GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	ENGINERING GEOLOGY AND HYDROGEOLOGY, PG_00044242						
Field of study	Civil Engineering						
Date of commencement of studies	October 2021		Academic year of realisation of subject	2024/2025			
Education level	first-cycle studies		Subject group	Optional subject group			
Mode of study	Full-time studies		Mode of delivery	at the university			
Year of study	4		Language of instruction	Polish			
Semester of study	7		ECTS credits	2.0			
Learning profile	general academic profile		Assessment form	assessment			
Conducting unit	Department of Geotechnics, Geology and Marine Civil Engineering -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Małgorzata Pruszkowska-Caceres					
	Teachers	dr Dawid Potrykus dr hab. Małgorzata Pruszkowska-Caceres					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	15.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
	Address on the e-learning platform: https://enauczanie.pg.edu.pl/moodle/index.php?id=7428						
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	0.0	20.0	50		
Subject objectives	Recognizing the conditions of foundation of buildings in the context of the construction of the ground and hydrogeological conditions. Tool for identifying the construction of the substrate. The influence of geological processes on the geotechnical parameters. Geological Law.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W15] Has knowlege of construction law and environmetal impact of investment realisation	The notion of environment engineering geology, the engineering geology classification of rocks. The aim and range of investigations engineering geology, the division of investigative methods. The study of results of engineering geology investigations - the basis of documenting the, study of maps, sections. Models of building of subsoil. The engineering geology map. General profile of geodynamic processes. The part of water in nature. The circulation of water in hydrological cycle. Origin of underground waters. The hydrogeology propriety of rocks. Propriety of underground waters. Quality of underground waters. Right the and parameters the movement of underground waters. Method of field and laboratory hydrogeology investigations. Preparing sections as well as hydrogeology maps. The supplies and water intake underground. Protection of underground waters.	[SW2] Assessment of knowledge contained in presentation
[K6_U14] can read geological maps and profiles, recognizes most popular rocks and minerals, recognizes the soil-water conditions of construction site	Student: - geological maps learns and learns to read with them the information, - She meets classifications of soils and rocks, - geotecnical parameters derived from the results of field trials, - creates a statement of the values of geotechnical parameters and evaluates conditions for foundation of buildings	[SU4] Assessment of ability to use methods and tools
[K6_K02] is responsible for reliability of obtained results of research and its interpretation, formulates conclusions and describes results of own work	Students can work on a solution of the task.	[SK1] Assessment of group work skills [SK2] Assessment of progress of work
[K6_W07] has basic knowlede on natural processes (hydrological, hydraulical or geological) and its influence on building subsoil; understands specific aspects of surface and underground water, which constraints the design and exploitation of buildings and engineering objects	The notion of environment engineering geology, the engineering geology classification of rocks. The aim and range of investigations engineering geology, the division of investigative methods. The study of results of engineering geology investigations - the basis of documenting the, study of maps, sections. Models of building of subsoil. The engineering geology map. General profile of geodynamic processes. The part of water in nature. The circulation of water in hydrological cycle. Origin of underground waters. The hydrogeology propriety of rocks. Propriety of underground waters. Quality of underground waters. Right the and parameters the movement of underground waters. Method of field and laboratory hydrogeology investigations. Preparing sections as well as hydrogeology maps. The supplies and water intake underground. Protection of underground waters.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects

	Course outcome	Subject outcome	Method of verification
	[K6_W16] Has deeper and adequate knowlege of civil engineering, within offered specialization	Student: - geological maps learns and learns to read with them the information, - meets classifications of soils and rocks, - geotecnical parameters derived from the results of field trials, - creates a statement of the values of geotechnical parameters and evaluates conditions for foundation of buildings	[SW1] Assessment of factual knowledge
Subject contents	The concept of environmental engineering geology, geological engineering classification of building substrates. Purpose and scope of engineering-geological surveys, the division of research methods. Production of results of engineering-geological studies - Basic documentation, preparation of maps, profiles, cross sections. Models of the substrate. Engineering-geological maps. General characteristics of geodynamic processes. The role of water in nature. Circulation of water in the hydrological cycle. The genesis of groundwater. Hydrogeological properties of rocks. Properties of groundwater. Field and laboratory methods for hydrogeological studies. Protection of groundwater. Preparation of cross-sections and maps of engineering-geological and hydrogeological.		
Prerequisites and co-requisites	General knowledge of the issues included in the curriculum of Soil Mechanics. General knowledge of the issues included in the curriculum of Geology (Earth Science Basis), in particular, Quaternary Geology and Geomorphology.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	exercises - practical exercise	60.0%	20.0%
	lecture - written test	60.0%	50.0%
	exercises - colloquium	60.0%	30.0%
Recommended reading	Basic literature	Bażyński J., Drągowski A., Frankowski Z., Kaczyński R., Rybicki ,S., Wysokiński L. 1999. Zasady Sporządzania Dokumentacji Geologiczno-Inżynierskich. Wydawnictwa PIG; Warszawa. Lenczewska-Samotyja E., Łowisk A., Zdrojewska N., Zarys geologii z elementami geologii inżynierskiej i hydrogeologii. Wyd. Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2000. Pazdro Z., Kozerski B. Hydrogeologia ogólna. Wydawnictwo Geologiczne1990.	
	Supplementary literature	Wieczysty A., Hydrogeologia stosowana. Wyd. PWN, Warszawa 1982. Pisarczyk S. Gruntoznawstwo inżynierskie. Wyd. PWN, Warszawa 2001.	
	eResources addresses	Adresy na platformie eNauczanie: Geologia inżynierska i hydrogeologia Geotechnika VII - Moodle ID: 40510 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=40510	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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