GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00065237		
Field of study	Geoinżynieria		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2025/2026
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	2	Language of instruction	Polish
Semester of study	3	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 -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Angelika Duszyńska	
	Teachers	dr inż. Angelika Duszyńska dr inż. Anna Gumuła-Kawęcka	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	20.0	10.0	0.0	0.0	0.0	30

E-learning hours included: 0.0

eNauczanie source address: https://enauczanie.pg.edu.pl/2025/course/view.php?id=2205

Moodle ID: 2205 Geoinżynieria IOSiE sem. 3 2025/2026
https://enauczanie.pg.edu.pl/2025/course/view.php?id=2205

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	0.0	0.0	30

Subject objectives

The aim of the course is to familiarize students with issues related to soil, the use of alternative materials (in civil and environmental engineering) and sustainable development.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W01] demonstrates knowledge and understanding of mathematics and other exact sciences and engineering disciplines at the level necessary to solve theoretical, engineering and technological problems and issues.	The student understands science and uses it to solve problems related to, among others, soil and alternative materials.	[SW1] Ocena wiedzy faktograficznej [SW2] Ocena wiedzy zawartej w prezentacji
[K6_U01] applies knowledge of mathematics and other exact sciences and engineering disciplines to solve theoretical, engineering and technological problems and issues.	The student applies knowledge from various disciplines to solve geoengineering problems related to the environment shaping.	[SU3] Ocena umiejętności wykorzystania wiedzy uzyskanej w ramach przedmiotu [SU2] Ocena umiejętności analizy informacji
[K6_U04] formulates research problems and selects appropriate research methods (information acquisition, simulations, experimental methods) in the field of technologies related to the recovery of raw materials and energy in order to solve specific tasks and to report research results.	The student selects appropriate research methods in the field of technologies related to the recovery of raw materials and energy in order to solve tasks related to sustainable development.	[SU1] Ocena realizacji zadania [SU4] Ocena umiejętności korzystania z metod i narzędzi
[K6_W04] demonstrates knowledge and understanding of research methods (information acquisition, simulations, experimental methods) in the field of technologies related to the recovery of raw materials and energy.	The student demonstrates understanding of research methods (information acquisition) in the field of technologies related o the recovery of raw materials and energy.	[SW2] Ocena wiedzy zawartej w prezentacji [SW1] Ocena wiedzy faktograficznej

Subject contents

Course content – lecture
Earth's structure. Basic soil characteristics. Earth's natural resources and their use. Carbon footprint and possibilities of its reduction. Shaping the environment. Reclamation of degraded areas. Use of anthropogenic materials in geoengineering. Geosynthetics as support for sustainable development.

Course content – exercises
Identification of selected materials used in geoengineering, including rocks, soils, and geosynthetics. Geotechnical analyses in accordance with EC7.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
test	60.0%	60.0%
raport	60.0%	40.0%

Recommended reading

Basic literature

1. Jastrzębska M. i inni: Zrównoważona Geotechnika 1. Wybrane materiały alternatywne. PWN Warszawa 2024
2. Pisarczyk S.: Mechanika gruntów. OWPW, Warszawa 2017 (2022).
3. Wiłun Z.: Zarys geotechniki. Wydawnictwo Komunikacji i Łączności, Warszawa 2024.

Supplementary literature

1. Bzówka J. i inni: Geotechnika komunikacyjna. Wydawnictwo Politechniki Śląskiej. 2015
2. Bolt A., Cichy W., Topolnicki M., Zadroga B.: Mechanika gruntów w zadaniach. Skrypt PG. Gdańsk 1985.
3. Pisarczyk S.: Grunty nasypowe. Właściwości geotechniczne i metody ich badania. OWPW, Warszawa 2004.
4. Stryczek S.: Podstawy geoinżynierii. Wydawnictwo AGH. Kraków 2021
5. Wesołowski A.i inni: Geosyntetyki w konstrukcjach inżynierskich. Wydawnictwo SGGW. Warszawa 2000.

eResources addresses

Example issues/ example questions/ tasks being completed

Rock and soil identification. Types of anthropogenic/alternative materials. Geosynthetics support sustainable development. Zero-emission construction. Energy resources.

Practical activites within the subject

Not applicable