University of Gdańsk

Subject card

Subject name and code	Applied geology - exercises, PG_00091111		
Field of study	Geology		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2025/2026
Education level	Bachelor's 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	2	Language of instruction	Polish
Semester of study	4	ECTS credits	2.0
Learning profile	academic	Assessment form	credit
Conducting unit	Department of Geophysics -> Faculty of Oceanography and Geography -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Karolina Trzcińska	
	Teachers	dr Karolina Trzcińska	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	30.0	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	12.0	10.0	52

Subject objectives

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_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_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
[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_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_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_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_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_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

Subject contents

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.

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.

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

Bażyński J., Drągowski A., Frankowski Z., Kaczyński R., Rybicki S., Wysokiński L., 1999. Zasady sporządzania dokumentacji geologiczno inżynierskich, Wyd. Ministerstwo Środowiska, Warszawa
Kostrzewski W., 2001, Parametry geotechniczne gruntów budowlanych oraz metody ich oznaczania. Wyd. Politechniki Poznańskiej
Kostrzewski W., 1980. Mechanika gruntów. Parametry geotechniczne gruntów budowlanych oraz metody ich wyznaczania, Wyd. Naukowe PWN,
Warszawa
Kowalski W.C., 1988. Geologia inżynierska, Wyd. Geologiczne, Warszawa
Myślińska E., 1989. Przewodnik do ćwiczeń z gruntoznawstwa, Wyd. Uniwersytetu Warszawskiego
Myślińska E., 1998. Laboratoryjne badania gruntów, Wyd. Naukowe PWN, Warszawa
Pisarczyk S., Rymsza B., 1993. Badania laboratoryjne i polowe gruntów, Oficyna Wydawnicza Politechniki Warszawskiej
Wiłun Z.,1987. Zarys geotechniki, Wyd. Komunikacji i Łączności, Warszawa

	Supplementary literature	Frankowski Z., Graniczny M., Bednarczyk B., Kramarska R., Pruszak Z., Przezdziecki P., Szmytkiewicz M., Werno M., Zacho-wicz 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
	eResources addresses	
Example issues/ example questions/ tasks being completed	Give the types of consistency of cohesive soils and describe how to distinguish them macroscopically.	
Work placement	Not applicable	

Document generated electronically. Does not require a seal or signature.