



Subject card

Subject name and code	, PG_00069244						
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		prof. dr hab. inż. Adam Szymkiewicz				
	Teachers						
Lesson types	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						
	eNauczanie source address: https://enauczanie.pg.edu.pl/2025/course/view.php?id=2586						
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	To familiarize students with basic principles of design and operation of dewatering systems, with focus on construction dewatering						
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 has knowledge on design and operation of dewatering systems		[SW3] Assessment of knowledge contained in written work and projects		
	[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 gains knowledge about the impact of dewatering systems on the surroundings and methods to minimize this impact		[SW3] Assessment of knowledge contained in written work and projects		
	[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 aspects of professional and social responsibility related to the operation of drainage and dewatering systems.		[SK5] Assessment of ability to solve problems that arise in practice		
	[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.		Students gain skills in designing dewatering systems		[SU3] Assessment of ability to use knowledge gained from the subject		
	[K6_U07] Design and build engineering structures in a sustainable manner, with care for the natural environment and a minimum carbon footprint		The student is able to propose design solutions that reduce the impact of drainage and dewatering systems on the environment.		[SU3] Assessment of ability to use knowledge gained from the subject		

Subject contents	Course content – lecture Groundwater occurrence and its impact on structures. Horizontal drainage systems. Dewatering of excavations. Impact of dewatering on surroundings.		
	Course content – exercises Inflow from the catchment, Designing rainwater canals. Calculating groundwater discharge to horizontal drains and excavations. Drainage of excavation.		
Prerequisites and co-requisites	Knowledge of the subjects Soil Mechanics and Foundation Engineering		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Evaluation of project exercises	50.0%	100.0%
Recommended reading	Basic literature	E. Mielcarzewicz (1990), Odwadnianie terenów zurbanizowanych i przemysłowych J. Sokołowski, A. Żbikowski (1993), Odwodnienia budowlane i osiedlowe	
	Supplementary literature	Cashman, P. M., & Preene, M. (2020). Groundwater lowering in construction: a practical guide to dewatering. CRC Press.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Calculating the water inflow to the excavation. Determining the location of drainage wells. Calculating the water inflow to the horizontal drainage system.		
Practical activities within the subject	Not applicable		

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