University of Gdańsk

Subject card

Subject name and code	Basic physiology of aquacultured invertebrates - laboratory exercises, PG_00075876		
Field of study	Aquaculture – Business And Technology		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2025/2026
Education level	undergraduate 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	2.0
Learning profile	practical	Assessment form	
Conducting unit	Pracownia Ekofizjologii i Bioenergetyki -> Katedra Ekologii Morza -> Faculty of Oceanography and Geography		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Joanna Hegele-Drywa	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	30.0	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	10.0	13.0	53

Subject objectives

The aim of the course is to familiarise the student with the basic physiological processes of aquatic invertebrates and the influence of various factors on these processes.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[AKWAL3-K03] is ready to follow the ethical principles in biological research and adhere to the principles of intellectual honesty	student is prepared to observe ethical principles in biological research on invertebrates and to observe the principles of intellectual honesty (content of the curriculum)	[SK6] demonstration of practical skills [SK8] observation of student's independent or team work
[AKWAL3-U03] can competently obtain selected aquatic invertebrates for ongoing breeding and perform simple practical tasks related to their breeding under the guidance of the scientific supervisor	student can obtain selected aquatic invertebrates for cultivation and can carry out simple practical tasks related to their cultivation under the guidance of the supervisor	[SU6] demonstration of practical skills [SU8] observation of student's independent or team work
[AKWAL3-K04] is ready to identify and recognize dilemmas connected with the profession and understands the need to improve professional competence	student know and understand basic physiological processes, their link to the optimization of aquatic invertebrate husbandry methods and has acquired theoretical and practical knowledge of the diagnostic techniques used	[SK4] test/exam - oral or written

Subject contents

1. Determination of food preference, rate of food consumption in different invertebrates.
2. Determination of ammonia excretion rate in different invertebrates.
3. Determination of rates of aerobic metabolism (respiration) in different invertebrates.
4. Determination of haemolymph osmolality of different invertebrates.
5. Determination of the energy value of selected cultivated invertebrates.

Prerequisites and co-requisites

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	colloquium/test	51.0%	80.0%
	factual correctness of the reports	51.0%	10.0%
	preparation for classes and activity	51.0%	10.0%
Recommended reading	Basic literature	1. Barnabe G., 1994. Aquaculture: Biology And Ecology Of Cultured Species (Ellis Horwood series in aquaculture and fisheries support). CRC Press. 2. Willmer, P., Stone, G., Johnston, I., 2000. Environmental Physiology of Animals. Blackwell Science Ltd. 3. Potts W.T.W., Parry G., 1964. Osmotic and Ionic Regulation in Animals. Pergamon Press, Oxford. 4. Prosser C.L., Brown Jr. F.A., 1961. Comparative Animal Physiology. W.B. Saunders Company, London. 5. Aquaculture, Marine and Freshwater Behavior and Physiology, Journal of Experimental Marine Biology and Ecology, Comparative Biochemistry and Physiology A.	
	Supplementary literature	1. Aalimahmoudi M. et al., 2016. Effects of feeding frequency on growth, feed conversion ratio, survival rate and water quality of white leg shrimp (*Litopenaeus vannamei*, Boone, 1931), International Journal of Fisheries and Aquatic Studies, 4 (3): 293-297. 2. Guerin J.L., Stickle W.B., 1992. Effects of salinity on the tolerance and bioenergetics of juvenile blue crabs (*Callinectes sapidus*) from waters ofdifferent environmental salinities. Mar. Biol. 114, 391396. 3. Hopkin J.B., 2007. Growth and survival of the pacific white shrimp, *Litopenaeus vannamei*, in sea salt and other ionic environments. All Theses.Paper 1834. 4. Normant M., Król M., Jakubowska M., 2012. Effect of salinity on the physiology and bioenergetics of adult Chinese mitten crabs *Eriocheir sinensis*.Journal of Experimental Marine Biology and Ecology 416/417, 215-220. 5. Robertson L., Lawrence A.L., Castille F.L., 2008. Effect of feeding frequency and feeding time on growth of *Penaeus vannamei* (Boone).Aquaculture Research 24, 1-6.	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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