GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Integrated Water Resources Management, PG_00059984		
Field of study	Environmental Engineering		
Date of commencement of studies	February 2026	Academic year of realisation of subject	2026/2027
Education level	second-cycle studies	Subject group	Obligatory subject group in the field of study 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	Polish
Semester of study	2	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 hab. inż. Tomasz Kolerski	
	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

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	5.0	19.0	54

Subject objectives

The aim of the course is to acquaint the student with water resources management in Poland based on the main planning documents

Learning outcomes

Course outcome	Subject outcome	Method of verification
K7_W09	Transformation of rainfall into runoff in a natural catchment and including storm sewage	[SW3] Assessment of knowledge contained in written work and projects
K7_U10	Analysis of the operation of the Kielpinek reservoir during the flood surge	[SU4] Assessment of ability to use methods and tools
K7_W01	Basics of using Quantum GIS (QGIS)	[SW3] Assessment of knowledge contained in written work and projects
K7_U06	During the classes, the basic functionalities of the QGIS program will be presented, enabling the analysis of spatial data regarding the catchment area: creating and editing vector layers creating and editing layers from measurement points loading WMS layers analysis of the digital terrain model	[SU4] Assessment of ability to use methods and tools

<table>
<tr><td>Subject contents</td><td>Course content – lecture
1. Water resources management in Poland
2. Planned investment of the E40 waterway as an example of integrated water resources management
3. Drought Counteraction Plan
4. Catalog of actions; Examples of water retention actions
5. Maintenance works on surface waters
6. Analysis of pressure and assessment of their impact on the condition of surface waters
7. Second update of the Water Management Plan (2aPGW);
8. 2aPGW: Catalog of action
9. Integrated actions to ensure good ecological potential of waters
10. Management of water resources in winter, Winter floods
11. Heat balance of snow cover
12. Melting of the snow
13. Siarzewo dam; example of a multi-purpose object

Course content – exercises
Determination of maximum flows in uncontrolled river catchments using indirect methods:

• Regional regression equation
• Snowmelt formula
• Rainfall formula</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Hydrology, Hydraulics, Water Resources Management</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>test</td><td>60.0%</td><td>50.0%</td></tr><tr><td>project</td><td>60.0%</td><td>50.0%</td></tr></table></td></tr>
<tr><td>Recommended reading</td><td><table><tr><td>Basic literature</td><td>• Ustawa Prawo Wodne
• Katalog dobrych praktyk w zakresie robót hydrotechnicznych i prac utrzymaniowych wraz z ustaleniem zasad ich wdrażania, Kraków 2018
• II aktualizacja Planu Gospodarowania Wodami
• Plan Przeciwdziałania Skutkom Suszy</td></tr><tr><td>Supplementary literature</td><td>• Water Framework Directive</td></tr><tr><td>eResources addresses</td><td></td></tr></table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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