

Subject card

Subject name and code	Ecophysiology of marine animals - lecture, PG_00054213						
Field of study	Oceanography						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
Education level	Master's studies		Subject group		Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	1		Language of instruction		Polish		
Semester of study	1		ECTS credits		3.0		
Learning profile	academic		Assessment form		exam		
Conducting unit	Laboratory of Ecophysiology and Bioenergetics -> Department of Marine Ecology -> Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. Monika Normant-Saremba				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	30		8.0		38.0	76
Subject objectives	Learning about the basic life processes of marine animals, as well as behavioral and physiological adaptations to the environment and various changes occurring in it.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[OCEANMU2-W04] knows and understands the latest research trends in the field of oceanography as well as the possibilities of practical application of scientific achievements		Knows and understands in-depth the course of complex physiological processes in animals living in the marine environment and the coastal zone, as well as their dependence on changes taking place in the environment.		[SW4] test/exam - oral or written		
	[OCEANMU2-W03] knows and understands research methods used in oceanography and related sciences		Knows and understands in-depth research methods used in ecophysiological studies of marine animals.		[SW4] test/exam - oral or written		
	[OCEANMU2-W02] knows and understands complex processes and phenomena occurring in the marine environment, with particular emphasis on the coastal zone, as well as complex relationships between living and non-living elements of the aquatic environment		Knows and understands in-depth the latest research trends in the physiology of marine animals, as well as the possibilities of practical application of scientific achievements.		[SW4] test/exam - oral or written		

Subject contents	The lecture topics include the following issues: introduction to ecophysiology, food consumption and assimilation, excretion, water-ion regulation, respiration and circulation, energy metabolism, energy value and biochemical composition, energy balance and individual production, control and regulation of physiological functions, adaptation of animals to the environment and changes occurring in it, practical application of ecophysiological research results - behavioral and physiological biomarkers in diagnostics, environmental monitoring and forecasting changes, ethics in physiological research - limiting the number of animals in research, their pain and suffering.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Test/ exam	51.0%	100.0%
Recommended reading	Basic literature	Hochachka P. W., Somero G. N., 1973. Strategies of Biochemical Adaptation. W.B. Saunders Company, Philadelphia. Prus T., 1975. Chapter 5: Calorimetry and Body Composition, 5A Measurement of calorific value using Phillipson microbomb calorimeter. In: Grodzinski In., Klekowski R.Z., Duncan A. (eds), Methods for Ecological Bioenergetics. IBP Handbook No. 24, Blackwell Scientific Publications, 149- 160. Schmidt-Nielsen K., 1997. Animal Physiology - Adaptation to Environment. 5th Edition, Cambridge University Press. Solan M., Whiteley N.M., 2016. Stressors in the Marine Environment. Physiological and ecological responses; societal implications. Oxford University Press. Willmer, P., Stone, G., Johnston, I., 2000. Environmental Physiology of Animals. Blackwell Science Ltd.	
	Supplementary literature	Harris, R.R., Aladin, N.V., 1997. The ecophysiology of osmoregulation in Crustacea. W: Hazon, N., Eddy, F.B., Flik, G. (eds.), Ionic Regulation in Animals. Springer, Berlin, 1-25. Kay I., 1998. Introduction to Animal Physiology. BIOS Scientific Publishers Limited.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Tolerance and physiological stress zones, acclimation, acclimatization and adaptation, physiological phenotypic plasticity, conformity and regulation, physiological processes and body mass, biological rhythms, homeostasis, reception and processing of stimuli from the environment, regulation and coordination of chemical processes in cells and tissues, digestion and food assimilation efficiency, respiration, ventilation, heart rate and oxygen transport, aerobic and anaerobic metabolism, excretion of metabolic products, maintaining water-ion balance, individual production, behavioral and physiological indicators of animal condition and of environmental changes.		
Work placement	Not applicable		

Document generated electronically. Does not require a seal or signature.