University of Gdańsk

Subject card

Subject name and code	Unit processes in environmental engineering, PG_00103635		
Field of study	Environmental Protection		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2024/2025
Education level	postgraduate studies	Subject group	Obligatory subject group 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	academic	Assessment form	
Conducting unit	Pracownia Fotokatalizy -> Katedra Technologii Środowiska -> Faculty of Chemistry		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Emilia Gontarek-Castro	
	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

Additional information:
Laboratory classes

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	15.0	50

Subject objectives

familiarizing students with basic processes and unit operations used in environmental engineering

familiarizing students with basic processes used in environmental protection and devices corresponding to these processes

improving the skills of independent performance of parameter determinations necessary to determine the effectiveness of the process in accordance with the methodology given in the instructions

improving the skills of presenting results in written form and discussing the obtained results based on the acquired knowledge

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OŚMU2_U02] Uses advanced measurement and analytical techniques used in environmental protection.	Is able to propose and use appropriate analytical and measurement techniques to assess the quality of the natural environment.	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written [SU8] observation of student's independent or team work
[OŚMU2_K02] Recognises threats, creates safe work conditions and is responsible for the safety of own and other people's work.	Based on the occupational health and safety regulations learned during his/her studies, he/she controls their compliance at the workplace.	[SK6] demonstration of practical skills [SK8] observation of student's independent or team work
[OŚMU2_K04] Leads the group and bears responsibility for it.	Knows the principles of safe work in the laboratory and is able to manage laboratory work carried out by a group of students.	[SK6] demonstration of practical skills [SK8] observation of student's independent or team work
[OŚMU2_W01] Describes complex phenomena and processes occurring in nature, including those related to the spread of anthropogenic pollution.	Explains the processes that occur in various environmental components when pollutants are introduced into them.	[SW4] test/exam - oral or written [SW2] presentation/project/paper/ report
[OŚMU2_U01] On the basis of the acquired knowledge, proposes to solve environmental problems.	Knows environmental protection problems and applies learned individual actions to counteract these problems	[SU4] test/exam - oral or written [SU8] observation of student's independent or team work
[OŚMU2_W09] Applies safety and hygiene principles when working independently on a test or measurement stand in a laboratory or in the field.	Independently plans and coordinates experimental work.	[SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
[OŚMU2_W08] Explains the mechanisms of unit processes used in environmental protection and waste management methods.	Characterizes methods and explains the operation of devices used in environmental engineering.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report

Subject contents

Examples of technological processes used in environmental engineering. Carrying out exercises simulating the course of selected unit processes used for wastewater treatment (biological-chemical methods) and water treatment. Learning the mechanism of the unit process being tested. Studying the impact of raw material quality and selected operating parameters on its efficiency. Optimizing the efficiency of the process based on the obtained results. Discussion and discussion of the results based on an independent literature review. Trip to a selected industrial plant.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Activity during classes	0.0%	10.0%
Reports	51.0%	20.0%
Tests	51.0%	70.0%

Recommended reading

Basic literature	Janosz-Rajczyk M., Wybrane procesy jednostkowe w inżynierii środowiska, Wyd. Pol. Częstochowskiej, Częstochowa 2004
Supplementary literature	1. Anielak A. M., Wysokoefektywne metody oczyszczania. PWN Warszawa 2015.2. Bodzek M., Bohdziewicz J., Membrany w biotechnologii, Politechnika Śląska, 1993.
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed

Describe the experiment protocol.

Work placement

Not applicable

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