

**Subject card**

<b>Subject name and code</b>	Marine Ecology - lecture, PG_00204902						
<b>Field of study</b>	Oceanography						
<b>Date of commencement of studies</b>	October 2026	<b>Academic year of realisation of subject</b>			2026/2027		
<b>Education level</b>	Master's studies	<b>Subject group</b>			Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study		
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>			at the university		
<b>Year of study</b>	1	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	1	<b>ECTS credits</b>			2.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>			exam		
<b>Conducting unit</b>	Department of Marine Ecosystems Functioning -> Faculty of Oceanography and Geography -> Rector						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		prof. dr hab. Adam Sokółowski				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	15.0	0.0	0.0	0.0	0.0	15
	E-learning hours included: 0.0						
	Additional information:  Lecture with multimedia presentation.						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	<b>Number of study hours</b>	15		1.0		34.0	50
<b>Subject objectives</b>	Introducing students to selected basic aspects of marine ecology, with a particular emphasis on the impacts of abiotic and biotic factors on the structure and functioning of marine organisms at different levels of their biological organization.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[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 knows and accurately applies taxonomic nomenclature and scientific terminology in the field of marine ecology.	[SU4] 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	Student understands ecological processes and phenomena in the marine environment, as well as the relationships and interactions between abiotic and biotic environmental factors.	[SW4] test/exam - oral or written
	[OCEANMU2-K02] is ready to take full responsibility in terms of actions taken and compliance with professional ethics and principles intellectual honesty, is aware of the importance professional approach in every situation	Student undertakes activities in the field of marine ecology in a professional and responsible manner, respecting the principles of professional ethics and integrity.	[SK4] test/exam - oral or written
	[OCEANMU2-U01] is able to formulate and solve complex and unusual problems regarding the functioning of individual components of the marine environment using knowledge from various fields and scientific disciplines and propose solutions	Student identifies problems and is able to formulate issues related to the structure and functioning of marine biocenosis, and proposes solutions through the application of interdisciplinary knowledge.	[SU4] test/exam - oral or written
[OCEANMU2-W06] knows and identifies potential threats to the marine environment on a local and global scale resulting from strong anthropopressure, predicts their effects on various time and space scales	Student identifies and understands threats to marine biocenosis resulting from human activities, and recognises and predicts their effects on marine organisms.	[SW4] test/exam - oral or written	
Subject contents	<ol style="list-style-type: none"> <li>1. The place of marine ecology in natural sciences, basic ecological concepts and definitions.</li> <li>2. Ecological phenomena, processes and relationships at the level of the organism, population and biocenosis.</li> <li>3. Abiotic factors (i.e., salinity, temperature, substrate type, light, tides, hydrostatic pressure, sea currents and wave actions, gases dissolved in water) and biotic (i.e., interspecies interactions, food quality and availability) and their impact on the distribution and biodiversity of marine organisms. Morphological and physiological modifications and adaptations of marine organisms to habitat conditions.</li> <li>4. Adaptations of organisms to changing environmental conditions (factors).</li> </ol>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Written exam	51.0%	100.0%
Recommended reading	Basic literature	<p>Odum E.P., 1973. Podstawy ekologii. Wyd. PWRiL, Warszawa  Trojan P., 1975, Ekologia ogólna. Państwowe Wydawnictwo Naukowe, Warszawa  Karasov W.H., Martinez del Rio C., 2007, Physiological ecology. Princeton University Press, Princeton  Kaiser M., Attrill M., Jennings S., Thomas D.N., Barnes D., Brierley A., Polunin N., Raffaelli D., Williams P.L.B., 2005, Marine Ecology: Processes, Systems, and Impacts. Oxford University Press, Oxford  Snoeijs-Leijonmalm P., Schubert H., Radziejewska T., 2017, Biological Oceanography of the Baltic Sea. Springer Science and Business Media, Dordrecht  Schiewer U., 2008, Ecology of Baltic coastal waters. Springer, Berlin  Demel K., 1974, Życie morza. Wydawnictwo Morskie, Gdańsk  Majewski A., 1992, Oceany i morza. Wydawnictwo Naukowe PWN, Warszawa  Odum E.P., 1973. Podstawy ekologii. Wyd. PWRiL, Warszawa  Kaiser M., Attrill M., Jennings S., Thomas D.N., Barnes D., Brierley A., Polunin N., Raffaelli D., Williams P.L.B., 2005, Marine Ecology: Processes, Systems, and Impacts. Oxford University Press, Oxford  Schiewer U., 2008, Ecology of Baltic coastal waters. Springer, Berlin</p> <p>thematic scientific publications</p>	

	Supplementary literature	<p>Wilkinson D.M., 2007, Fundamental processes in ecology. An earth systems approach. Oxford University Press, Oxford</p> <p>Umiński T., 1986, Zwierzęta i oceany. Wydawnictwa Szkolne i Pedagogiczne, Warszawa</p> <p>Thurman H., 1982, Zarys oceanologii. Wydawnictwo Morskie, Gdańsk</p> <p>Szyborski S., Szyborska K., 1981, Wszechocean. Wiedza Powszechna, Warszawa</p> <p>Umiński T., 1995, Ekologia środowisko przyroda. Wydawnictwa Szkolne i Pedagogiczne, Warszawa</p> <p>Winogradowa M.E., 1988, Oceanobiologia. Tom 1. Biologiczna struktura oceanu. Państwowe Wydawnictwo Naukowe, Warszawa</p> <p>Day Jr J.W., Kemp W.M., Yañez-Arancibia A., Byron C., 2013, Estuarine Ecology. Wiley-Blackwell/John Wiley &amp; Sons, Hoboken</p> <p>Solan M., Whiteley N.M., 2016, Stressors in the marine environment: physiological and ecological responses, societal implications. Oxford University Press, Oxford</p>
	eResources addresses	
Example issues/ example questions/ tasks being completed	<p>Define the following terms: ecological niche, commensalism, osmoregulation.</p> <p>Describe hyperosmotic regulation in marine animals.</p>	
Work placement	Not applicable	

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