



## Subject card

Subject name and code	Landfills, PG_00041421						
Field of study	Civil Engineering						
Date of commencement of studies	February 2024			Academic year of realisation of subject		2024/2025	
Education level	second-cycle studies			Subject group		Optional 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		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			prof. dr hab. inż. Lech Bałachowski			
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	0.0	30.0	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		5.0		40.0	75
Subject objectives	Discussion of problems related with wastes management and design, exploitation, closure and recultivation of landfills						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K7_U15] has advanced skills in civil engineering within offered specialization/profile	Student is able to calculate the waste settlements in landfills.			[SU3] Assessment of ability to use knowledge gained from the subject		
	[K7_W14] knows and applies building codes and obeys the Construction Law; has knowledge on environmental impact of investment realisation	Student knows the law concerning the waste management and landfilling.			[SW1] Assessment of factual knowledge		
	[K7_W12] has deep and theoretical firm knowledge about geotechnical investigation, the rules of geotechnical design and engineering geology; knows the complicated processes in soil, techniques of foundations, draining systems, soil strengthening, geosynthetics applications, underground constructions and earthworks	Student is able to design impermeable barriers in landfills.			[SW1] Assessment of factual knowledge		
[K7_K02] Recognizes the significance of knowledge in solving cognitive and practical problems; reliably evaluates results of his own and team research	Student knows the requirements concerning the localization and monitoring of landfills.			[SK1] Assessment of group work skills			
Subject contents	Circular economy. Waste types. By-products and their use. Parameters of wastes. Localization of landfills, impermeable barriers, landfills closure and monitoring. Recultivation of landfills, use of biogaz. Wastes compaction.						
Prerequisites and co-requisites	Knowledge of soil mechanics, soil improvement, geoen지니어ing and hydraulics						
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	Active participation	80.0%			40.0%		
	Presenting	70.0%			60.0%		
Recommended reading	Basic literature			<a href="http://www.smocs.eu">http://www.smocs.eu</a>			

	Supplementary literature	Environmental geotechnology  DredgDikes guidelines  Smocs guidelines
	eResources addresses	Adresy na platformie eNauzanie:
Example issues/ example questions/ tasks being completed	Drainage system on landfills  Impermeable barriers in landfills  Compaction of municipal wastes  Management and use of by-products	
Work placement	Not applicable	

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