



Subject card

Subject name and code	Hydraulics and hydrology, PG_00041517								
Field of study	Civil Engineering								
Date of commencement of studies	October 2025	Academic year of realisation of subject		2025/2026					
Education level	second-cycle studies		Subject group		Optional subject group Subject group related to scientific research in the field of study				
Mode of study	Full-time studies		Mode of delivery		at the university				
Year of study	1	Language of instruction		English					
Semester of study	1	ECTS credits		2.0					
Learning profile			Assessment form		assessment				
Conducting unit	Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology								
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Tomasz Kolarski						
	Teachers								
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM		
	Number of study hours	15.0	15.0	15.0	0.0	0.0	45		
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	45		5.0		0.0	50		
Subject objectives	<p>Students should master the following capacities:</p> <ul style="list-style-type: none">- analysis of hydrological processes in catchment,- determination of open-channel hydraulic parameters, oriented towards problems of hydroengineering,								
Learning outcomes	Course outcome		Subject outcome		Method of verification				
	[K7_W11] has deep knowledge of marine and inland hydrotechnical constructions; has knowledge about hydraulical and hydrological constraints in design and exploitation of buildings		Student knows how to calculate hydraulics of hydroengineering structures, Knows procedures to calculate effective rainfall, knows how to calculate flood storage of the retention reservoirs		[SW1] Assessment of factual knowledge				
	[K7_U10] can analyse complicated environmental loads acting on a construction; can apply proper processes to design marine and hydroengineering constructions taking into consideration hydrological and hydraulical impact		Student knows how to calculate surface runoff base on the UH theory, Knows how to determine parameters of hydraulic structures base on hydraulic calculations		[SU1] Assessment of task fulfilment				
[K7_U05] can formulate and perform basic research on engineering, technological or organisational problems in civil engineering		The student is able to define design and control conditions for engineering structures		[SU3] Assessment of ability to use knowledge gained from the subject					
Subject contents	<p>Course content – lecture</p> <p>LECTURE Hydrological cycle. Hydrological properties of catchment area. Parameters of the river catchment. The water balance of the river catchment. Run-off. Surface run-off. Unit hydrograph. Flow in rivers. Storm flood and characteristic flows in rivers. Open channel steady and unsteady flow. Hydrologic statistics. Ice phenomena on rivers. CLASSES and LAB Hydraulic and hydrological computations and some laboratory exercises on hydrological processes.</p>								

Prerequisites and co-requisites	No requirements				
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade		
	Final test	60.0%	30.0%		
	Midterm colloquium	60.0%	40.0%		
	Lab reports	60.0%	30.0%		
Recommended reading	Basic literature	1. Van Te Chow et al., Applied Hydrology, McGRAW-HILL, 1988 2. Van Te Chow, Open-Channel Hydraulics, McGRAW-HILL, 1957 3. Mays, L. Water Resources Engineering, Wiley, 2006			
	Supplementary literature	1. Czetwertyński E., Utrysko B., Hydraulika i hydromechanika, PWN 1986 2. Kubrak J., Hydraulika techniczna, SGGW 1998 3. Byczkowski A., Hydrologia, SGGW 1996 4. Ozga-Zielinska M., Brzezinski J.: Hydrologia stosowana, Wydawnictwo Naukowe PWN Warszawa, 1994.			
	eResources addresses				
Example issues/ example questions/ tasks being completed	- analysis of hydrological processes in catchment, - determination of open-channel hydraulic parameters.				
Practical activites within the subject	Not applicable				

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