University of Gdańsk

Subject card

Subject name and code	Hydrogeology of the Coastal Zone - auditory classes, PG_00206150		
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	0.0	15.0	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-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)	To an advanced degree, knows and understands the terminology specific to coastal zone hydrogeology in sciences and natural sciences (in Polish), with particular emphasis on marine sciences	[SW3] text preparation/written work
[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	Be able to process the results of hydrogeological investigations and analyses in a manner and make correct inferences based on them	[SU3] text preparation/written work
[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	[SU3] text preparation/written work
[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 basic physical, chemical, and geological processes and phenomena occurring in the marine coastal zone affecting aquifers in its area	[SW3] text preparation/written work
[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	[SW3] text preparation/written work
[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	[SU3] text preparation/written work
[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	[SW3] text preparation/written work
[OCEANL3-U12] is able to systematically expand and update oceanographic knowledge and enhance professional qualifications	Can systematically extend and update knowledge in the field of hydrogeology of the coastal zone of the sea and improve professional qualifications	[SU3] text preparation/written work

Subject contents

Hydrogeological cross-section,
Map of hydroisohips and hydroisobaths
Determination of filtration coefficient.
Analysis of the chemical composition of groundwater and marine water.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Assessment of text works	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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