University of Gdańsk

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 rzetally verify geochemical investigations of bottom sediments from the marine environment.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[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
[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. I	[SU2] presentation/project/paper/ report

<table>
<tr><td>Subject contents</td><td>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.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>quality of the chemical analysis result</td><td>51.0%</td><td>60.0%</td></tr>
<tr><td>presentation of a paper on a given topic</td><td>51.0%</td><td>40.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>Selected scientific articles on bottom sediment chemistry provided by the class instructor</td></tr>
<tr><td>Supplementary literature</td><td>Fizyczne, biologiczne i chemiczne badania morskich osadów dennych, J. Bolałek, 2010; Wydawca: Wydawnictwo Uniwersytetu Gdańskiego
Stron: 572
ISBN: 9788373267893</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td>Forms of elements in sediment - test methods and environmental significance

Validation of obtained chemical test result

How to convert the obtained result - common mistakes</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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