

Subject card

Subject name and code	Basic physiology of aquacultured invertebrates - lectures, PG_00075875						
Field of study	Aquaculture – Business And Technology						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2026/2027		
Education level	Bachelor’s studies		Subject group				
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	3		ECTS credits		1.0		
Learning profile	practical		Assessment form		credit		
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	15.0	0.0	0.0	0.0	0.0	15
	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	15		10.0		0.0	25
Subject objectives	The aim of the course is to familiarize the student with the basic physiological processes of aquatic invertebrates used in aquaculture and the influence of various biotic and abiotic factors on these processes.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[AKWAL3_W04] knows and understands the principles of optimization of breeding methods for aquatic invertebrates, and has acquired theoretical and practical knowledge of the diagnostic methods used		Knows and understands the course of basic physiological processes, their connection with the optimization of breeding methods of aquatic invertebrates, and has acquired theoretical and practical knowledge of the diagnostic methods used.		[SW4] test/exam - oral or written		
Subject contents	Food consumption and assimilation.						
	Excretion of metabolic products.						
	Osmo- and ionoregulation.						
	Respiration and energy metabolism.						
	Biochemical composition and energy value.						
	Energy balance and individual production.						
	Biotic and abiotic factors determining the rate of physiological processes and individual production.						

Prerequisites and co-requisites	Knowledge of systematics and basic biology and ecology of farmed invertebrates.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Test/ exam	51.0%	100.0%
Recommended reading	Basic literature	Barnabe G., 1994. Aquaculture: Biology And Ecology Of Cultured Species (Ellis Horwood series in aquaculture and fisheries support). CRC Press. Klekowski R.Z., Fischer Z., 1993. Bioenergetyka Ekologiczna Zwierząt Zmiennocieplnych. PAN, Wydział II Nauk Biologicznych, Warszawa. Schmidt-Nielsen K., 2008. Fizjologia Zwierząt. Adaptacja do środowiska. Wydawnictwo Naukowe PWN, Warszawa.	
	Supplementary literature	Willmer, P., Stone, G., Johnston, I., 2000. Environmental Physiology of Animals. Blackwell Science Ltd.	
	eResources addresses		
	Example issues/ example questions/ tasks being completed	Tolerance and physiological stress zones, acclimation, acclimatization and adaptation, physiological phenotypic plasticity, conformism and regulation, physiological processes and body mass, homeostasis, digestion and food assimilation efficiency, respiration, ventilation, heart rate and oxygen transport, aerobic and anaerobic metabolism, excretion metabolic products, maintaining water-ion balance, individual production, behavioral and physiological indicators of environmental changes.	
Work placement	Not applicable		

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