



## Subject card

Subject name and code	The impact of the energy facilities on the environment, PG_00057268						
Field of study	Power Engineering, Power Engineering, Power Engineering						
Date of commencement of studies	February 2022		Academic year of realisation of subject		2022/2023		
Education level	second-cycle studies		Subject group		Optional 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	Institute of Energy -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Wojciech Włodarski				
	Teachers		dr inż. Wojciech Włodarski				
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 the knowledge of the construction, operation and environmental impact of selected types of energy facilities.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_K04] is able to react in emergency situations, health and life threatening when using power equipment		The student has in-depth knowledge of the operation of complex mechanical systems and devices, including process apparatus.		[SK2] Assessment of progress of work		
	[K7_K05] is aware of the impact of engineering activities on the environment		The student is able to describe and evaluate system and non-technical aspects when solving engineering tasks in the field of design, technology and operation of machines.		[SK5] Assessment of ability to solve problems that arise in practice		
	[K7_W10] knows the basic installations of advanced energy systems, transmission networks and internal installations and their impact on the environment		The student assesses the usefulness and correctly selects the methods and tools best suited to solving engineering tasks typical for the specialization.		[SW1] Assessment of factual knowledge		
Subject contents	Classification of energy objects. Characteristics of environmental pollution. The impact of obtaining fuels and energy on the natural environment. Systems for the control and operation of energy facilities, taking into account the impact on the environment. Air protection. Methods of exhaust gas treatment.						
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	
Example issues/ example questions/ tasks being completed	the impact of wind energy systems on the environment	
Work placement	Not applicable	