GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Environmental management and ecology, PG_00039893		
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	Obligatory subject group in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	Polish
Semester of study	6	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Zakład Ekoinżynierii i Silników Spalinowych -> Institute of Energy -> Faculty of Mechanical Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Blanka Jakubowska	
	Teachers	dr inż. Blanka Jakubowska dr inż. Bartosz Dawidowicz	

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	15.0	50

Subject objectives	The aim of this course is to make students familiarize with the notions: causes and effects of environmental degradation, processes of purification and restoration of environmental resources, and familiarization with the current legal status, models and concepts of environmental management and the structure of environmental management in Poland.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U11] is able to analyse the operation of devices and compare the construction solutions applying usage, safety, environmental, economic and legal criteria	The student is able to analyze the operation of devices used in the processes of purification and restoration of environmental resources. The student knows the basic principles of environmental impact assessment and the elements of safety and industrial risk management.	[SU1] Assessment of task fulfilment [SU5] Assessment of ability to present the results of task
[K6_W12] possesses basic knowledge necessary to understand the ex-technical conditions of engineering activity, possesses basic knowledge on management, including quality management and running commercial enterprise, within the range of protection of intellectual property and patent law; knows general principles of creating and developing forms of individual entrepreneurship and basic HSE rules applicable to machine industry	The student adheres to the principles of occupational health and safety during laboratory classes. On specific examples, the student confirms the knowledge acquired in the previously studied subjects.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects
[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	The student combines social, economic and ecological issues with the issues of environmental protection.	[SK5] Assessment of ability to solve problems that arise in practice

Subject contents

Lecture: Causes and effects of environmental degradation.Methods of purification and restoring environmental resources.The concept of sustainable development.Activities in the field of environmental protection.Industrial ecology.Models and definitions of environmental management and environmental management.Environmental management systems.Ecological and legal aspects of management systems.Best practices in technique and technologies.Primary and secondary methods for the elimination or reduction of emissions harmful to the environment.Laboratory: Various techniques of environmental engineering - sorting materials, mixing, separating pollutants. Economic issues related to the valuation of the use of the environment.

Prerequisites and co-requisites

Fundamentals of physics, chemistry and fluid mechanics

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
laboratory	56.0%	50.0%
lecture	56.0%	50.0%

Recommended reading

Basic literature

R. Zarzycki, M. Imbierowicz, M. Stelmachowski, "Wprowadzenie do inżynierii i ochrony środowiska. Ochrona środowiska naturalnego", Wydawnictwa Naukowo-Techniczne, Warszawa, 2007

B. Poskrobko, "Zarządzanie Środowiskiem", Polskie Wydawnictwo Ekonomiczne, Warszawa, 1998

"Ekonomia i Środowisko", Czasopismo Europejskiego Stowarzyszenia Ekonomistów Środowiska i Zasobów Naturalnych, 4 (47), 2013

G. Dobrzański, B. M. Dobrzańska, D. Kiełczewski, " Ochrona środowiska przyrodniczego", Wydawnictwo Ekonomia i Środowisko, Białystok, 1997

J. Kuckowski, D. Laudyn, M. Przekwas, " Energetyka a ochrona środowiska", Wydawnictwa Naukowo-Techniczne, Warszawa, 1993

	Supplementary literature	-
	eResources addresses	Adresy na platformie eNauczanie: Zarządzanie Środowiskiem i Ekologia, W, MiBM, sem.06, letni 22/23 - Moodle ID: 28704 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=28704 Zarządzanie Środowiskiem i Ekologia, W, MiBM, sem.06, letni 22/23 - Moodle ID: 28704 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=28704
Example issues/ example questions/ tasks being completed	Explain what a product life cycle analysis is all about, which is used as an indicator in the ISO 14000 series standard List the motives and briefly describe the concepts of environmental protection	
Work placement	Not applicable	