

**Subject card**

<b>Subject name and code</b>	The Baltic Sea Environment, PG_00103758						
<b>Field of study</b>	Środowisko Morza Bałtyckiego (Ćw. audytoryjne)						
<b>Date of commencement of studies</b>	October 2022	<b>Academic year of realisation of subject</b>				2024/2025	
<b>Education level</b>	Bachelor's studies	<b>Subject group</b>					
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>				at the university	
<b>Year of study</b>	3	<b>Language of instruction</b>				Polish	
<b>Semester of study</b>	5	<b>ECTS credits</b>				1.0	
<b>Learning profile</b>	academic	<b>Assessment form</b>				credit	
<b>Conducting unit</b>	Laboratory of Biosystematics and Ecology of Aquatic Invertebrates -> Department of Evolutionary Genetics and Biosystematics -> Faculty of Biology -> Rector						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr hab. Anna Iglowska				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	0.0	15.0	0.0	0.0	0.0	15
	E-learning hours included: 0.0						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	<b>Participation in didactic classes included in study plan</b>		<b>Participation in consultation hours</b>		<b>Self-study</b>	<b>SUM</b>
	<b>Number of study hours</b>	15		0.0		0.0	15
<b>Subject objectives</b>	<ul style="list-style-type: none"> <li>- providing knowledge about the general characteristics of the Baltic Sea environment</li> <li>- presenting the current state of knowledge regarding the ecological problems of the Baltic Sea</li> <li>- indicating the importance of protecting the environment of the Baltic Sea and its resources</li> </ul>						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BIOLL3_W16] the graduate knows and understands the relationship between the achievements of the selected field of science and discipline of natural sciences and the possibilities of their use in socio-economic life, taking into account the sustainable use of biodiversity	- has in-depth knowledge of current ecological threats in the Baltic Sea (B_W16) - knows procedures related to the protection of the Baltic marine environment (B_W16)	[SW4] test/egzamin - ustny lub pisemny [SW1] wypowiedź ustna/rozmowa/diskusja
	[BIOLL3_W05] the graduate knows the rules and describes the mechanisms of life at the population, biocenosis and ecosystem levels, as well as the temporal and spatial determinants of biodiversity	- describes the history and marine environment of the Baltic Sea (B_W05) - explains the mechanisms of selected ecological processes in the Baltic Sea environment (B_W05)	[SW4] test/egzamin - ustny lub pisemny [SW1] wypowiedź ustna/rozmowa/diskusja [SW2] prezentacja/projekt/referat/raport
	[BIOLL3_U06] the graduate can read with understanding simple scientific biological texts in Polish and simple texts in English	- reads with understanding scientific texts on the ecology of the Baltic Sea in Polish and simple texts in English (B_U06)	[SU1] wypowiedź ustna/rozmowa/diskusja [SU2] prezentacja/projekt/referat/raport [SU4] test/egzamin - ustny lub pisemny
	[BIOLL3_U05] the graduate is able to synthesise data from a variety of sources and draw appropriate conclusions on this basis	- demonstrates the ability to select information and critically analyze it (B_U05) - predicts the directions of ecological changes and their impact on society (B_U05)	[SU1] wypowiedź ustna/rozmowa/diskusja [SU2] prezentacja/projekt/referat/raport [SU8] obserwacja samodzielnej lub zespołowej pracy studenta
	[BIOLL3_K08] the graduate is ready to be honest, reliable, apply the principles of savoir-vivre in scientific and professional work	- has the habit of using reliable and recognized sources of scientific information (B_K08)	[SK2] prezentacja/projekt/referat/raport [SK8] obserwacja samodzielnej lub zespołowej pracy studenta
	[BIOLL3_K07] the graduate is ready to consciously apply the principles of bioethics	- understands the need to promote pro-ecological attitudes and behaviors (B_K07)	[SK1] wypowiedź ustna/rozmowa/diskusja [SK8] obserwacja samodzielnej lub zespołowej pracy studenta
[BIOLL3_K01] the graduate is ready to evaluate his own knowledge and understands the need for continuous learning and development and is open to new ideas	- feels the need for continuous updating of knowledge on the ecological problems of the Baltic Sea (B_K01) - recognizes the relationship between the intensity of anthropogenic impacts and the functioning of the Baltic ecosystem (B_K01)	[SK1] wypowiedź ustna/rozmowa/diskusja [SK8] obserwacja samodzielnej lub zespołowej pracy studenta	
Subject contents	1. Morphometry and division of the Baltic Sea. 2. History of the Baltic Sea. 3. The Baltic as a brackish sea. 4. Flora and fauna of the Baltic Sea. 5. The problem of invasive species. 6. Anthropogenic eutrophication of the Baltic Sea. 7. The impact of climate change and increased CO <sub>2</sub> emissions on the environment of the Baltic Sea. 8. Pollution of Baltic Sea waters. 9. The problem of chemical weapons deposited at the bottom of the Baltic Sea. 10. Protection of Baltic Sea waters. 11. Currently conducted research programs regarding Baltic Sea.		
Prerequisites and co-requisites	To complete the course, it is necessary to pass the following courses: Invertebrate Zoology, General Ecology.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	poster presentation	51.0%	10.0%
	work card	51.0%	10.0%
	final test	51.0%	50.0%
	test	51.0%	30.0%

Recommended reading	Basic literature	Literature required to complete the course (pass the exam):  1. Snoeijjs-Leijonmalm, P., Schubert, H., Radziejewska, T. 2017. Biological Oceanography of the Baltic Sea. Springer.  2. Harff, J., Björck, S., Hoth, P. 2011. The Baltic Sea basin. Central and Eastern European Development Studies (CEEDES), Springer.  3. The BACC II Author Team. Second Assessment of Climate Change for the Baltic Sea basin. Springer.  4. Róžańska, Z. 1999. Ekologia środowiska morskiego. Wydawnictwo ART.  5. Scientific papers selected by the lecturer and shared with students during the class.
	Supplementary literature	Additional literature:  Witalis, B., Iglukowska, A., Ronowicz, M., Kukliński, P. 2021. Biodiversity of epifauna in the ports of Southern Baltic Sea revealed by study of recruitment and succession on artificial panels. Estuarine, Coastal and Shelf Science 249: 107107.
	eResources addresses	
Example issues/ example questions/ tasks being completed	<p>Task 1. What ecological form does the lion's mane jellyfish represent?</p> <p>a) Plankton</p> <p>b) Neuston</p> <p>c) Nekton</p> <p>d) Benthos</p> <p>Task 2. Which of the following Baltic species is an invasive invertebrate:</p> <p>a) Round goby</p> <p>b) Cyclopterus</p> <p>c) Bay barnacle</p> <p>d) Shorthorn sculpin</p>	
Work placement	Not applicable	

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