University of Gdańsk

Subject card

Subject name and code	Ecophysiology of Marine Animals - laboratory , PG_00204899		
Field of study	Oceanography		
Date of commencement of studies	October 2027	Academic year of realisation of subject	2027/2028
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	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	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	4.0	41.0	75

Subject objectives

Learning about the basic life processes of marine animals, as well as behavioural-physiological adaptations to the environment and the various types of changes in it.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OCEANMU2-U04] is ready to develop in an analytical and synthetic way research and analysis results and based on them creating conclusions	Student can elaborate analytically and synthetically the results of laboratory tests and analyses and make correct conclusions about the influence of biotic and abiotic factors on the behaviour and basic physiological processes of marine animals .	[SU3] text preparation/written work
[OCEANMU2-K01] is ready to plan, implement and supervise, individually or collectively, next stages of the entrusted task, is ready to take responsibility for its results;	Student is able to plan, carry out and supervise, individually or in a team, the successive stages of laboratory investigations into the fundamental physiological processes of marine animals, takes responsibility for the results, works effectively in a team in a variety of roles including leadership.	[SK3] text preparation/written work [SK8] observation of student's independent or team work
[OCEANMU2-U02] is able to fluently and accurately use scientific terminology when presenting and discussing oceanographic issues, and to propose and justify innovative solutions	Student can use scientific terminology fluently and appropriately in presenting and discussing problems in marine animal ecophysiology.	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work [SU4] test/exam - oral or written
[OCEANMU2-W03] has an in-depth understanding of research methods used in oceanography and related sciences, and interprets their mechanisms and interrelationships across different spatial and temporal scales	Student knows and understands the research methods used in marine animal ecophysiology research.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion

Subject contents

1 The influence of abiotic factors on the behaviour of marine animals.
2. Nutrition (filtration rate, food preference, chemoreception, food consumption rate).
3. Oxygen consumption (aerobic metabolism)
4. Ammonia excretion in selected marine animals.
5. Osmotic regulation.
6. Energy value of marine animals.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
factual correctness of the report	51.0%	20.0%
colloquium/test	51.0%	70.0%
preparation for classes and activity	51.0%	10.0%

Recommended reading

Basic literature	Hochachka P. W., Somero G. N., 1978. Strategie Adaptacji Biochemicznych. Wydawnictwo PWN, Warszawa Klekowski R.Z., Fischer Z., 1993. Bioenergetyka Ekologiczna Zwierząt Zmiennocieplnych. PAN, Wydział II Nauk Biologicz-nych, Warszawa. Schmidt-Nielsen K., 2008. Fizjologia Zwierząt. Adaptacja do środowiska. Wydawnictwo Naukowe PWN, Warszawa Willmer, P., Stone, G., Johnston, I., 2000. Environmental Physiology of Animals. Blackwell Science Ltd Cymborski B., 1987. Zegary biologiczne, PWN.
Supplementary literature	Harris, R.R., Aladin, N.V., 1997. The ecophysiology of osmoregulation in Crustacea. W: Hazon, N., Eddy, F.B., Flik, G. (red.), Ionic Regulation in Animals. Springer, Berlin, str. 1-25. Kinne, O., 1971. Marine Ecology. A comprehensive, integrated treatise on life in oceans and coastal waters, Vol. 1. Environ-mental factors. Part 2, Wiley-Interscience, a Division of John Wiley & Sons Ltd., London, New York, Sydney, Toronto. Norrbin F., Bamstedt U., 1984. Energy contents in benthic and planktonic invertebrates of Kosterfjorden, Sweden. A compari-son of energeticstrategies in marine organism groups. Ophelia 23 (1), 47-64. Regnault, M., 1987. Nitrogen excretion in marine and fresh-water Crustacea. Biol. Rev. 62, 1-24. Kamio M., C.D. Derby, 2017, Finding food: how marine invertebrates use chemical cues to track and select food, Nat. Prod. Rep., 2017, 34, 514.

	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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