

Subject card

Subject name and code	Bioindication and biomonitoring of water - laboratory exercises, PG_00091514						
Field of study	Water Management and Protection of Water Resources						
Date of commencement of studies	October 2024		Academic year of realisation of subject			2025/2026	
Education level	undergraduate studies		Subject group			Obligatory subject group in the field of study Subject group related to scientific research in the field of study Subject group related to practical vocational preparation	
Mode of study	full-time studies		Mode of delivery			at the university	
Year of study	2		Language of instruction			Polish	
Semester of study	4		ECTS credits			1.0	
Learning profile	practical		Assessment form				
Conducting unit	Pracownia Bioróżnorodności i Funkcjonowania Bentosu -> Katedra Ekologii Morza -> Faculty of Oceanography and Geography						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Halina Kendzierska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	15.0	0.0	0.0	15
	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	15		10.0		0.0	25
Subject objectives	Development of knowledge on the assessment of threats to aquatic ecosystems related to human activities, the search for solutions aiming at sustainable management of aquatic areas and the improvement of the quality of aquatic ecosystems. To learn about and be able to select methods for the biological assessment of aquatic environmental quality and sustainability.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[GWOZWL3-U02] select and independently apply basic research techniques and tools, with adhering to established analytical procedures in the field of environmental research in water management, adequately to the considered research problem	Can select basic research techniques and tools, following established analytical procedures for water biomonitoring.	[SU2] presentation/project/paper/report [SU3] text preparation/written work
	[GWOZWL3-U03] observe and describe the changes taking place in water management and predict further directions of its development as well as conduct a critical analysis of: case studies of problems of water management and protection of water resources in terms of impact on ecological, social and economic systems natural valorization and assessment of quality of the environment	Can carry out a critical analysis of threats to water resources using a biological assessment of the quality of the water environment.	[SU8] observation of student's independent or team work
Subject contents	Assessment of the quality of a selected aquatic biotope based on environmental and laboratory studies; Laboratory studies including identification of selected protected species and alien species.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	activity in class, being prepared for class	51.0%	10.0%
	poster presentation of scientific paper	51.0%	20.0%
	assessment works, reports	51.0%	70.0%
Recommended reading	Basic literature	<p>Kołodziejczyk, A., Koperski, P., 2000. Freshwater invertebrates of Poland. Klucz do oznaczania oraz podstawy biologii i ekologii makrofauny. University of Warsaw Publishing House.</p> <p>Sea Water Monitoring Programme, Report to the European Commission, 2014, Prepared by the Chief Inspector of Environmental Protection, Warsaw.</p> <p>Wiech A.K., Marciniewicz-Mykieta M., Toczko B., 2018, San environment in Poland Report 2018, Inspekcja Ochrony Środowiska, Biblioteka Environmental Monitoring Library, Warsaw</p> <p>Walker C.H., Hopkin S.P., Sibly R.M., Peakall D.B., 2002, Fundamentals of ecotoxicology, Wyd. PWN, Warszawa</p>	
	Supplementary literature	-	
	eResources addresses	<p>Podstawowe</p> <p>http://www.helcom.fi - webpage of Baltic Marine Environment Protection Commission Helsinki Commission – HELCOM</p> <p>https://www.gios.gov.pl/ - Webpage of The Chief Inspectorate of Environmental Protection (GIOŚ)</p> <p>Adresy na platformie eNauczanie:</p>	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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