



Subject card

Subject name and code	, PG_00071162						
Field of study	Recycling and Energy Recovery						
Date of commencement of studies	October 2023	Academic year of realisation of subject			2025/2026		
Education level	first-cycle studies	Subject group					
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	3	Language of instruction			Polish		
Semester of study	6	ECTS credits			2.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Environmental Engineering Technology -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Krzysztof Czerwionka					
	Teachers	dr hab. inż. Krzysztof Czerwionka					
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	10.0	10.0	0.0	0.0	0.0	20
	E-learning hours included: 0.0						
	eNauczanie source addresses: Moodle ID: 4095 Biologiczne metody przetwarzania odpadów (PG_00071162) https://enauczanie.pg.edu.pl/2025/course/view.php?id=4095						
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	20	0.0	0.0	20		
Subject objectives	The aim of the course is to familiarize students with the environmental impact of processes related to biological waste treatment methods.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_W05] analyzes practical issues in the field of recovery of raw materials and energy, using knowledge and understanding of: materials, devices and tools, processes and technologies.	The student has knowledge related to the environmental impact of biological waste treatment methods.			[SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects		
	[K6_W06] integrates and extracts data from multiple sources to analyze complex engineering and technology problems.	The student has knowledge about the integrated impact of investments on the environment			[SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects		
	[K6_U06] uses information technology to improve data analysis and design support.	The student has knowledge of methods for assessing the impact of investments on the environment.			[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject [SU5] Assessment of ability to present the results of task		
[K6_U07] creates solutions aimed at implementing legal regulations and managing raw materials/ waste on the premises of the company, as well as organizing work in accordance with legal standards and health and safety regulations.	The student is able to prepare documentation for the management of municipal sewage sludge.			[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject [SU5] Assessment of ability to present the results of task			

Subject contents	Course content – lecture Biological waste treatment processes (composting, anaerobic digestion). Best available techniques for biological waste treatment processes. Waste management. Water, wastewater, and stormwater management. Impact on the acoustic climate. Air emissions. Impact on climate and assessment of adaptation to climate change.		
	Course content – exercises Development of a technological project for the agricultural management of municipal sewage sludge.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Passing the lectures	60.0%	60.0%
	Passing the project	60.0%	40.0%
Recommended reading	Basic literature	<p>1. Biologiczne przetwarzanie odpadów. Jędrzcak Andrzej, Wydawnictwo Naukowe PWN, 2007.</p> <p>2. Mechaniczno-biologiczne przetwarzanie frakcji biodegradowalnej odpadów komunalnych. Praca pod redakcją naukową Grzegorza Siemiątkowskiego, Opole 2012.</p> <p>3. Mechaniczno-biologiczne przetwarzanie i składowanie odpadów w świetle nowo obowiązujących przepisów, Piotr Manczarski. ODPADYHELP.pl, 2012.</p>	
	Supplementary literature	<p>1. Ustawa z dnia 14 grudnia 2012 r. o odpadach (Dz. U. z 2012 r. poz. 1587, późn. zm.) OBWIESZCZENIE MARSZAŁKA SEJMU RZECZYPOSPOLITEJ POLSKIEJ z dnia 7 lipca 2023 r. w sprawie ogłoszenia jednolitego tekstu ustawy o odpadach</p> <p>2. Rozporządzenie Ministra Środowiska z dnia 6 lutego 2015 r. w sprawie stosowania komunalnych osadów ściekowych (Dz. U. z 2015, poz. 23) - OBWIESZCZENIE MINISTRA KLIMATU I ŚRODOWISKA z dnia 18 listopada 2022 r. w sprawie ogłoszenia jednolitego tekstu rozporządzenia Ministra Środowiska w sprawie stosowania komunalnych osadów ściekowych</p> <p>3. Rozporządzenie Ministra Klimatu z dnia 2 stycznia 2020 r. w sprawie katalogu odpadów (Dz.U. z 2020r., poz. 10)</p>	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Practical activities within the subject	Not applicable		

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