



Subject card

Subject name and code	Geology, PG_00059247						
Field of study	Civil Engineering						
Date of commencement of studies	October 2026	Academic year of realisation of subject				2026/2027	
Education level	first-cycle studies	Subject group				Obligatory subject group 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				3.0	
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. Beata Jaworska-Szulc				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	15.0	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		4.0		26.0	75
Subject objectives	<p>Student gets acquainted with internal and external geological processes. Learning about the impact of geological processes on subsoil. Understanding the specificity of groundwater occurrence and its impact on constructions.</p> <p>Getting practical skills in recognising and description of most common minerals and rocks. Become acquainted with diverse geological and hydrogeological data (profiles, maps, cross-sections) and gaining practical knowledge how to interpret it. Learning rules how to draw hydrogeological cross-sections.</p>						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W01] Demonstrate knowledge and understanding of mathematics as well as sciences and engineering disciplines underlying civil engineering at a level necessary to achieve the other programme outcomes.		Understanding the impact of geological processes on subsoil, and is also able to assess the impact of construction projects on the environment.		[SW1] Assessment of factual knowledge		
	[K6_U01] Apply knowledge and understanding of mathematics as well as sciences and engineering disciplines underlying civil engineering to solve engineering problems and issues.		Student describes internal and external geological processes; explains natural geological threats; interprets the influence of geological processes on the Earth's relief and mineral composition. Understanding the specificity of groundwater occurrence and its impact on constructions.		[SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment		

Subject contents	<p>Course content – lecture Lecture: the Earth's layers, basis of stratigraphy; internal processes (volcanism, plutonism, metamorphism); plate tectonic theory; basis of tectonics; isostasy; the rock cycle; external processes (weathering, erosion, mass wasting); glacial, stream, marine, eolian processes. Hydrogeology.</p> <p>Laboratory: minerals (physical properties, origin, identification of basic minerals), igneous, sedimentary, metamorphic rocks (origin, mineral composition, textures, classification, identification).</p> <p>Project: Study of geological and hydrogeological maps; drawing of hydrogeological cross-sections; analysis of groundwater occurrence for a chosen region.</p>											
Prerequisites and co-requisites												
Assessment methods and criteria	<table border="1"> <thead> <tr> <th>Subject passing criteria</th> <th>Passing threshold</th> <th>Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td>2 tests</td> <td>60.0%</td> <td>50.0%</td> </tr> <tr> <td>2 laboratory tests and projects</td> <td>60.0%</td> <td>50.0%</td> </tr> </tbody> </table>	Subject passing criteria	Passing threshold	Percentage of the final grade	2 tests	60.0%	50.0%	2 laboratory tests and projects	60.0%	50.0%		
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2 laboratory tests and projects	60.0%	50.0%										
Recommended reading	<p>Basic literature</p>	<ol style="list-style-type: none"> 1. Mizerski W: Geologia dynamiczna 2. Lutgens, Tarbuck, Tasa, Essentials of geology 3. Thompson & Turk, Introduction to Physical Geology 4. Jain, Fundamentals of Physical Geology 										
	<p>Supplementary literature</p>	<ol style="list-style-type: none"> 1. Hefferan, O'Brien, Earth Materials 2. Czubla P, Mizerski W, Świerczewska-Gładysz E: Przewodnik do ćwiczeń z geologii 										
	<p>eResources addresses</p>											
Example issues/ example questions/ tasks being completed	<p>Indicate geological events occurring at divergent plate boundaries?</p> <p>What are the main rock forming minerals of gabbro; indicate the stage of magma crystallization for this rock.</p> <p>Describe conditions of granite forming.</p> <p>What is the subduction zone ?</p> <p>What are the main processes responsible for the Earth relief?</p> <p>How to distinguish between granite and gneiss. Indicate also common properties of the rocks.</p> <p>Give examples of the possibilities of using geothermal energy.</p>											
Practical activities within the subject	Not applicable											

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