GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00071783		
Field of study	Environmental Engineering		
Date of commencement of studies	February 2025	Academic year of realisation of subject	2025/2026
Education level	second-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 Sanitary Engineering -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Karolina Matej-Łukowicz	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	30.0	0.0	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	0.0	0.0	30

Subject objectives

The aim of the course is to carry out a research project on wastewater treatment in biocharsand filters

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_U08] is able to assess risks in the implementation of engineering projects and implement appropriate safety rules	The student is able to identify and assess risks associated with conducting experimental research in wastewater treatment and apply appropriate safety principles when working with experimental setups and in the laboratory.	[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject
K7_W05	The student has knowledge of technologies and organization of works related to the implementation of wastewater treatment systems and understands their environmental impact, particularly in the context of using filtration materials and biochar–sand systems.	[SW3] Assessment of knowledge contained in written work and projects

Subject contents

Course content – laboratory

- Production and modification of biochars.
- Characterization of physicochemical properties of biochars.
- Preparation and operation of the experimental setup filtration columns.
- Conducting filtration experiments in biocharsand systems.
- Sampling and performing laboratory analyses of wastewater.
- Processing, analysis, and interpretation of research results.
- Safety principles in laboratory work and when operating experimental installations.

Prerequisites and co-requisites

<table>
<tr><td>Assessment methods and criteria</td><td colspan="2"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Performance of laboratory tasks</td><td>50.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>1. Lehmann J., Joseph S.: Biochar for Environmental Management, Science, Technology and Implementation, Routledge 2024
2. Gwenzi W.: Biochar for Environmental Remediation: Principles, Applications, and Prospects, Elsevier 2025
3. Kalka J., Cichy P.: Contemporary Environmental Protection and Energy Issues Biochar as a Product: Environmental Criteria for Potential Applications, Silesian University of Technology, 2023.</td></tr>
<tr><td>Supplementary literature</td><td>Scientific publications available in bibliographic databases, including Scopus and Springer.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2"></td></tr>
<tr><td>Practical activites within the subject</td><td colspan="2">Not applicable</td></tr>
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