

Subject card

Subject name and code	Bioindication of Marine Environments - lecture, PG_00205292						
Field of study	Oceanography						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2028/2029		
Education level	Bachelor'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	3	Language of instruction			Polish		
Semester of study	6	ECTS credits			2.0		
Learning profile	academic	Assessment form			exam		
Conducting unit	Department of Marine Ecosystems Functioning -> Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Aleksandra Zgrundo				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	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	2.0	18.0	50		
Subject objectives	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-U06] is able to formulate and solve advanced problems related to the functioning of individual components of the marine environment, using knowledge from various fields and scientific disciplines	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			[SU4] test/exam - oral or written		
	[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			[SK4] test/exam - oral or written		
	[OCEANL3-W06] has an advanced understanding of the principles of managing the marine environment and its resources, as well as the consequences of disrupting the balance of marine ecosystems	Knows and understands the basic principles of managing the marine environment and its resources in a sustainable manner and the consequences of disturbing the balance of marine ecosystems			[SW4] test/exam - oral or written		

Subject contents	1. Introduction to issues related to the assessment of the condition of the aquatic environment 2. Basic tools and methods used in effective biological monitoring based on the use of biomarkers and plant and animal bioindicators 3. Discussion of best practices in the study of the quality of the condition of the aquatic environment against the background of documents on the protection and monitoring of waters in force in the EU and Poland		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Exam	51.0%	100.0%
Recommended reading	Basic literature	Markert B.A., Breure A.M., & Zechmeister Z.G., 2003, Bioindicators and Biomonitoring, Elsevier, ISBN 0080441777 Perry J., Vanderklein E., 2002, Water quality. Management of a Natural Resource, Blackwell Science, ISBN 0-86542-469-1, s. 639 Walker C.H., Sibly R.M., Peakall D.B., 2001, Principles of Ecotoxicology, Third Edition [Paperback], Taylor & Francis Group, ISBN 0-7484-0940-8 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		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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