



## Subject card

Subject name and code	Geology, PG_00059247						
Field of study	Civil Engineering						
Date of commencement of studies	October 2023	Academic year of realisation of subject			2023/2024		
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						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Beata Jaworska-Szulc					
	Teachers	dr hab. Małgorzata Pruszkowska-Caceres dr inż. Maria Przewłócka, doc. PG dr inż. Anna Gumuła-Kawęcka dr hab. inż. Beata Jaworska-Szulc dr Dawid Potrykus					
Lesson types and methods of instruction	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>Gaining 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_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.			[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information		
	[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		

Subject contents	<p>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	Subject passing criteria	Passing threshold	Percentage of the final grade
	2 laboratory tests and projects	60.0%	50.0%
	2 tests	60.0%	50.0%
Recommended reading	Basic literature	<ol style="list-style-type: none"> <li>1. Mizerski W: Geologia dynamiczna</li> <li>2. Lutgens, Tarbuck, Tasa, Essentials of geology</li> <li>3. Thompson &amp; Turk, Introduction to Physical Geology</li> <li>4. Jain, Fundamentals of Physical Geology</li> </ol>	
	Supplementary literature	<ol style="list-style-type: none"> <li>1. Hefferan, O'Brien, Earth Materials</li> <li>2. Czubla P, Mizerski W, Świerczewska-Gładysz E: Przewodnik do ćwiczeń z geologii</li> </ol>	
	eResources addresses	Adresy na platformie eNauczanie:	
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>		
Work placement	Not applicable		