

Subject card

Subject name and code	Chemistry of the Bottom Sediments - laboratory , PG_00206143						
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	5		ECTS credits		2.0		
Learning profile	academic		Assessment form		credit		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Bożena Graca, prof. UG				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	30.0	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	The aim of the course is to prepare students to independently plan, correctly carry out and rationally verify geochemical investigations of bottom sediments from the marine environment.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[OCEANL3-K04] is willing to constantly deepen knowledge in the field of oceanography and improve professional qualifications, supported by the knowledge of experts		Is ready to improve knowledge of processes in marine bottom sediments continuously.		[SK2] presentation/project/paper/report		
	[OCEANL3-W05] has an advanced knowledge of techniques, research methods, and tools (mathematical, statistical, and computational) used by oceanographers to describe and interpret processes and phenomena occurring in the marine environment		has an advanced understanding of the research methods used to quantitatively and qualitatively describe and interpret marine sediment processes.		[SW2] presentation/project/paper/report		
	[OCEANL3-U12] is able to systematically expand and update oceanographic knowledge and enhance professional qualifications		Can systematically extend and update knowledge of biogeochemical processes in bottom sediments.		[SU2] presentation/project/paper/report		
	[OCEANL3-U02] is able to independently and collaboratively conduct observations and perform measurements in the field or laboratory using appropriately selected techniques, tailored to the research problem		Can conduct investigations into the chemical composition of bottom sediments and pore waters and plan and carry out laboratory and semi-laboratory experiments on bottom sediments.		[SU4] test/exam - oral or written		

Subject contents	B1. Forms of elements in bottom sediments (Determination of phosphorus forms in sediment by sequential analysis. The determination is preceded by environmental sampling and basic analyses: moisture content, loss on ignition, sieve analysis and measurements with electrodes : pH, Eh, O2). B2. Sediment diagenesis (recovery of interstitial waters and analysis of their ionic composition using spectrophotometry and ion chromatography). B3. Bottom sediments as a storage/secondary source of constituents to the water tone (sediment incubations to estimate the exchange of constituents in the water-sediment contact zone). B4. Preparation and presentation of the results of the tests carried out during the exercises.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	quality of the chemical analysis result	51.0%	60.0%
	presentation of a paper on a given topic	51.0%	40.0%
Recommended reading	Basic literature	Selected scientific articles on bottom sediment chemistry provided by the class instructor	
	Supplementary literature	Fizyczne, biologiczne i chemiczne badania morskich osadów dennych, J. Bolałek, 2010; Wydawca: Wydawnictwo Uniwersytetu Gdańskiego Stron: 572 ISBN: 9788373267893	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Forms of elements in sediment - test methods and environmental significance Validation of obtained chemical test result How to convert the obtained result - common mistakes		
Work placement	Not applicable		

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