



Subject card

Subject name and code	, PG_00059971						
Field of study	Environmental Engineering						
Date of commencement of studies	February 2024		Academic year of realisation of subject		2024/2025		
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						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Aneta Łuczkiwicz				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	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		5.0		19.0	54
Subject objectives	The aim of the subject is to analyze legal standards, monitoring and analysis of environmental pollution related to energy sector. Determining the impact of pollution on the occurrence of specific diseases. Possibility of reducing emissions in the context of improving environmental quality and ensuring indoor comfort.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K7_W03	The student has in-depth, structured and theoretically based knowledge related to measurement, management and environmental monitoring			[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		
	K7_W05	The student has knowledge of the impact of construction investments on the environment			[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation		
	[K7_U08] is able to assess risks in the implementation of engineering projects and implement appropriate safety rules	The student is able to assess threats when implementing engineering projects and implement appropriate mitigation strategy and safety rules.			[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject		
K7_U07	The student is able to plan and conduct field and laboratory research leading to the assessment of the effectiveness of the solutions used in environmental engineering			[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools			

Subject contents	<p>Lectures</p> <p>Trends in emissions of industrial pollutants related to energy sector. Legal acts referring to monitoring indoor and out-door environmental quality in energy systems. Division of sources depending on the pollutants emission and spread. Characterization of pollutants and their persistence in the environment. Costs of industrial air pollution - the impact of pollution on the occurrence of specific diseases. Ways to mitigate and eliminate pollutants emissions. Reducing industrial pollution - assessment, legislation and implementation. Public accountability - access to industrial emissions data</p> <p>Laboratories: Quality of water used in energy systems. Analysis of hygienic and sanitary conditions and the possibility of spreading microbiological factors in areas occupied by people. Methods for maintaining ventilation and air conditioning installations. Methods confirming the cleanliness of the installation</p>											
Prerequisites and co-requisites	Basis of environmental microbiology and chemistry as well as of environmental engineering											
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="456 546 794 577">Subject passing criteria</th> <th data-bbox="794 546 1142 577">Passing threshold</th> <th data-bbox="1142 546 1479 577">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 577 794 609">Lecture - test</td> <td data-bbox="794 577 1142 609">60.0%</td> <td data-bbox="1142 577 1479 609">60.0%</td> </tr> <tr> <td data-bbox="456 609 794 651">laboratories - presentation</td> <td data-bbox="794 609 1142 651">40.0%</td> <td data-bbox="1142 609 1479 651">40.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Lecture - test	60.0%	60.0%	laboratories - presentation	40.0%	40.0%
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laboratories - presentation	40.0%	40.0%										
Recommended reading	Basic literature	Wykonawczy Program Państwowego Monitoringu Środowiska										
		Informacje dotyczące systemu monitoringu jakości powietrza w Polsce										
	Supplementary literature	-										
	eResources addresses	Adresy na platformie eNauczanie:										
Example issues/ example questions/ tasks being completed	-											
Work placement	Not applicable											