GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00064672		
Field of study	Technologie przetwarzania odpadów biodegradowalnych		
Date of commencement of studies	October 2024	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	2	Language of instruction	Polish
Semester of study	3	ECTS credits	10.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Environmental Engineering Technology -> Faculty of Civil and Environmental Engineering -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Eliza Kulbat	
	Teachers	dr hab. inż. Eliza Kulbat	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	0.0	100.0	0.0	100

E-learning hours included: 0.0

eNauczanie source addresses:

Moodle ID: 2321 Technologie przetwarzania odpadów biodegradowalnych
https://enauczanie.pg.edu.pl/2025/course/view.php?id=2321

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	100	10.0	140.0	250

Subject objectives

The aim of the course is to introduce students to modern technologies for the treatment of biodegradable waste. The course includes activities in a team project format. Students will develop plans to perform the proposed experiments. Their realisation will consist in getting acquainted with the operation of selected industrial installations (agricultural biogas plant and municipal waste treatment plant), taking samples for testing and conducting efficiency tests of the analysed processes under laboratory conditions. The concluding stage of the course will be the preparation of reports by the students and discussion of the results and conclusions with the class instructors.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U03] designs processes, technologies and systems related to the recovery of raw materials and energy, using appropriate concepts, standards and design methods.	Student designs processes, technologies and systems related to the recovery of raw materials and energy from biodegradable waste.	[SU4] Ocena umiejętności korzystania z metod i narzędzi [SU2] Ocena umiejętności analizy informacji [SU1] Ocena realizacji zadania
[K6_U05] plans, prepares and conducts engineering activities in the field of raw materials and energy recovery, applying practical knowledge and understanding of the specificity of materials, devices and tools, processes and technologies.	Student plans, prepares and conducts engineering activities for the recovery of raw materials and energy from biodegradable waste, applying practical knowledge and understanding of specific materials, equipment and tools, processes and technologies.	[SU4] Ocena umiejętności korzystania z metod i narzędzi [SU3] Ocena umiejętności wykorzystania wiedzy uzyskanej w ramach przedmiotu [SU2] Ocena umiejętności analizy informacji
[K6_W03] identifies problems and phenomena related to the recovery of raw materials and energy as well as applicable concepts, standards and design methods and is aware of their limitations.	Student identifies the problems and phenomena related to the recovery of raw materials and energy from biodegradable waste and the applicable concepts, standards and design methods and is aware of their limitations.	[SW3] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym [SW1] Ocena wiedzy faktograficznej
[K6_K02] cooperates with other people in the implementation of teamwork, both as a leader and a team member, effectively achieving the assumed goals.	Student interacts with others in the implementation of teamwork, both as a leader and as a member of a team, achieving the set goals effectively.	[SK5] Ocena umiejętności rozwiązywania problemów występujących w praktyce [SK3] Ocena umiejętności organizacji pracy [SK1] Ocena umiejętności pracy w grupie

Subject contents

The project has been planned as a combination of classes conducted at industrial facilities (at an agricultural biogas plant and a municipal waste treatment facility) and original laboratory classes. The classes will include technological excursions to industrial facilities combined with sampling of biodegradable waste. The collected samples will be used during laboratory work conducted in groups in the laboratories of the WILiŚ KTWiŚ. Students will develop the assumptions of the waste treatment process, select appropriate methods and apply them in laboratory studies. The final stage of the course will be the development of reports by the students and a workshop to summarise the project.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Evaluation of the report	60.0%	100.0%

Recommended reading

Basic literature	Podstawy gospodarki odpadami, Rosik-Dulewska C., wyd. PWN, W-wa 2015
Supplementary literature	Kompostowanie odpadów i użytkowanie kompostu, Siuta J., Wasiak G., monografia wyd. IOŚ Technologie Energii Odnawialnej Biogazownie rolnicze, Głaszczka A. i in., Multico 2011 Biogas Production, Balagurusamy N., Springer Nature Switzerland AG, styczeń 2021
eResources addresses	

Example issues/ example questions/ tasks being completed

Measurement of biogas quantity and composition in reactors with different inputs.

Gravimetric analysis of compost.

Practical activites within the subject

Not applicable

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