

**Subject card**

<b>Subject name and code</b>	Applied geology - laboratory classes, PG_00193082						
<b>Field of study</b>	Geology						
<b>Date of commencement of studies</b>	October 2026	<b>Academic year of realisation of subject</b>			2027/2028		
<b>Education level</b>	Bachelor's studies	<b>Subject group</b>			Obligatory subject group in the field of study		
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>			at the university		
<b>Year of study</b>	2	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	4	<b>ECTS credits</b>			2.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>			credit		
<b>Conducting unit</b>	Department of Geophysics -> Faculty of Oceanography and Geography -> Rector						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr hab. Leszek Łęczyński				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	0.0	0.0	30.0	0.0	0.0	30
	E-learning hours included: 0.0						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	<b>Number of study hours</b>	30		2.0		18.0	50
<b>Subject objectives</b>	Exercises: Practical determination of soil properties by selected methods; familiarization with selected analyses used in applied geology.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[GEOLL3_U01] is able to apply basic measurement and analytical techniques in the field and in the laboratory, plans to conduct research and measurements	can perform the in-field and laboratory analyses of soil samples, familiarized in class	[SU5] implementation of a problem task [SU8] observation of student's independent or team work
	[GEOLL3_W06] knows statistical and IT tools as well as the principles of preparing engineering and geological documentation and cartographic materials	knows the methods of soil analysis necessary for the preparation of geological-engineering documentation	[SW4] test/exam - oral or written
	[GEOLL3_K05] is willing to comply with the principles of occupational safety and health, takes care of specialized equipment entrusted to them, is aware of the risk connected with the performed work	understands the rules of health and safety in a geological laboratory knows how to properly and safely use the equipment available in the laboratory	[SK1] oral statement/conversation/discussion [SK2] presentation/project/paper/report [SK4] test/exam - oral or written
	[GEOLL3_U10] is able to work individually and cooperate in laboratory and field groups performing various functions in them and performing various tasks	can work in the geology laboratory individually and in a group	[SU5] implementation of a problem task [SU8] observation of student's independent or team work
	[GEOLL3_U02] has the skill of analytical and synthetic way of reasoning leading to correct inference based on the results obtained or the facts presented	can perform a soil analysis, interpret the result, and evaluate possible errors made in the analysis	[SU1] oral statement/conversation/discussion [SU2] presentation/project/paper/report [SU4] test/exam - oral or written
	[GEOLL3_W02] knows and understands the terminology appropriate in science and natural sciences	knows and understands terminology related to applied geology	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion
	[GEOLL3_W08] knows the basic principles of occupational health and safety, legal regulations conditioning geological and engineering activities	knows the rules of health and safety in a geological laboratory knows the ISO Standards governing the performance of basic soil analysis	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion
	[GEOLL3_U04] is able to use specialized computer software and mathematical and statistical methods in the analysis of geological data	can calculate and elaborate on the results of laboratory analyses of soils carried out	[SU2] presentation/project/paper/report [SU4] test/exam - oral or written
Subject contents	<p>Investigations of soil properties by macroscopic method Selected laboratory methods for testing soils (moisture content, volumetric and specific density of soil skeleton, content of organic components organic matter, cohesion, shear strength) Granulometric analysis of soil by sieve method. Granulometric analysis of soil by pipette and areometric method.</p> <p>Determination of calcium carbonate content in soil by Scheibler method. Determination of liquid limit in soil by Cassagrand method and Vasiliev method. Soil shear in a 3-axial compression apparatus.</p>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	test	51.0%	100.0%
Recommended reading	Basic literature	<p>Bażyński J., Drągowski A., Frankowski Z., Kaczyński R., Rybicki S., Wysokiński L., 1999. Zasady sporządzania dokumentacji geologiczno inżynierskich, Wyd. Ministerstwo Środowiska, Warszawa</p> <p>Kostrzewski W., 2001, Parametry geotechniczne gruntów budowlanych oraz metody ich oznaczania. Wyd. Politechniki Poznańskiej</p> <p>Kostrzewski W., 1980. Mechanika gruntów. Parametry geotechniczne gruntów budowlanych oraz metody ich wyznaczania, Wyd. Naukowe PWN, Warszawa</p> <p>Kowalski W.C., 1988. Geologia inżynierska, Wyd. Geologiczne, Warszawa</p> <p>Myślińska E., 1989. Przewodnik do ćwiczeń z gruntoznawstwa, Wyd. Uniwersytetu Warszawskiego</p> <p>Myślińska E., 1998. Laboratoryjne badania gruntów, Wyd. Naukowe PWN, Warszawa</p> <p>Pisarczyk S., Rymsza B., 1993. Badania laboratoryjne i polowe gruntów, Oficyna Wydawnicza Politechniki Warszawskiej</p> <p>Wiłun Z., 1987. Zarys geotechniki, Wyd. Komunikacji i Łączności, Warszawa</p>	

	Supplementary literature	Frankowski Z., Graniczny M., Bednarczyk B., Kramarska R., Pruszek Z., Przędziecki P., Szmytkiewicz M., Werno M., Zachowicz J., 2009. Zasady dokumentowania geologiczno - inżynierskiego warunków posadowienia obiektów budownictwa morskiego i zabezpieczenia brzegu morskiego, Wyd. PIG, Warszawa Ingut R, 1973. Terenowe badania geologiczno inżynierskie, Wyd. Geologiczne, Warszawa PN-86/B-02480 Grunty budowlane. Określenia, symbole, podział i opis gruntów PN-75/B-04481 Grunty budowlane. Badania laboratoryjne PN-88/B-04481 Grunty budowlane. Badania próbek gruntu
Example issues/ example questions/ tasks being completed	eResources addresses	Give the types of consistency of cohesive soils and describe how to distinguish them macroscopically.
Work placement		Not applicable

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