GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00059125						
Field of study	Projektowanie oczyszczalni ścieków						
Date of commencement of studies	October 2022		Academic year of realisation of subject	2025/2026			
Education level	first-cycle studies		Subject group	Optional subject group Subject group related to scientific research in the field of study			
Mode of study	Part-time studies		Mode of delivery	at the university			
Year of study	4		Language of instruction	Polish			
Semester of study	7		ECTS credits	4.0			
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	15.0	5.0	0.0	10.0	0.0	30
	E-learning hours included: 0.0						
	eNauczanie source addresses: Moodle ID: 46840 Projektowanie Oczyszczalni Ścieków VII sem, IŚ [zaocz.] -2025/26 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=46840						
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	3.0	68.0	101		
Subject objectives	The aim of the course is to learn the principles of designing wastewater treatment plants						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U03] can prepare documentation regarding the implementation of an engineering task/project and prepare a text or presentation including a discussion of the results of the implementation	The student is able to prepare a project of a municipal wastewater treatment plant	[SU1] Ocena realizacji zadania [SU3] Ocena umiejętności wykorzystania wiedzy uzyskanej w ramach przedmiotu [SU4] Ocena umiejętności korzystania z metod i narzędzi
[K6_U16] can, when formulating and solving engineering tasks in environmental engineering, evaluate, select and apply appropriate methods and tools, recognize their non-technical aspects, including environmental, economic and legal aspects	The student is able to use legal regulations to design wastewater treatment plants.	[SU5] Ocena umiejętności zaprezentowania wyników realizacji zadania [SU2] Ocena umiejętności analizy informacji
[K6_U13] knows the rules of application and can choose the materials of the sanitary industry	The student knows the principles of application and is able to select sanitary materials in a wastewater treatment plant.	[SU5] Ocena umiejętności zaprezentowania wyników realizacji zadania [SU3] Ocena umiejętności wykorzystania wiedzy uzyskanej w ramach przedmiotu [SU2] Ocena umiejętności analizy informacji
[K6_W07] has a structured and theoretically founded knowledge in the field of materials used in the sanitary industry, their physico-chemical properties; knows and understands the basic processes of their production	The student is able to select sanitary materials in a wastewater treatment plant.	[SW3] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym [SW2] Ocena wiedzy zawartej w prezentacji
[K6_W11] has elementary knowledge of electrical devices and installations as well as basics of control and automation	The student is able to describe the wastewater treatment control system.	[SW3] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym [SW2] Ocena wiedzy zawartej w prezentacji [SW1] Ocena wiedzy faktograficznej

Subject contents

Course content – lecture
Basic concepts, definitions, terminology. Legal requirements for wastewater treatment. The scope of the design of the wastewater treatment plant and its basic components. Raw wastewater balance. Flow resistance as the basis for the construction of the height scheme. Equipment for mechanical wastewater treatment - general characteristics of grates, sand traps and settling tanks. Facilities for biological wastewater treatment.

Course content – exercises
Calculations of equipment and facilities of a municipal wastewater treatment plant

Course content – project
Design of a municipal wastewater treatment plant for the technological sector

Prerequisites and co-requisites

Knowledge of the processes used in water and wastewater technology

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
project execution	60.0%	40.0%
final exam	60.0%	60.0%

Recommended reading

Basic literature	1. Henze M., Harremoës P., Jes la Cour J., Arvin E. Oczyszczanie ścieków, procesy biologiczne i chemiczne Wydawnictwo Politechniki Świętokrzyskiej w Kielcach, 2002 2. Anielak A. Chemiczne i fizykochemiczne oczyszczanie ścieków PWN Warszawa 2000 3. Kowal A., Świderska-Bróż M.: Oczyszczanie wody. Wyd. Nauk. PWN, Warszawa-Wrocław, 1996.
Supplementary literature	1. Heidrich Z.: Urządzenia do uzdatniania wody. Zasady projektowania i przykłady obliczeń. Arkady, W-wa, 1980. 2. Heidrich Z., Witkowski A. Urządzenia do oczyszczania ścieków. Projektowanie. Przykłady obliczeń Wydawnictwo Seidel-Przywecki Warszawa 2005
eResources addresses	

Example issues/ example questions/ tasks being completed	
Practical activites within the subject	Not applicable

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