

§ GDAŃSK UNIVERSITY § OF TECHNOLOGY

Subject card

Subject name and code	Hydraulics and Hydrology II, PG_00044310									
Field of study	Civil Engineering									
Date of commencement of studies	October 2024		Academic year of realisation of subject			2024/2025				
Education level	second-cycle studies		Subject group			Obligatory subject group in the field of study				
Mode of study	Part-time studies		Mode of delivery			at the university				
Year of study	1		Language of instruction			Polish				
Semester of study	1		ECTS credits			3.0				
Learning profile	general academic profile		Assessment form			assessment				
Conducting unit	Department of Hydraulic Engineering -> Faculty of Civil and Environmental Engineering									
Name and surname	Subject supervisor dr inż. Witold Sterpejkowicz-Wersocki									
of lecturer (lecturers)	Teachers									
Lesson types and methods	Lesson type	Lecture	Tutorial	Laboratory Project		t	Seminar	SUM		
of instruction	Number of study hours	15.0	10.0	0.0	0.0		0.0	25		
	E-learning hours included: 0.0									
	Adresy na platformie eNauczanie:									
Learning activity and number of study hours	Learning activity	Participation in classes includ plan	didactic Participation in consultation hours		n ours	Self-study		SUM		
	Number of study hours	25		5.0		45.0		75		
Subject objectives	The aim of the course is to acquire and expand knowledge and skills related to the description of hydraulic and hydrological processes.									
Learning outcomes	Course outcome		Subject outcome			Method of verification				
	[K7_W11] has deep knowlege of marine and inland hydotechnical constructions; has knowledge about hydraulical and hydrological constrains in design and exploitation of buildings		The student has extended knowledge related to the processes taking place in the catchment, flood water retention and flows in rivers in connection with hydrotechnical constructions.			[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 is able to choose the appropriate calculation method to solve the problem in the field of surface and underground water hydraulics and hydrology. Performs basic calculations related to hydrology as outflow from the catchment area, flows in rivers including design flows for the purpose of designing damming constructions and the development of hydrological information for other hydrotechnical projects.			[SU2] Assessment of ability to analyse information				
Subject contents	LECTURE Water in the ground and groundwater hydraulics, infiltration. Outflow from the catchment. Effective rainfall and surface runoff, temporary unit hydrogram. Flow in rivers, non-homogeneous and undetermined flow. Transformation of flood waves in rivers. Reservoir retention. Flow curve. States and characteristic flows in rivers. Transport of debris in rivers. Termics and ice phenomena in rivers and lakes. EXERCISES Calculation of water seepage in the earth dam. Calculation of the outflow from the catchment. Dimensioning of retention reservoirs. Hydraulic dimensioning of the culvert and devices for dissipating water energy below the culvert.									
Prerequisites and co-requisites	Knowledge of subjects: fluid mechanics, hydraulics and hydrology (previous course), mathematics.									

Assessment methods	Subject passing criteria	Passing threshold	Percentage of the final grade			
and criteria	Written colloquium. Duration 45 minutes	60.0%	100.0%			
Recommended reading	Basic literature Supplementary literature	 Byczkowski A.: Hydrologia, Tor Warszawa 1996 Szymiewicz R., Gąsiorowski D. Wydawnictwo WNT, Warszawa Mitosek M.: Mechnika płynów v Wydawnictwo Naukowe PWN, Ozga-Zielińska M., Brzeziński Wydawnictwo Naukowe PWN, Sawicki J.: Przepływy ze swobo Warszawa 1998. Lambor J.: Hydrologia inżyniers Warszawa 1971 Kubrak J.: Hydraulika techniczr Szymkiewicz R.: Modelowanie rzekach i kanałach, Wydawnict 2000. 	n 1, Tom 2, Wydawnictwo SGGW, : Podstawy hydrologii dynamicznej, 2016 v inżynierii środowiska, Warszawa 2001. I.:Hydrologia stosowana, Warszawa 1994. odną powierzchnią", PWN ska, Wydawnictwo ARKADY, ska, SGGW Warszawa 1998. matematyczne przepływów w wo Naukowe PWN Warszawa,			
		 Sobota J.: Hydraulika i Hydrologia, Wydawnictwo Uniw. Przyrodniczy we Wrocławiu, Wrocław 2004 				
	eResources addresses					
Example issues/ example questions/ tasks being completed						
Work placement	Not applicable					