GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Geology & Hydrogeology, PG_00072569		
Field of study	Civil Engineering		
Date of commencement of studies	October 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	English
Semester of study	1	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

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

Work wth geological and hydrogeological maps; description of chosen region regarding: superficial deposits and hydrogeological conditions.Recognition and description of minerals, recognition and description of rocks, technical properties of rocks, identification of applied rocks; description of indicated rocks used for building purposes

Water cycle, recognition of types of aquifers, its characteristics, analysis of geological and hydrogeological data, determination of the conductivity. Principles of groundwater flow, flow to wells. Dewatering of excavation and human impact on the environment

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_U02] interprets, in an in-depth way, phenomena and relationships between processes in the construction industry, using modern knowledge in line with the main trends in the development of scientific disciplines related to the field of study	Student can make interpretation of hydrogeological measurement	[SU1] Assessment of task fulfilment
[K7_W01] identifies in-depth the phenomena related to the field of study and the theories describing them, indicating reliable sources of knowledge and information relevant to the issues analysed	Student has knowledge about influence of civil engineering on the environment	[SW3] Assessment of knowledge contained in written work and projects

<table>
<tr><td>Subject contents</td><td>Course content – lecture

Work with geological and hydrogeological maps; description of chosen region regarding: superficial deposits and hydrogeological conditions.Recognition and description of minerals, recognition and description of rocks, technical properties of rocks, identification of applied rocks; description of indicated rocks used for building purposes

Water cycle, recognition of types of aquifers, its characteristics, analysis of geological and hydrogeological data, determination of the conductivity. Principles of groundwater flow, flow to wells. Dewatering of excavation and human impact on the environment.

Course content – exercises

Analysis of geological and hydrogeological materials: maps, cross-sections, and profiles; analysis of geomorphological and hydrogeological conditions in various regions of Poland; preparation of a geological and hydrogeological cross-section; plotting a hydroisohypse map; basic hydrogeological calculations; design of excavation dewatering.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>knowledge of soil mechanic</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>reports from geology</td><td>60.0%</td><td>34.0%</td></tr>
<tr><td>reports from hydrogeology</td><td>60.0%</td><td>66.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>1. Domenico, Schwartz: Physical nad Chemical Hydrogeology 2. Schwartz, Zhang: Fundamentals od Ground Water 3. Fetter C.W.: Applied Hydrogeology 4. Żyłka R.: Geological Dictionary</td></tr>
<tr><td>Supplementary literature</td><td>1. Finkl C.W: The Encyclopedia of Applied Geology 2. Bell F.G.: Environmental Geology Principles and Practise .</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>types of aquifer, how to determine conductivity, ground water flow conection with surface water</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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