GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Management and Environmental Protection, PG_00055477						
Field of study	Mechatronics						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2029/2030		
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	4		Language of instruction		Polish		
Semester of study	7		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Institute of Energy -> Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Blanka Jakubowska				
	Teachers						

Lesson types

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	1.0	19.0	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_U10] is able - while formulating and solving mechatronic engineering tasks - to notice their systemwide and non-technical aspects	The student is able to analyze the operation of devices used in the processes of cleaning and restoration of environmental resources. The student connects economic, social and ecological issues with the issues of environmental protection.	[SU1] Assessment of task fulfilment
[K6_W12] has knowledge on management and knowledge essential for understanding non-technical conditions of engineering activities; knows basic rules of industrial safety and intellectual property rights; is able to make use of patent databases	The student knows the concept of the environmental management system model and the types of environmental protection processes. The student knows the basic principles of environmental impact assessment and the elements of safety and industrial risk management. The student knows and follows the principles of occupational health and safety.	[SW3] Assessment of knowledge contained in written work and projects

Subject contents	Course content – lecture 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	

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
Practical activites within the subject	Not applicable

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