University of Gdańsk

Subject card

Subject name and code	Geological Methods of Seabed Research - lecture, PG_00205352		
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	2.0
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 Dominik Pałgan	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	0.0	0.0	0.0	30

E-learning hours included: 0.0

Additional information:

Lecture with multimedia presentation.

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	To know and understand the principles of operation and the possibilities of using basic methods of geological surveys of the seabed.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OCEANL3-W03] has an advanced understanding of the relationships between living and non-living components of aquatic environments, and is aware of the complex nature, intricacy, and natural variability of these environments	knows and understands to an advanced level the interrelationship between living and non-living elements of the seabed, their complexity and natural variability and knows with which methods they can be studied (context: A.1-A.9)	[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 basic physical, biological, chemical and geological processes and phenomena that have an impact on the application of appropriate methods for the geological exploration of the seabed (context: A.1-A.9)	[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)	in an advanced level, knows and understands the terminology relating to various types of geological surveys of the seabed (in Polish and with elements of teminology in English) (context: A. 1-A.9)	[SW4] 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	is able to use current scientific terminology in presenting and discussing problems concerning the methods used in geological investigations of the seabed (A.1 - A.9)	[SU4] 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	has an advanced understanding of the techniques, research methods and tools used in geological surveys of the seabed (content: A. 1-A.9)	[SW4] test/exam - oral or written

Subject contents

A.1 Terminology used in seabed surveys and basic legislation.A.2 Basics of geology and seabed genesis.A. 3 Review of inasive methods of seabed exploration.A.4. Seabed field surveys. A.5. Basic methods of laboratory testing of ground (seafloor). A.6. Review of none-inasive seabed survey methods.A.7. Basic information on the International Ocean Discovery Program (IODP).A.8. Bottom mapping methods (bathymetry) and the Seabed 2030 project.A.9. Pre-investment seabed surveys.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Written exam with test and open questions (descriptive)	51.0%	100.0%

Recommended reading

Basic literature	Frankowski Z i in. ,2009 - Zasady dokumentowania geologiczno inżynierskich warunków posadowienia obiektów budownictwa morskiego i zabezpieczeń brzegu morskiego. Państwowy Instytut Geologiczny Warszawa.

	Supplementary literature	Harff, J., Meschede, M., Petersen, S., Thiede, J. (Eds.), 2016, Encyclopedia of Marine Geosciences, Springer, Dordrecht, ISBN Online 978-94-007-6238-1 Hückel S., 1967, Zarys fundamentowania dla geologów. Wydanie II. Wyd. Geol., Warszawa. Hückel S., 1975, Budowle morskie. T. IV. Wykonawstwo robót morskich. Przykłady obliczeń. Wydanie II. Wyd. Morskie, Gdańsk. Kramarska R. (red.), 1999 Mapa geologiczna dna Bałtyku bez utworów czwartorzędowych 1:500 000. Państw. Inst. Geol., Warszawa. Mazurkiewicz B.., 1986 Encyklopedia inżynierii morskiej. Wyd. Morskie, Gdańsk. Mazurkiewicz B. (red.), 2006 Morskie budowle hydrotechniczne. Zalecenia do projektowania i wykonywania. Wyd. IV. Fundacja Promocji Przemysłu Okrętowego i Gospodarki Morskiej, Gdańsk. Pruszak Z., 2003 Akweny morskie. Zarys procesów fizycznych i inżynierii środowiska. Wyd. IBW PAN, Gdańsk. Wiłun Z., 2001 Zarys geotechniki. Wyd. Komunikacji i Łączności, Warszawa. Wysokiński L., 2007 Instrukcje, wytyczne, poradniki 428/2007. Komentarz do nowych norm klasyfikacji gruntowej. ITB, Warszawa. Rozporządzenie Ministra Spraw Wewnętrznych i Administracji z dnia 24 września 1998 r. w sprawie ustalania geotechnicznych warunków posadawiania obiektów budowlanych (Dz.U. Nr 126 z 1998 r., poz. 839). Rozporządzenie Ministra Gospodarki Morskiej z dnia 23 października 2006 r. w sprawie warunków technicznych użytkowania oraz szczegółowego zakresu kontroli morskich budowli hydrotechnicznych (Dz.U. Nr 206 z 2006 r., poz. 1516).
	eResources addresses	
Example issues/ example questions/ tasks being completed	The principle of operation and application of multibeam echosounders in marine geological surveys.	
Work placement	Not applicable	

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