Area 5 Physical and Biological Sciences, Scientific Inquiry, Life (OSB)
California General Education Transfer Curriculum (Cal-GETC)	• Cal-GETC 5B Biological Sciences (5B)
Intersegmental General Education Transfer Curriculum (IGETC)	• IGETC 5B Biological Sciences (5B)
California State University General Education Breadth (CSU GE-Breadth)	• CSU B2 Life Science (B2)

Course Description

Includes basic aspects of phylogeny, morphology, physiology and behavior of vertebrate and invertebrate animals. Emphasizes comparing the variety of mechanisms animals have evolved to solve common biological problems. Enrollment Limitation: BIOL A182H; students who complete BIOL A182 may not enroll in or receive credit for BIOL A182H. PREREQUISITE: Successful completion of a course at the level of intermediate algebra or Appropriate OCC math placement. ADVISORY: BIOL A180; Any college level Biology and/or Chemistry course. Transfer Credit: CSU; UC. C-ID: BIOL 150 when BIOL A182L is also completed.**C-ID:** BIOL 150 when BIOL A182L is also completed.

Course Level Student Learning Outcome(s)

1. Describe the morphological and molecular characteristics used to identify and distinguish major animal groups.
2. Use evolution and speciation modes to explain the various adaptations animals possess to survive and reproduce in their environment and how the animal groups are diverse yet share a common ancestor.
3. Discuss the anatomy and physiology of various animal groups to explain how they function in their environment.

Course Objectives

- 1. Identify and discriminate between the major animal taxa and be able to construct/interpret a phylogenetic tree.
- 2. Compare the variety of mechanisms that animals have evolved to solve common biological problems.
- 3. Identify and relate the stages of embryological development.
- 4. Compare reproductive strategies and describe their significance.
- 5. Identify and describe structures in animals from a variety of phyla and relate them to their functions, including nutrient acquisition, circulations, respiration, movement, nervous and sensory function, and reproduction.
- 6. Show examples of homeostatic regulation in physiological systems.
- 7. Describe the origin of multicellularity and evidence of evolution throughout the animal kingdom.
- 8. Describe the mechanisms of evolutionary change, including speciation.
- 9. Demonstrate critical thinking/scientific reasoning skills.
- 10. Demonstrate knowledge of the anatomy, behavior, and general ecology of various native animals through personal observations.
- 11. Demonstrate knowledge of the anatomy, physiology and life history of a native animal through research.

Lecture Content

Course Topics: Overview of living organisms Including single-celled ancestor to animals Evolution Mechanisms of evolutionary change Mutations, Gene Flow, Genetic Drift, Nonrandom Mating, and Natural Selection Phylogeny/Evolutionary History of Animal Taxa Principles of population genetics Speciation and Extinction Animal Systems: Anatomy and Physiology Integument, skeletons, locomotion Feeding and digestion Circulation Respiration Excretion Homeostasis Nervous and hormonal systems Sensory systems Reproduction Embryology Life cycles Animal behavior Major Animal Taxa Introduced (or equivalent groups if nomenclature/phylogenies change): Porifera Cnidaria and Ctenophora Protostomes: Lophotrochozoans Platyhelminthes, Brachiopoda, Annelida, Mollusca, etc. Protostomes: Ecdysozoans Nematoda, Arthropoda (Chelicerata, Crustacea, Hexapoda, Myriapoda), etc. Deuterostomes Echinodermata, Hemichordata, Chordata Groups within Chordata Agnatha, Chondrichthyes, Actinopterygii, Amphibia, Amniotes: anapsida, diapsida, synapsida

Method(s) of Instruction

- Lecture (02)

Instructional Techniques

1. Instructor presentation and summarization of critical course material. 2. Instructor-aided exploration and application of concepts. 3. PowerPoint, video, or other multimedia presentations of concepts introduced. 4. In-class activities to promote active learning and student involvement during lecture. 5. The creation of a friendly environment where student-to-student and student-to-faculty interaction is encouraged (through interaction during lecture activities, office hours, etc.)

Reading Assignments

Reading Assignments (108 hours over 16 weeks) Assigned reading from text (2.5 hours per week)

Writing Assignments

Students will complete at least one multi-page out-of-class writing assignment throughout the semester on a topic relevant to the course

material. Exams in the course will include at least some short answer or essay questions that require student composition of answers. (2.25 hours per week)

Out-of-class Assignments

Students will conduct some form of observation on various animals and construct a report about their observations. Students will also be required to research the anatomy, physiology, behavior and other aspects of an animal and contruct a report on their findings. (2 hours per week)

Demonstration of Critical Thinking

Exams that include essay-style questions. Optional out-of-class assignments to keep students up to date on the material

Required Writing, Problem Solving, Skills Demonstration

Students will complete at least one multi-page out-of-class writing assignment throughout the semester on a topic relevant to the course material. Exams in the course will include at least some short answer or essay questions that require student composition of answers.

Eligible Disciplines

Biological sciences: Master's degree in any biological science OR bachelor's degree in any biological science AND master's degree in biochemistry, biophysics, or marine science OR the equivalent. Master's degree required.

Textbooks Resources

1. Required Miller, S./Tupper, T.. Zoology, 12 ed. Chicago: McGraw Hill, 2023 Rationale: Zoology, ISBN10: 126072218X | ISBN13: 9781260722185, By Stephen Miller and Todd A. Tupper, 12th edition (2023)

Other Resources

1. Various online resources related to biology and zoology provided by the instructor