GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Environment Protection in Power Engineering, PG_00041984		
Field of study	Power Engineering, Power Engineering, Power Engineering, Power Engineering, Power Engineering		
Date of commencement of studies	October 2020	Academic year of realisation of subject	2020/2021
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study
Mode of study	Full-time studies	Mode of delivery	blended-learning
Year of study	1	Language of instruction	Polish
Semester of study	1	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Ship and Land Based Power Plants -> Faculty of Ocean Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	mgr inż. Irena Dziwisz-Olszak	
	Teachers	dr inż. Blanka Jakubowska Maciej Fabrykiewicz mgr inż. Roksana Michałka mgr inż. Aleksandra Gołąbek dr inż. Bartosz Dawidowicz mgr inż. Mariusz Furmanek dr inż. Denys Stepanenko mgr inż. Irena Dziwisz-Olszak	

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: 13.0						
	Adresy na platformie eNauczanie:						

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	67.0	100

Subject objectives	To acquaint students with the environmental aspects of energy production and processing.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_K03	Student explains what is the principle of sustainable development. Student lists non-renewable and renewable energy sources. Student explains the environmental aspects of the use of different energy sources. Student exchanges pollutants emitted into the atmosphere. Student describes methods for reducing the emission of pollutants into the atmosphere. Student defines and distinguishes between waste and hazardous waste. Student describes the water and wastewater circulation in a power station. Student lists basic legislation on environmental protection.	[SK1] Assessment of group work skills [SK5] Assessment of ability to solve problems that arise in practice
K6_W06	Student explains what is the principle of sustainable development. Student lists non-renewable and renewable energy sources. Student explains the environmental aspects of the use of different energy sources. Student exchanges pollutants emitted into the atmosphere. Student describes methods for reducing the emission of pollutants into the atmosphere. Student defines and distinguishes between waste and hazardous waste. Student describes the water and wastewater circulation in a power station. Student lists basic legislation on environmental protection.	[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge

Subject contents

The principle of sustainable development. Non-renewable and renewable energy sources. Environmental aspects of the use of different energy sources. Atmospheric pollution. Methods of reducing the emission of pollutants into the atmosphere. Waste and hazardous waste. Water and Wastewater. Legal aspects of environmental protection.

Prerequisites and co-requisites

No requirements.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Written midterm colloquium	50.0%	50.0%
Reports from the laboratory exercises	100.0%	50.0%

Recommended reading

Basic literature	1.Kucowski Jerzy, Laudyn Damazy, Przekwas Mieczysław: Energetyka a ochrona środowiska. WNT. Warszawa, 1997. 2.Jarosiński Józef: Techniki czystego spalania. WNT, Warszawa, 1996. 3.Praca zbiorowa pod red. Krystyny Mędrzyckiej: Gospodarka odpadami niebezpiecznymi. Wydz. Chem. PG. Gdańsk, 1996. 4.Praca zbiorowa pod red. Jacka Namieśnika i Jerzego Jaśkowskiego: Zarys ekotoksykologii. EKO Pharma. Gdańsk, 1995. 5.Gronowicz Jan.: Niekonwencjonalne źródła energii. ITE. Radom – Poznań, 2008. Web sites: www.mos.gov.pl, www.ure.gov.pl, www.cire.pl, www.eea.europa.eu, www.iea.org,
Supplementary literature	None.

	eResources addresses	
Example issues/ example questions/ tasks being completed	1. What is the principle of sustainable development? 2. List the most important pollutants emitted into the atmosphere by burning fossil fuels. 3. Give some examples of techniques used in the clean-burning boilers. 4. What is a trading system for CO_2 emissions?	
Work placement	Not applicable	