



## Subject card

Subject name and code	The impact of the energy facilities on the environment, PG_00064771						
Field of study	Power Engineering						
Date of commencement of studies	February 2025		Academic year of realisation of subject		2025/2026		
Education level	second-cycle studies		Subject group		Specialty subject group 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		3.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Zakład Maszyn Przepływowych -> Institute of Energy -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Wojciech Włodarski				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	15.0	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		8.0		37.0	75
Subject objectives	The aim of the course is to broaden knowledge of the environmental impact of selected types of technical facilities.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_U02] formulates and tests hypotheses concerning problems related to energy conversion processes, their efficiency, control, safety and impact on the environment, as well as simple research problems		is able to combine the description and evaluation of system and non-technical aspects when solving engineering tasks in the field of design, technology and operation of machines		[SU3] Assessment of ability to use knowledge gained from the subject		
	[K7_W01] explains and describes, based on general knowledge in the field of scientific disciplines forming the theoretical foundations of Power Engineering, the structure, principles of operation and environmental impact of energy systems, machines and devices, transmission grids and internal installations		assesses the suitability and correctly selects the methods and tools best suited to solve engineering tasks typical for the specialisation being pursued		[SW1] Assessment of factual knowledge		
Subject contents	Characteristics of environmental pollution. Impact of selected types of technical facilities on the environment. Calculation of pollutant emissions from fuel combustion. Modelling of atmospheric dispersion. Noise generated by wind turbines. Assessment of the effects of the release of harmful substances into rivers, lakes and coastal waters. Determination of radiation doses received from the consumption of food products contaminated with radioactive substances.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
			51.0%		100.0%		

Recommended reading	Basic literature	<p>A. Ziębik, M. Szega, W. Stanek "Systemy energetyczne a środowisko" Wydawnictwo Politechniki Śląskiej 2015</p> <p>K. Maczek "Wybrane zagadnienia ochrony powietrza w inżynierii cieplnej" Kraków 1998</p> <p>W. Lewandowski, R. Aranowski "Technologie ochrony środowiska w przemyśle i energetyce" PWN 2016</p> <p>E. Klimiuk, M. Pawłowska, T. Pokój "Biopaliwa. Technologie dla zrównoważonego rozwoju" PWN 2012</p> <p>M. Szubel, W. Goryl "Drewno w energetyce" Poznań 2017</p>
	Supplementary literature	<p>A. Ziębik, M. Szega, W. Stanek "Systemy energetyczne a środowisko" Wydawnictwo Politechniki Śląskiej 2015</p> <p>K. Maczek "Wybrane zagadnienia ochrony powietrza w inżynierii cieplnej" Kraków 1998</p> <p>W. Lewandowski, R. Aranowski "Technologie ochrony środowiska w przemyśle i energetyce" PWN 2016</p> <p>E. Klimiuk, M. Pawłowska, T. Pokój "Biopaliwa. Technologie dla zrównoważonego rozwoju" PWN 2012</p> <p>M. Szubel, W. Goryl "Drewno w energetyce" Poznań 2017</p>
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	the impact of wind energy systems on the environment	
Work placement	Not applicable	

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