



Subject card

Subject name and code	, PG_00069426						
Field of study	Obiekty hydrotechniczne						
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	Part-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		dr inż. Witold Sterpejkowicz-Wersocki				
			dr inż. Witold Tisler				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	10.0	10.0	0.0	0.0	0.0	20
	E-learning hours included: 0.0						
	eNauczanie source address: https://enauczanie.pg.edu.pl/2025/course/view.php?id=2716						
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	20		2.0		28.0	50
Subject objectives	The aim of the course is to discuss the basic maritime and inland hydrotechnical facilities and the principles of their design.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[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 safe design of hydraulic structures and their impact on the natural environment.	[SU3] Ocena umiejętności wykorzystania wiedzy uzyskanej w ramach przedmiotu
	[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 reliability of the analyses and calculations carried out and the opinions formulated.	[SK4] Ocena umiejętności komunikacji, w tym poprawności językowej [SK5] Ocena umiejętności rozwiązywania problemów występujących w praktyce
	[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.	The student performs design calculations of selected elements of hydrotechnical structures.	[SU1] Ocena realizacji zadania [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	The student knows the benefits and threats resulting from the existence of damming structures and their impact on the shaping of water resources.	[SW3] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym [SW1] Ocena wiedzy faktograficznej
Subject contents	Course content – lecture Hydro civil engineering section: 1. Weirs and dams 2. Water gates 3. Hydroelectric power plants Marine civil engineering section: 1. Classification of marine civil engineering structures. 2. Reasons of seabed depression.		
	Course content – exercises Hydro civil engineering section: 1. Weir capacity calculations 2. Seepage under the weir. Buoyancy force. 3. Weir's basin calculations. Marine civil engineering section: 1. Calculation of the sheet pile wall, taking into account the p-y curves. 2. External and internal load plays a main role for chamber constructions.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Execution of the design task	60.0%	100.0%

Recommended reading	Basic literature	1. Balcerski i inni Budownictwo Betonowe tom XVII, Budowle Wodne Śródlądowe, Arkady, Warszawa, 1969 2. Fanti i inni Budowle piętrzące, Wydawnictwo Arkady, Warszawa, 1972 3. Żbikowski i inni Zapory ziemne, Wydawnictwo Arkady, Warszawa, 1973 4. Bednarczyk, Bolt, Mackiewicz Stateczność oraz bezpieczeństwo jazów i zapór, Wydawnictwo Politechniki Gdańskiej, Gdańsk 2009 5. Depczyński, Szamowski Budowle i zbiorniki wodne, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa, 1999 6. Bednarczyk Budownictwo Wodno-Melioracyjne. Jazy. Cz. I i II, Akademia Rolnicza im. H. Kołłątaja, Kraków 1985 7. Boretti Konstrukcje stalowe w budownictwie wodnym, Wydawnictwo Arkady, Warszawa 1968 8. Boretti i inni Przykłady obliczeń konstrukcji stalowych, Wydawnictwo Arkady, Warszawa 1993 9. Adamski, Gortat, Leśniak, Żbikowski Małe budownictwo wodne dla wsi, Wydawnictwo Arkady, Warszawa, 1986
	Supplementary literature	Brak wymagań
	eResources addresses	
Example issues/ example questions/ tasks being completed	1. Design the depth of the sheet pile wall using analytical and numerical methods. 2. Check the ultimate and serviceability limit states of the hydrotechnical structure.	
Practical activities within the subject	Not applicable	

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