University of Gdańsk

Subject card

Subject name and code	Hydrogeology of the Coastal Zone - lecture, PG_00205351						
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		1.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Department of Geophysics -> Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Leszek Łęczyński, prof. UG				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	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		1.0		9.0	25
Subject objectives	Knowledge of hydrodynamic conditions shaping fresh and saline water balance on seashores. Ability to predict saltwater intrusion into aquifers.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[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 principles of water resource management in the coastal zone of the sea and the consequences of fresh and saltwater imbalance	[SW4] test/exam - oral or written
[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	Knows and understands the importance of basic techniques, research methods, and tools (mathematical, statistical, IT) for the description and interpretation of phenomena and processes occurring in aquifers in the coastal zone	[SW4] test/exam - oral or written
[OCEANL3-W02] has a broad knowledge and understanding of physical, biological, chemical, and geological processes and phenomena occurring in aquatic environments, with particular emphasis on the marine environment	Knows and understands the principles of water resource management in the coastal zone of the sea and the consequences of fresh and saltwater imbalance	[SW4] test/exam - oral or written
[OCEANL3-W01] has an advanced knowledge and understanding of the terminology used in oceanography and related exact and natural sciences (in Polish and a selected foreign language)	Can systematically extend and update knowledge in the field of hydrogeology of the coastal zone of the sea and improve professional qualifications	[SW4] test/exam - oral or written
[OCEANL3-U05] is able to use general-purpose and specialized software, as well as mathematical and statistical methods, in data analysis and the presentation of results	Be able to apply computer software and mathematical and statistical methods in the analysis of data and the description of phenomena and processes occurring between fresh and salt waters in the coastal zone of the sea	[SU4] test/exam - oral or written
[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 plan research and analysis independently or in a team Can plan research and analysis in a laboratory, using appropriately selected measuring and analytical techniques in the field of hydrogeology of the sea coastal zone adequately to the research problem posed	[SU4] test/exam - oral or written
[OCEANL3-U01] is able to use the current scientific terminology in the field of oceanography in various forms of expression	Can use current scientific terminology in coastal hydrogeology in presenting and discussing research problems	[SU4] test/exam - oral or written
[OCEANL3-U12] is able to systematically expand and update oceanographic knowledge and enhance professional qualifications	Is prepared to be cautious and critical in accepting information from scientific literature, the internet, and other media relating to the life sciences	[SU4] test/exam - oral or written
[OCEANL3-U03] is able to process, describe, and present results, and draw conclusions	Be able to process the results of hydrogeological investigations and analyses in a manner and make correct inferences based on them	[SU4] test/exam - oral or written

Subject contents

Hydrogeological concepts.Specificity of hydrogeological conditions of the sea coastal zone.Saline and freshwater equilibrium conditions in the sea coastal zone.Types of groundwater drainage.Submarine drainage.Physical, chemical and biological indicators of groundwater drainage in the seabed.Groundwater in coastal areas.

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	Macioszczyk A., Dobrzyński, 2003. Hydrogeochemia wód podziemnych strefy aktywnej wymiany. PWN, Warszawa Paczyński B, Sadurski A. (red.), 2007, Hydrogeologia regionalna Polski, PIG, Warszawa. Pazdro Z., Kozerski B., 1989. Hydrogeologia ogólna. Wyd. Geol., Warszawa. Piekarek-Jankowska H., 1994, Zatoka Pucka jako obszar drenażu wód podziemnych. Wydawnictwo Uniwersytetu Gdańskiego
	Supplementary literature	- Kleczkowski, A. S., (red.), 1984, Ochrona wód podziemnych, Wyd. Geol., Warszawa Kozerski B.(red), 2007, Gdański system wodonośny, Wydawnictwo Politechniki Gdańskiej, Gdańsk. Macioszyk A., 1987. Hydrogeochemia. Wyd. Geolog., Warszawa. Słownik hydrogeologiczny red. Kleczkowski A., Różkowski A., 1997, Wydawnictwo TRIO. Ustawa, Prawo wodne. z dnia 18 lipca 2001 r. (Dz. U. 2001.115.1229)
	eResources addresses	
Example issues/ example questions/ tasks being completed	-	
Work placement	Not applicable	

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