University of Gdańsk

Subject card

Subject name and code	Water and Wastewater Management in Companies, PG_00199722		
Field of study	Business and Environmental Technology		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	Master's 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	1	ECTS credits	4.0
Learning profile	academic	Assessment form	exam
Conducting unit	Laboratory of Photocatalysis -> Department of Environmental Technology -> Faculty of Chemistry -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Ewelina Grabowska-Musiał	
	Teachers	dr hab. inż. Ewelina Grabowska-Musiał	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	15.0	30.0	0.0	60

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	60	0.0	40.0	100

Subject objectives

The aim of the course is to familiarize students with the issues of water and sewage management, with particular emphasis on industrial water and sewage. Defining water and sewage management and its importance for the environment and industry.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BiTEMU2_K03] understands the need to properly set priorities, plan and organize tasks related to their implementation, as well as monitor and evaluate progress	plans and coordinates independently experimental work carried out	[SK8] observation of student's independent or team work
[BiTEMU2_W01] provides an in-depth analysis of the relationship between economics and environmental technology, and their place within the social and natural sciences.	can describe independently existing problems regarding impact of environmental degradation on economic aspects	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW5] implementation of a problem task
[BiTEMU2_W09] predicts the effects of human interference in the natural environment and analyzes the impact of human activity on the quality of the environment on a local, regional and global scale	based on the latest literature and topics of classes independently discusses issues regarding environmental degradation	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
[BiTEMU2_U07] proposes processes and methods of water treatment, sewage and waste gas treatment, environmental remediation, and waste management used in environmental protection	depending on your needs and problems I propose appropriate processes used in environmental remediation	[SU1] oral statement/conversation/ discussion [SU6] demonstration of practical skills [SU8] observation of student's independent or team work
[BiTEMU2_K02] understands the need to cooperate and work in a group, assuming responsible roles within it	can do it alone and together with solve given problems in a group	[SK6] demonstration of practical skills [SK8] observation of student's independent or team work
[BiTEMU2_U05] is able to give a presentation and independently prepare various specialized written works appropriate for the field studied or in the area on the border of various scientific disciplines, using theoretical approaches, collecting various sources of data, their description and interpretation, and drawing conclusions based on scientific literature and the results of own research work	based on acquired knowledge and program management multimedia prepares and gives an oral presentation	[SU2] presentation/project/paper/ report
[BiTEMU2_U09] plans and performs research tasks in the field or laboratory and interprets research results on environmental protection issues	plans independently research experiments i prepares the interpretation of the results	[SU1] oral statement/conversation/ discussion [SU5] implementation of a problem task [SU6] demonstration of practical skills [SU8] observation of student's independent or team work
[BiTEMU2_U08] searches, selects and analyzes the literature on environmental sciences, including scientific journals and databases, reading and understanding scientific texts in the native language and English	can independently search and interpret literature from the best scientific databases on world	[SU2] presentation/project/paper/ report [SU8] observation of student's independent or team work
[BiTEMU2_K07] demonstrates responsibility for the safety of one's own work and that of others, taking into account the risks resulting from the research techniques used, and creates conditions for safe work in the laboratory or in the field	based on regulations occupational safety learned controls them during their studies compliance on site work	[SK8] observation of student's independent or team work
[BiTEMU2_U06] uses advanced methods, techniques, and tools to assess the quality of the environment and the effectiveness of the technological processes used	can choose the appropriate ones methods of checking effectiveness processes used water, soil or. purification air	[SU1] oral statement/conversation/ discussion [SU8] observation of student's independent or team work
[BiTEMU2_W11] has an in-depth understanding of and applies safety and hygiene rules when working independently at a research or measurement station in the laboratory or in the field at an advanced level	applies safety rules in the workplace	[SW1] oral statement/ conversation/discussion [SW5] implementation of a problem task

	Course outcome	Subject outcome	Method of verification
	[BiTEMU2_W02] distinguishes legal and administrative mechanisms and procedures in environmental protection and interprets it in depth manner	knows the legal basis for the issues discussed	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
	[BiTEMU2_W10] explains in detail the mechanisms of unit processes used in remediation and environmental protection as well as waste management methods	distinguishes and discusses the basic ones processes used in engineering environment	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion

Subject contents

A. Topics of the lecture Definitions and basic concepts in the field of water and sewage management - Principles of water management. -Absorption of surface and underground water for industrial purposes. - Water protection against pollution. -Introducing industrial sewage and rainwater into water, land or external sewage facilities. -Requirements for the introduction of sewage and rainwater into water, land or sewage facilities. -Contracts for water supply and sewage collection by water and sewage companies. Legal requirements. -Water and sewage management at the design and implementation stage of the investment. - Reports on the impact of investments on the environment in terms of water and sewage management. - Water permits for water abstraction and sewage disposal.

B. Laboratory issues Examples of technological processes used in environmental engineering. Performing exercises simulating the course of selected processes used for wastewater treatment.

Prerequisites and co-requisites

No requirements

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
exam	51.0%	60.0%
oral presentation	51.0%	40.0%

Recommended reading

Basic literature	Grabowska-Musiał Ewelina., unpublished materials Kowal A. L., Świderska-Bróż M., Oczyszczanie wody, Wydawnictwo Naukowe PWN, Warszawa 2007 Bortkiewicz B., Oczyszczanie ścieków przemysłowych. PWN, Warszawa 2002 Hermanowicz W. i inni, Fizyczno-chemiczne badanie wody i ścieków, Wydawnictwo ARKADY, Warszawa 1999 Dymaczewski Z, Oleszkiewicz J.A., Sozański M.M., Poradnik eksploatatora oczyszczalni ścieków, PZIiTS, Poznań 1997 Kowal A., Technologia wody, Arkady, Warszawa 1995
Supplementary literature	brak
eResources addresses	

Example issues/ example questions/ tasks being completed

Work placement

Not applicable

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