

<b>Semester:</b>	08		
<b>Course Code:</b>	ZOOL 42912		
<b>Course Name:</b>	Environmental Physiology		
<b>Credit Value:</b>	02		
<b>Status:</b>	Optional		
<b>Prerequisite:</b>	ZOOL 22732		
<b>Corequisite:</b>	None		
<b>Hourly Breakdown:</b>	Theory	Practical	Independent Learning
	25	15	60
<b>Intended Learning Outcomes:</b>			
After completion of this course unit, the student will be able to:			
<ol style="list-style-type: none"> <li>1. explain specific environmental problems faced by animals living in different types of habitats,</li> <li>2. discuss physiological strategies adopted by animals for specific environmental problems emphasizing mechanistic basis of adaptations, and</li> <li>3. assess responses of animals to selected environmental stresses under laboratory conditions, analyze data and interpret the results in a scientific manner.</li> </ol>			
<b>Course Content:</b>			
Specific problems in different types of environments and physiological adaptations of animals for survival: Strategies to survive in hypoxic and anoxic conditions. Sensory issues and adaptations in freshwater, marine, brackish water, and terrestrial environments. Thermal adaptation: temperature relations of ectotherms and endotherms in cold and hot environments; temperature strategies of heterotherms; dormancy in unfavorable ambient temperatures. Ionic and osmotic adaptation in freshwater, marine, brackish water and hypersaline water and terrestrial environments. Nitrogen waste excretion strategies. Climate change and physiological adaptations of animals.			
Laboratory practical sessions on assessment of hypoxic conditions and thermal, pH, and osmotic stresses to selected animal groups.			
<b>Teaching /Learning Methods:</b>			
A combination of lectures, laboratory practical sessions, computer-based learning, self-studies, presentations and group discussions.			
<b>Assessment Strategy:</b>			
Continuous assessment and end of semester examination. Percentage given for each sub-component indicates the percent contribution to the final marks.			
Continuous Assessment 30 %		Final Assessment 70 %	
Details:		Theory	Practical
Assignments	10 %	70 %	-
Practical reports	20 %		-
<b>Recommended Readings:</b>			
<ol style="list-style-type: none"> <li>1. Willmer, P., G. Stones &amp; I. Johnston (2009). Environmental Physiology of Animals, Wiley-Blackwell Publishers</li> <li>2. Withers, P. C. (1992). Comparative Animal Physiology. Saunders College publishing. New Jersey</li> <li>3. Recently published scholarly review articles on physiological adaptation of animals.</li> </ol>			