

Subject card

Subject name and code	Environmental geochemistry - laboratory classes, PG_00193071						
Field of study	Geology						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2027/2028		
Education level	Bachelor's studies	Subject group			Obligatory subject group in the field of study 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	2	Language of instruction			Polish		
Semester of study	3	ECTS credits			2.0		
Learning profile	academic	Assessment form			credit		
Conducting unit	Laboratory of Marine Environmental Protection -> Department of Chemical Oceanography and Marine Geology -> Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Dorota Burska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	25.0	0.0	0.0	25
	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	25		2.0		23.0	50
Subject objectives	The ability to perform selected chemical analyses and measurements important for assessing the geochemical environment. Interpretation of basic physicochemical indicators and application of this knowledge in describing the studied environment.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[GEOLL3_U02] has the skill of analytical and synthetic way of reasoning leading to correct inference based on the results obtained or the facts presented	has the ability to reason analytically and synthetically, leading to correct conclusions based on results obtained or facts presented in the field of geochemistry	[SU1] oral statement/conversation/discussion [SU3] text preparation/written work
	[GEOLL3_W02] knows and understands the terminology appropriate in science and natural sciences	knows and understands the terminology used in geochemical research, selected analytical methods and methods to verify the reliability of chemical results	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion
	[GEOLL3_U10] is able to work individually and cooperate in laboratory and field groups performing various functions in them and performing various tasks	is able to work individually and cooperate in laboratory groups in a variety of functions and tasks in the field of environmental geochemistry	[SU8] observation of student's independent or team work
	[GEOLL3_K05] is willing to comply with the principles of occupational safety and health, takes care of specialized equipment entrusted to them, is aware of the risk connected with the performed work	is willing to comply with the rules of occupational health and safety, to take care of the specialised equipment entrusted to him, is aware of the risks of the work he is doing	[SK8] observation of student's independent or team work
	[GEOLL3_U01] is able to apply basic measurement and analytical techniques in the field and in the laboratory, plans to conduct research and measurements	is able to apply basic measuring and analytical techniques in the field and laboratory, and to plan geochemical investigations and measurements	[SU3] text preparation/written work [SU6] demonstration of practical skills
Subject contents	<p>1 Analytical methods (limits of detection, quantification, accuracy, precision). Methods of conversion, presentation and interpretation of chemical analysis results. 2 Basic physico-chemical parameters (humidity/organic matter, pH/Eh) of soils and sediments (e.g. weighing methods, electrochemical methods). 3 Determination of selected elements (colorimetric methods and elemental analysis) in soil and sediment samples. 4. Sorption capacity of soils and sediments (mini-experiment). 5. Use of geochemical results in describing/solving problems in geology.</p>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	test	51.0%	40.0%
	assessment of the student's independent work	51.0%	15.0%
	work card	51.0%	45.0%
Recommended reading	Basic literature	<p>1. Bolalek J. (red.), 2010. Physical, biological and chemical studies of marine bottom sediments, .University of Gdansk, Gdańsk (in Polish)</p> <p>2. Bednarek R., Dziadowiec, H. Pokojska U., Prusinkiewicz Z. 2004 Ecological and soil research. Ed. PWN, Warsaw (in Polish)</p> <p>3. Falkowska L., Bolalek J., Łysiak-Pastuszak E., 1999 Chemical analysis of seawater vol.2, University of Gdansk, Gdańsk (in Polish)</p> <p>4. Uścińowicz Sz., (ed.), 2011. Geochemistry of Baltic Sea surface sediments, Ed. Polish Geological Institute-National Research Institute, Warsaw</p>	

	Supplementary literature	<p>1. Myślińska E., 2010, Laboratory testing of soils and grounds. University of Warsaw Press, Warsaw (in Polish)</p> <p>2. Minczewski J., Marczenko Z., 1978. Analytical Chemistry (vol. III), Ed. PWN, Warsaw (in Polish)</p>
	eResources addresses	
Example issues/ example questions/ tasks being completed	<p>Definition of pH. Classification of soils according to pH. Definition of acidity of soils and sources of acidity. Basics of spectrophotometry. Sources of organic matter for soils and sediments. Principle of elementary analyzer and spectrophotometer.</p>	
Work placement	Not applicable	

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