



Subject card

Subject name and code	Biotechnology of sewage sludge and waste, PG_00059982						
Field of study	Environmental Engineering						
Date of commencement of studies	February 2026		Academic year of realisation of subject		2026/2027		
Education level	second-cycle studies		Subject group		Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	1		Language of instruction		Polish		
Semester of study	2		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. Katarzyna Kolečka				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	15.0	0.0	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		20.0	55
Subject objectives	The aim of the course is to familiarize students and to deepen their knowledge of the processing and management of waste and sewage sludge using biotechnology.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K7_U10		The student is capable of designing an advanced technological scheme for the utilization of sewage sludge and waste management.		[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject		
	K7_U12		The student can analyze and evaluate, from both technical and economic perspectives, solutions and the operation of facilities for sewage sludge utilization and waste management		[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject		
	K7_W07		The student has in-depth, organized, and theoretically grounded knowledge regarding the sewage sludge treatemnt and waste management.		[SW3] Assessment of knowledge contained in written work and projects		
	[K7_K02] understands the need to formulate and communicate to the public information and opinions on the achievements in the environmental engineering and other aspects of the engineering activity in the sanitary sector; is aware of the importance and understands non-technical aspects and effects of engineering activities; strives to convey such information and opinions in a universally understandable manner, presenting various points of view		The student understands the need for formulating and communicating information and opinions to society regarding environmental engineering achievements, is aware of the importance, and understands the non-technical aspects and consequences of engineering activities. They make efforts to convey such information and opinions in a universally understandable manner, presenting various perspectives		[SK5] Assessment of ability to solve problems that arise in practice		

Subject contents	Course content – lecture The issue of sewage sludge and waste in Poland, legal issues related to the processing and management of sewage sludge and waste, and the fundamental processes utilized in sludge and waste biotechnology, primarily encompassing aerobic stabilization, anaerobic stabilization, and composting, as well as processes preparing sludge and waste for biotechnological procedures.		
	Course content – project Field trips to selected wastewater treatment plants. Practical application of the knowledge gained during lectures through the development of a concept for the management of sludge and/or waste.		
Prerequisites and co-requisites	Knowledge of wastewater treatment processes used in WWTPs as well as waste management.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Development of a concept for the management of sludge and/or waste.	50.0%	90.0%
	Attendance in classes and field trips.	80.0%	10.0%
Recommended reading	Basic literature	-	
	Supplementary literature	-	
	eResources addresses		
Example issues/ example questions/ tasks being completed	-		
Practical activities within the subject	Not applicable		

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