

# ZOOLOGY

## Course Description

This course provides a survey of the animal kingdom, including morphology, physiology, life cycles and comparative anatomy of representative animals of each phylum. The first part of the course considers anatomical and physiological changes due to evolutionary pressures. The latter part of the course focuses on taxonomy and ecology as they relate to local wildlife. It is recommended for those pursuing a career in zoology, wildlife sciences, ecology, forestry and fisheries.

## Learning Outcomes

1. List and describe the five recognized kingdoms, classifying animals accordingly.
2. Describe animal tissues and body parts.
3. Explain Darwin's theory of evolution.
4. Interpret an evolutionary tree and define monophyletic, diphyletic and polyphyletic.
5. Explain processes needed to maintain homeostasis in single-celled organisms.
6. Describe the characteristics of the classes in Phylum Sarcomastigophora.
7. Identify representative organisms from the Phyla Sarcomastigophora and Ciliophora.
8. Discuss the differences between radial and bilateral symmetry.
9. Describe the life cycles of *Fasciola hepatica* and *Clonorchis sinensis*.
10. Describe and compare the structures of pseudocoeloms, acoeloms and eucoeloms.
11. Describe the life cycles of *Ascaris lumbricoides*, *Enterobius vermicularis*, *Wuchereria bancrofti*, *Necator americanus* and *Trichinella spiralis*.
12. Explain the concept of torsion.
13. Identify the organs of a common bivalve.
14. Describe the life cycles of fresh water bivalves.
15. Identify the structures and organs of a squid.
16. Explain the physiological reasoning for the body structure of a common earthworm.
17. Compare and contrast setae and parapodia as seen in members of the annelids.
18. Identify the structures and organs of an earthworm.
19. Explain the reasons of arthropod success.
20. Discuss and describe the stages of complete and incomplete metamorphosis.
21. Describe pentaradial symmetry and the endoskeletons of the echinoderms.
22. Describe the water vascular system of echinoderms.
23. Identify the structures and organs of a sea star.
24. Describe the characteristics of the superclass Agnatha.
25. Explain the effects of adaptive radiation on fishes.
26. Describe the lifecycle of amphibians and their necessity to be near water.
27. Identify the structures and organs of a frog.
28. Discuss the reptilian adaptations that allowed them to move on land.
29. Identify the structures and organs of a snake.
30. Explain the efficiency of gas exchange in birds.
31. Discuss theories of navigation in birds during migration.
32. Discuss the specialized adaptations for endothermic regulation.
33. Identify specimens of representative mammals from this region.
34. Identify the structures, anatomy and internal organs of a mammal.