

Programme	BS Zoology	Course Code	ZOOL-210	Credit Hours	1
Course Title	Lab. Animal Form And Function–II				
Course Introduction					
<p><i>The Objectives of the courses are:</i></p> <ol style="list-style-type: none"> To teach about animals' diversity adapted in different strategies' for performance of their similar functions through modifications in body parts in past and present times. To impart understanding of diverse strategic structural adaptations in each of the functional systems of nutrition, excretion, osmoregulation and reproduction and development for effective survival in their specific conditions. To understand the organ systems, their specialization and coordination with each other and constantly changing internal and external environment, inside and outside the animal's body. To embrace the phenomena in basic structure of each system that determines its particular function. 					
Learning Outcomes					
<p>On the completion of the course, the students will:</p> <ol style="list-style-type: none"> Acquire the concept that for the performance of a function for example exchange of respiratory gases the different forms are adapted in the environments e.g. gills in aquatic and lungs in terrestrial environment. Understand that diverse forms adapted to perform the same functions are because of the different past and present conditions. Solve of emergence of diversity of forms for the performance of similar function. Analyze the requirements of diverse forms for the performance of similar function in their past and present needs. Evaluate the adaptations in forms for its efficiency in managing the function in differing situations in the past and present times. Demonstrate that a form is successfully adapted to perform a function adequately and successfully. 					
Course Content					Assignments/Readings
Week 1	Dissection and study of circulatory system in an invertebrate				
Week 2	Dissection and study of circulatory system in a vertebrate representative.				
Week 3	Dissection and study of digestive system in invertebrate representative.				
Week 4	Dissection and study of digestive system in a vertebrate representative.				
Week 5	Dissection and study of excretory system in an invertebrate representative.				
Week 6	Dissection and study of excretory system in a vertebrate representative.				
Week 7	Dissection and study of male and female reproductive system in invertebrates				
Week 8	Dissection and study of male and female reproductive system in vertebrates.				
Week 9	Thermoregulatory adaptations of Polar bear, Snow leopard, Harbor seal				
Week 10	Thermoregulatory adaptations of Whales, Penguins, Humming bird, Camel				

Week 11	Thermoregulatory adaptations of Crocodile, Kangaroo rat, Elephant seal	
Week 12	Thermoregulatory adaptations of Sea turtle, Fennec fox, Fresh water tuna, Sharks, Prawns	
Week 13	Osmoregulatory adaptations of Polar bear, Snow leopard, Harbor seal	
Week 14	Osmoregulatory adaptations of Whales, Penguins, Humming bird, Camel	
Week 15	Osmoregulatory adaptations of Crocodile, Kangaroo rat, Elephant seal	
Week 16	Osmoregulatory adaptations of Sea turtle, Fennec fox, Fresh water tuna, Sharks, Prawns	

Textbooks and Reading Material

Text Books:

1. Miller, S.A. and Harley, J.P., 2019. Zoology, 11th Ed. (International), Singapore: McGraw-Hill.

Reference Books:

1. Pechenik, J.A. 2013. Biology of Invertebrates, 4th Ed. (International), Singapore: McGraw-Hill.
2. Hickman, C.P., Roberts, L.S., Larson, A. 2004. Integrated Principles of Zoology, 11th Ed. (International), Singapore: McGraw-Hill.
3. Campbell, N.A. 2002. Biology, 6th Ed. Menlo Park, California: Benjamin/Cummings Publishing Company, Inc.
4. Kent, G.C., Miller, S. 2001. Comparative Anatomy of Vertebrates. New York: McGraw-Hill.
5. Hickman, C.P., Kats, H.L. 2000. Laboratory Studies in Integrated Principles of Zoology. Singapore: McGraw-Hill.

Teaching Learning Strategies

Teaching will be a combination of class lectures, class discussions, and group work. Short videos/films will be shown on occasion.

Assignments: Types and Number with Calendar

Group Presentations:

- The sessional work will be a combination of written assignments, class quizzes, presentation, and class participation/attendance