

。 GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00064670								
Field of study	Recycling and Energy Recovery								
Date of commencement of studies	October 2023		Academic year of realisation of subject			2024/2025			
Education level	first-cycle studies		Subject group						
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 Engineeri						ngineering		
Name and surname	Subject supervisor		dr inż. Angelika Duszyńska						
of lecturer (lecturers)	Teachers		dr inż. Angelika Duszyńska dr inż. Anna Gumuła-Kawęcka						
Lesson types and methods	Lesson type	Lecture	Tutorial	Laboratory	Projec	Project Semin		SUM	
of instruction	Number of study hours	20.0	10.0	0.0	0.0		0.0	30	
	E-learning hours included: 0.0								
Learning activity and number of study hours	Learning activity	Participation in classes includ plan	n didactic ed in study	Participation in consultation h	Participation in consultation hours		udy	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 out	Subject outcome			Method of verification				
	[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] Assessment of knowledge contained in presentation [SW1] Assessment of factual knowledge			
	[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] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools			
	[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] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information			
	[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] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation			

Subject contents	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.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade				
	presentation	60.0%	40.0%				
	test	60.0%	60.0%				
Recommended reading	Basic literature	 Jastrzębska M. i inni: Zrównow materiały alternatywne. PWN V Pisarczyk S.: Mechanika grunto Wiłun Z.: Zarys geotechniki. Wy Łączności, Warszawa 2024. 	ażona Geotechnika 1. Wybrane Varszawa 2024 ów. OWPW, Warszawa 2017 (2022). ydawnictwo Komunikacji i				
	 Bzówka J. i inni: Geotechnika komunikacyjna. Wydawn Politechniki Śląskiej. 2015 Bolt A., Cichy W., Topolnicki M., Zadroga B.: Mechanik zadaniach. Skrypt PG. Gdańsk 1985. Pisarczyk S.: Grunty nasypowe. Właściwości geotechni metody ich badania. OWPW, Warszawa 2004. Stryczek S.: Podstawy geoinżynierii. Wydawnictwo AGI 2021 Wesołowski A.i inni: Geosyntetyki w konstrukcjach inży Wydawnictwo SGGW. Warszawa 2000. Zadroga B., Olańczuk-Neyman K.: Ochrona i rekultywa gruntowego. Aspekty geotechniczno-budowlane. Wyd. 		komunikacyjna. Wydawnictwo ., Zadroga B.: Mechanika gruntów w 1985. e. Właściwości geotechniczne i Varszawa 2004. nierii. Wydawnictwo AGH. Kraków yki w konstrukcjach inżynierskich. wa 2000. K.: Ochrona i rekultywacja podłoża iczno-budowlane. Wyd. PG, 2001.				
	eResources addresses	Adresy na platformie eNauczanie:					
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.						
Work placement	Not applicable						

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