GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Environmental management and ecology, PG_00040195		
Field of study	Mechanical Engineering, Mechanical Engineering		
Date of commencement of studies	October 2020	Academic year of realisation of subject	2022/2023
Education level	first-cycle studies	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	3	Language of instruction	English
Semester of study	6	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Zakład Systemów i Urządzeń Energetyki Cieplnej -> Institute of Energy -> Faculty of Mechanical Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Paweł Szymański	
	Teachers	dr inż. Paweł Szymański	

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	6.0	14.0	50

Subject objectives

To acquaint students with multiple the environmental aspects of industrial processes and green technologies.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_K02] understands ex-technical aspects of the activities included in the profession of a mechanical engineer, among others its social impact and influence on the condition of an environment; is aware of the responsibility connected with the decisions made in connection with engineering activity	Student lists pollutants emitted into the atmosphere. Student defines and distinguishes between waste and hazardous waste. Student lists basic legislation on environmental protection.	[SK5] Assessment of ability to solve problems that arise in practice
K6_W12	The student has the basic knowledge necessary to understand the non-technical conditions of engineering activities, in particular environmental protection activities.	[SW3] Assessment of knowledge contained in written work and projects
K6_U11	The student is able to perform basic analyses related to the estimation of environmental hazards and pollutions.	[SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task [SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment

Subject contents

- Principles of Sustainable Development
- Principles of Ecology
- Principles of Environmental Protection
- Effect of Global Warming on Climate Change
- Pollution and Causes of Climate Change
- Renewable Energy Resources
- Effect Of Using Fossil Fuels On Climate Change
- Hydropower, Wind power, Geothermal Energy, Solar Power, Biomass, Nuclear energy
- International Environmental Agreements/Convection

Prerequisites and co-requisites	General and basic technical knowledge

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
oral exam	56.0%	80.0%
lab report	56.0%	20.0%

Recommended reading

Basic literature

1. 1. A. Farmer. Handbook of Environmental Protection and Enforcement. Principles and Practice. Earthscan. London. 2007
2. D.H.F. Liu, B.G. Liptak, P.A. Bouis. Environmental Engineers Handbook. Lewis Publishers. 1997.
3. F.R. Spellman. Handbook of Environmental Engineering. CRC Press. 2015.

Supplementary literature

- www.mos.gov.pl
- www.ure.gov.pl
- www.cire.pl
- www.eea.europa.eu
- www.iea.org

eResources addresses

Adresy na platformie eNauczanie:

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 CO2 emissions

Work placement	Not applicable