



Subject card

Subject name and code	, PG_00069256						
Field of study	Badania podłoża gruntowego (i dna morskiego)						
Date of commencement of studies	October 2022		Academic year of realisation of subject		2025/2026		
Education level	first-cycle studies		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 Geotechnical and Hydraulic Engineering -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. inż. Lech Bałachowski				
	Teachers		prof. dr hab. inż. Lech Bałachowski dr inż. Jakub Konkol				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0	0.0	30
	E-learning hours included: 0.0						
	eNauczanie source address: https://enauczanie.pg.edu.pl/2025/course/view.php?id=2311 Moodle ID: 2311 Badania podłoża gruntowego (i dna morskiego) https://enauczanie.pg.edu.pl/2025/course/view.php?id=2311						
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	Knowledge of the interpretation of typical site investigation methods and soil laboratory tests, specially for off-shore applications						
	Application of in-situ test results in the design of piles						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_U06] Conduct engineering activities in civil engineering subject area, using and applying practical knowledge and understanding of materials, equipment and tools, processes and technologies.	Student is able to interpret the results of static penetration tests.	[SU1] Ocena realizacji zadania
	[K6_K01] Is aware of the key aspects of professional, ethical and social responsibility related to management, business operation, decision making and opinion formulation in civil engineering.	Student knows the impact of different technologies in foundation engineering on the environment.	[SK4] Ocena umiejętności komunikacji, w tym poprawności językowej
	[K6_U07] Design and build engineering structures in a sustainable manner, with care for the natural environment and a minimum carbon footprint	Student is able to use efficiently various methods of soil improvement	[SU4] Ocena umiejętności korzystania z metod i narzędzi
	[K6_W07] Understand the investment's impact on the environment and the interrelationships and dependencies between the building structure and the natural environment	Student knows the soil investigation methods and estimation methods of soil contamination.	[SW1] Ocena wiedzy faktograficznej
	[K6_W06] Demonstrates practical knowledge and understanding of materials, devices and tools, processes and technologies in the field of civil engineering (and their limitations).	Student knows the impact of different technologies in foundation engineering on the environment.	[SW3] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym
Subject contents	Course content – lecture Interpretation of in-situ soil investigation using CPTU, DMT, vane test, pressuremeter and environmental probes. Off-shore soil investigation using CPTU, DMT, T-bar and piezoball. Interpretation of in-situ tests with the physical modelling tests. Application of soil investigation in foundation design and quality control of deep soil compaction. Sample quality and its impact on laboratory test results. Course content – laboratory Interpretation of soil profile and parameters from CPTU test. Application of CPTU method in direct and indirect foundation design (determination of pile bearing capacity). Macroscopic tests. Basic laboratory tests and their interpretation.		
Prerequisites and co-requisites	Knowledge of bases of soil mechanics and foundation engineering		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	project	50.0%	50.0%
	lecture	50.0%	50.0%
Recommended reading	Basic literature	Craig's Soil Mechanics by Jonathan Knappett , Mr R F Craig , CRC Press, 2019	
	Supplementary literature	www.geologismiki.gr www.geosoft.com.pl	
	eResources addresses	Basic http://www.geosoft.com.pl - Software to CPTU interpretation	
Example issues/ example questions/ tasks being completed	Soil classification with CPTU Determination of friction angle based on CPTU Indexes from DMT tests		
Practical activities within the subject	Not applicable		

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