

**Subject card**

<b>Subject name and code</b>	Bioindication of marine environments - laboratory exercises, PG_00118084						
<b>Field of study</b>	Oceanography						
<b>Date of commencement of studies</b>	October 2024	<b>Academic year of realisation of subject</b>			2026/2027		
<b>Education level</b>	undergraduate studies	<b>Subject group</b>			Obligatory subject group 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>	3	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	6	<b>ECTS credits</b>			3.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>					
<b>Conducting unit</b>							
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr Aleksandra Zgrundo				
	<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	0.0	45.0	0.0	0.0	45
	E-learning hours included: 0.0						
<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>	45		5.0		25.0	75
<b>Subject objectives</b>	Familiarizing students with basic methods used in research to assess the quality of the aquatic environment. Creating a basis for critical reflection on the usefulness of appropriate tools and methods in monitoring the aquatic environment and proper interpretation of data.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	OCEANL3-U02	Is able to individually and collectively conduct observations and perform basic measurements of environmental elements used in monitoring sea waters in the field or in the laboratory using appropriately selected techniques, adequate to the characteristics of the research point	[SU6] demonstration of practical skills [SU8] observation of student's independent or team work
	OCEANL3-W05	Has advanced knowledge of basic techniques, research methods and mathematical and statistical tools used in monitoring work to describe and interpret phenomena and processes occurring in the aquatic environment	[SW4] test/exam - oral or written [SW3] text preparation/written work
	[OCEANL3-K03] is ready to exercise caution and criticism in accepting information from scientific literature, the Internet and other media relating to natural sciences	Is prepared to exercise caution and criticism in accepting information from scientific literature, the Internet and other media relating to marine environment monitoring	[SK1] oral statement/conversation/discussion [SK8] observation of student's independent or team work
	OCEANL3-U04	Is able to independently search for information in Polish and foreign specialist literature, as well as on the Internet and databases	[SU1] oral statement/conversation/discussion [SU3] text preparation/written work
OCEANL3-U06	Is able to define the basic relationships concerning the functioning of individual components of the marine environment and the impact of humans on their functioning/is able to define the basic relationships between individual components of the marine environment, integrating knowledge from various fields and scientific disciplines	[SU1] oral statement/conversation/discussion [SU3] text preparation/written work [SU4] test/exam - oral or written	
Subject contents	1. Preparation of a project for assessing the state of the environment in a selected region of the Gulf of Gdańsk. 2. Fieldwork aimed at learning about the methods used to collect biological material in water monitoring, collecting material for the analysis of plant and animal communities, and discussing good practices. 3. Qualitative and quantitative analysis of plant and animal communities in terms of assessing the state of the environment. 4. Use of cytogenetic analysis to assess the state of the environment using bivalves as an example. 5. Analysis of the collected data to assess the state of the environment. 6. Preparation and presentation of the project results in the form of a uniform study.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Completion of a final paper - conducting research and presenting its results	51.0%	20.0%
	Determination of the final grade based on partial grades received during the semester	51.0%	80.0%
Recommended reading	Basic literature	publications on water environment monitoring, key documents on water protection and monitoring applicable in the EU and Poland	
	Supplementary literature	publications on water environment monitoring, key documents on water protection and monitoring applicable in the EU and Poland	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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