

Name of the Programme: M. Sc. Zoology

Course Code: ZOO-528

Title of the Course: Environmental Physiology (Practical)

Number of Credits: 01

Effective from AY: 2023-24

Pre-requisites for the Course:	Basic knowledge of Animal Physiology, environmental science and biochemistry	
Course Objectives:	1. To validate experimentally the physiological outcomes on exposure to various stressor 2. To provide hands on training to study how animals behave during different stress conditions 3. To analyze and extrapolate the different biochemical and physiological parameters of animals that may get affected during environmental challenges in the natural environment.	
Content:	Effect of thermal stress on the excretory rates in bivalves/fish. Effect of salinity stress on the respiratory rates of bivalves/fish. Effect of salinity acclimation in the osmo-regulatory processes of mud crab / fish / bivalves. Effect of thermal stress on the carbohydrate metabolism of bivalve/fish. Effect of salinity stress on the membrane fluidity of gill epithelial cells of mud crab /bivalve/fish.	15 x 2 hours
Pedagogy:	Practicals /tutorials/self-study/videos/presentations/mini projects/Group activities	
References/ Readings:	1. P. W. Hochachka and G. N. Somero, Biochemical Adaptation, UK, Oxford University Press, 2002. 2. P. Wilmer, G. Stone and I. A. Johnston, Environmental Physiology. of Animals, USA, Wiley Blackwell Publishing Co, 2004. 3. S. Nielsen, Animal Physiology: Adaptation and Environment, Cambridge, Cambridge University Press,1997.	
Course Outcomes:	The Learner will 1. Analyze the effect of environmental stressors on physiological response of animals 2. Validate the effect of stress on altered membrane fluidity 3. Apply a range of practical skills to study environmental physiology 4. Design experiments to study physiology of animals during environmental stress	