GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00062834		
Field of study	Civil Engineering		
Date of commencement of studies	October 2022	Academic year of realisation of subject	2023/2024
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	2	Language of instruction	Polish
Semester of study	4	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Geotechnical and Hydraulic Engineering -> Faculty of Civil and Environmental Engineering		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Witold Sterpejkowicz-Wersocki	
	Teachers	dr inż. Witold Sterpejkowicz-Wersocki	

Lesson types and methods of instruction

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

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	30	0.0	0.0	30

Subject objectives

The aim of the course is to experimentally present the phenomenon of seepage in the base of a damming structure and to compare the research results with theoretical calculations.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_K03] Can effectively, clearly and unambiguously convey information, describe activities and communicate their results/ outcomes to engineers or a wider audience using appropriate communication methods and tools.	The student describes the results obtained from experiment and calculations in the form of a presentation. On this basis, he is able to formulate conclusions and communicate them to others, as well as participate in discussions.	[SK5] Assessment of ability to solve problems that arise in practice [SK4] Assessment of communication skills, including language correctness
[K6_U05] Conducts research (obtaining information, simulations, experimental methods) in the field of construction in order to solve specific tasks and report research results.	The student is able to carry out water filtration tests in the ground of a damming structure.	[SU1] Assessment of task fulfilment
[K6_W05] Demonstrate knowledge and understanding of research methods (obtaining information, simulations, experimental methods) in the field of civil engineering.	The student knows the method of determining the hydrodynamic pressures acting on the foundation of a damming structure and is able to verify these results experimentally.	[SW2] Assessment of knowledge contained in presentation
[K6_K02] Can work effectively in a group, as well as function in teams, which may consist of representatives of various branches and levels.	The student can carry out an experiment in a research team.	[SK1] Assessment of group work skills

Subject contents

In the base of each water damming structure (e.g. earth dam, flood embankment, weir, lock) a filtration (seepage) phenomenon occurs, which may cause changes in the ground that destabilize the structure. As part of the classes, participants will, in accordance with the adopted scheme, build an experimental station, make a model of the damming structure and conduct experiments on the flow of groundwater under the damming structure. The flow of groundwater will take place using substances that visualize streamlines (water flow lines in the ground). The aim of the experiment will be to determine the filtration pressures acting on the foundation of this building and then to compare the obtained results with theory. As part of the course, an educational trip to an existing hydrotechnical facility is planned in order to become familiar with the conditions of its operation.

Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Report	60.0%	60.0%
	Presentation of results	60.0%	40.0%
Recommended reading	Basic literature	1. Bednarczyk, Bolt, Mackiewicz Stateczność oraz bezpieczeństwo jazów i zapór, Wydawnictwo Politechniki Gdańskiej, Gdańsk 2009	
	Supplementary literature	1. Adamski, Gortat, Leśniak, Żbikowski Małe budownictwo wodne dla wsi, Wydawnictwo Arkady, Warszawa, 1986	
	eResources addresses	Adresy na platformie eNauczanie: Eksperymentalna Hydrotechnika - Moodle ID: 38399 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=38399	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		