



Subject card

Subject name and code	, PG_00069258						
Field of study	Civil Engineering						
Date of commencement of studies	October 2023		Academic year of realisation of subject		2026/2027		
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		dr inż. Witold Sterpejkowicz-Wersocki				
	Teachers						
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=2646						
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	The aim of the course is to discuss the principles of conducting laboratory model tests of hydraulic structures and to carry out tests of selected building elements in a hydraulic laboratory.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W06] Demonstrates practical knowledge and understanding of materials, devices and tools, processes and technologies in the field of civil engineering (and their limitations).		The student is able to evaluate the influence of material roughness on the results obtained in hydraulic model tests.		[SW1] Assessment of factual knowledge		
	[K6_W07] Understand the investment's impact on the environment and the interrelationships and dependencies between the building structure and the natural environment		The student knows the importance of correctly selecting the capacity of a damming structure to ensure flood safety.		[SW1] Assessment of factual knowledge		
	[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.		e student conducts laboratory tests on selected elements of hydrotechnical structures, using the acquired knowledge and understanding of the phenomena occurring. Prześlij opinię		[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools		
	[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.		The student is aware of the responsibility for the reliable conduct of laboratory tests and the presentation of their results.		[SK4] Assessment of communication skills, including language correctness [SK1] Assessment of group work skills		
	[K6_U07] Design and build engineering structures in a sustainable manner, with care for the natural environment and a minimum carbon footprint		The student knows the principles of designing hydraulic structures to ensure the safety of the structure and the environment.		[SU5] Assessment of ability to present the results of task [SU2] Assessment of ability to analyse information		

Subject contents	Course content – lecture		
	1. Laminar and turbulent flow in open channels. Reynolds number. 2. Uniform and non-uniform flow. Froude number. 3. Hydraulic jump and energy dissipation. 4. Basic characteristics in hydraulic modeling studies. 5. Similarities between models and nature. 6. Fundamentals of modeling studies of hydraulic structures.		
	Course content – laboratory		
	1. Determining the water flow velocity in an open channel using a hydrometric mill and a Pitot tube. 2. Determining the discharge from a flat or radial gate. 3. Determining hydraulic losses on grates. 4. Determining the flow rate of a model overflow and in nature. 5. Bridge pier.		
Prerequisites and co-requisites	Basic knowledge of Hydraulics and Hydrology as well as Hydro and Marine Engineering.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Attendance at classes	90.0%	10.0%
	Carrying out experiments and reports	60.0%	30.0%
	Test	60.0%	60.0%
Recommended reading	Basic literature	1. Majewski W. - Hydrauliczne badania modelowe w inżynierii wodnej, IMGW-PIB, Warszawa 2019	
	Supplementary literature	Not required	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Bernoulli's equation in open channels and its graphical interpretation.		
Practical activities within the subject	Not applicable		

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