

**Institute of Zoology  
Faculty of Life Sciences  
University of the Punjab, Lahore  
Course Outline**



<b>Programme</b>	BS Zoology	<b>Course Code</b>	ZOOL-204	<b>Credit Hours</b>	1
<b>Course Title</b>	<b>Lab. Animal Form And Function- I</b>				
<b>Course Introduction</b>					
<p><i>The Objectives of the courses are:</i></p> <ol style="list-style-type: none"> <li>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.</li> <li>To impart understanding of diverse strategic structural adaptations in each of the functions of integumentary, skeletal, muscular, nervous and sensory, endocrine, circulatory and respiratory systems for effective survival in their specific conditions.</li> <li>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.</li> <li>To embrace the phenomena in basic structure of each system that determines its particular function.</li> </ol>					
<b>Learning Outcomes</b>					
<p>On the completion of the course, the students will:</p> <ol style="list-style-type: none"> <li>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.</li> <li>Understand that diverse forms adapted to perform the same functions are because of the different past and present conditions.</li> <li>Solve of emergence of diversity of forms for the performance of similar function.</li> <li>Analyze the requirements of diverse forms for the performance of similar function in their past and present needs.</li> <li>Evaluate the adaptations in forms for its efficiency in managing the function in differing situations in the past and present times.</li> <li>Demonstrate that a form is successfully adapted to perform a function adequately and successfully.</li> </ol>					
<b>Course Content</b>					<b>Assignments/Readings</b>
<b>Week 1</b>	Study of brains in different animals in relation to complexity of functions				
<b>Week 2</b>	Study of human brain model and different areas eliciting behaviours				
<b>Week 3</b>	Study of insect chitin and fish scale				
<b>Week 4</b>	Study of amphibian skin and reptilian scales				
<b>Week 5</b>	Study of feathers and mammalian skin				
<b>Week 6</b>	Study of skeleton of Labeo ( <i>Labeo rohita</i> )				
<b>Week 7</b>	Study of skeleton of Frog ( <i>Hoplobatrachus rigerinus</i> )				
<b>Week 8</b>	Study of skeleton of Varanus ( <i>Varanus bengalensis</i> )				
<b>Week 9</b>	Study of skeleton of fowl ( <i>Gallus gallus domesticus</i> )				
<b>Week 10</b>	Study of skeleton of rabbit ( <i>Oryctolagus cuniculus</i> )				
<b>Week 11</b>	Notes on adaptations of skeletons to their function.				

<b>Week 12</b>	<b>Earthworm or leech;</b> cockroach, freshwater mussel, Channa or Catla catla or Labeo or any other local fish, dissections to show endocrine system, as per availability.	
<b>Week 13</b>	<b>Earthworm or leech;</b> frog, pigeon and rat or mouse and rabbits dissections to show endocrine system, as per availability.	
<b>Week 14</b>	<b>Earthworm or leech;</b> cockroach, freshwater mussel, Channa or Catla catla or Labeo or any other local fish, dissections to show nervous system, as per availability.	
<b>Week 15</b>	<b>Earthworm or leech;</b> frog, pigeon to show nervous system, as per availability.	
<b>Week 16</b>	<b>Earthworm or leech;</b> mouse and rabbits dissections to show nervous system, as per availability.	
<b>Textbooks and Reading Material</b>		
<b>Text Books:</b>		
1. Miller, S.A. and Harley, J.P., 2019. Zoology, 11 <sup>th</sup> Ed. (International), Singapore: McGraw-Hill.		
<b>Reference Books:</b>		
1. Pechenik, J.A. 2013. Biology of Invertebrates, 4 <sup>th</sup> Ed. (International), Singapore: McGraw-Hill.		
2. Hickman, C.P., Roberts, L.S., Larson, A. 2004. Integrated Principles of Zoology, 11 <sup>th</sup> Ed. (International), Singapore: McGraw-Hill.		
3. Campbell, N.A. 2002. Biology, 6 <sup>th</sup> Ed. Menlo Park, California: Benjamin/Cummings Publishing		
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.		
<b>Teaching Learning Strategies</b>		
Teaching will be a combination of class lectures, class discussions, and group work. Short videos/films will be shown on occasion.		
<b>Assignments: Types and Number with Calendar</b>		
<b>Group Presentations:</b>		
The sessional work will be a combination of written assignments, class quizzes, presentation, and class participation/attendance		
<b>Assessment</b>		
<b>As per University rules</b>		