GDAŃSK UNIVERSITY OF TECHNOLOGY

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	2	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 Kolerski	
	Teachers	Parisa Radan dr hab. inż. Tomasz Kolerski	

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

eNauczanie source addresses:

Moodle ID: 4548 Hydraulics and hydrology 2026
https://enauczanie.pg.edu.pl/2025/course/view.php?id=4548

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

Students should master the following capacities:

- 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_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 ho to determine prameters of hydraulic structures base on hydraulic calcualtions	[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
[K7_W11] has deep knowlege of marine and inland hydotechnical constructions; has knowledge about hydraulical and hydrological constrains in design and exploitation of buildings	Student knows how to calculate hydarulics of hydroengineering structures, Knows procedures to calculate effective rainffall, knows how to calcualte flood storage of the retention reservoirs	[SW1] Assessment of factual knowledge

<table>
<tr><td>Subject contents</td><td>Course content – lecture
LECTURE Hydrological cycle. Hydrological proprieties of catchment area. Parameters of the river catchment. The water balance of the river catchment. Run-off. Surface run-off. Unit hydrogram. 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 on hydrological processes.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>No requirements</td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Final test</td><td>60.0%</td><td>30.0%</td></tr>
<tr><td>Midterm colloquium</td><td>60.0%</td><td>40.0%</td></tr>
<tr><td>Lab reports</td><td>60.0%</td><td>30.0%</td></tr>
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</td></tr>
<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>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, Willey, 2006</td></tr>
<tr><td>Supplementary literature</td><td>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-Zielińska M., Brzeziński J.: Hydrologia stosowana, Wydawnictwo Naukowe PWN Warszawa,1994.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
</table>
</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>- analysis of hydrological processes in catchment,

- determination of open-channel hydraulic parameters.</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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