



## Subject card

Subject name and code	Environment management and ecology, PG_00055069						
Field of study	Management and Production Engineering						
Date of commencement of studies	October 2023		Academic year of realisation of subject		2026/2027		
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		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. Blanka Jakubowska				
	Teachers						
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		8.0		37.0	75
Subject objectives	<p>The aim of this course is to make students familiarize with the notions: causes and effects of environmental degradation,</p> <p>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.</p>						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_U11] is able to identify and formulate simple engineering tasks related to the diagnostics of the technical condition of machines and devices using appropriate methods, techniques and tools	The student is able to combine social, economic and ecological issues with the issues of environmental protection.	[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information
	[K6_W08] has basic management knowledge, including process and product quality management, and detailed knowledge of integrated and standardized quality, environmental, health and safety management systems	The student knows the concept of the environmental management system model and the types of environmental protection processes. The student is able to make the characteristics of the management object and indicate the inter-system relations. The student knows and follows the principles of occupational health and safety.	[SW3] Assessment of knowledge contained in written work and projects
	[K6_K02] is able to interact and work in a group, assuming different roles, can inspire and organize the learning process of others, properly identifies priorities for realization of a task specified by themselves or others	The student is aware of the importance of pro-environmental activities. The student is able to make environmentally friendly decisions, cooperate in a team, presents arguments taking into account a different point of view. The student understands the need for ecological education of the society in terms of the impact of economic decisions on the environment. The student is able to assess the skills and use them in teamwork.	[SK5] Assessment of ability to solve problems that arise in practice [SK2] Assessment of progress of work
Subject contents	<p>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 systems. 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.</p>		
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	<p>R. Zarzycki, M. Imbierowicz, M. Stelmachowski, "Wprowadzenie do inżynierii i ochrony środowiska. Ochrona środowiska naturalnego", Wydawnictwa Naukowo-Techniczne, Warszawa, 2007</p> <p>B. Poskrobko, "Zarządzanie Środowiskiem", Polskie Wydawnictwo Ekonomiczne, Warszawa, 1998</p> <p>"Ekonomia i Środowisko", Czasopismo Europejskiego Stowarzyszenia Ekonomistów Środowiska i Zasobów Naturalnych, 4 (47), 2013</p> <p>G. Dobrzański, B. M. Dobrzańska, D. Kielczewski, "Ochrona środowiska przyrodniczego", Wydawnictwo Ekonomia i Środowisko, Białystok, 1997</p> <p>J. Kuckowski, D. Laudyn, M. Przekwas, "Energetyka a ochrona środowiska", Wydawnictwa Naukowo-Techniczne, Warszawa, 1993</p>	
	Supplementary literature	-	

	eResources addresses	Adresy na platformie eNauczenie:
Example issues/ example questions/ tasks being completed	<p>Explain what a product life cycle analysis is all about, which is used as an indicator in the ISO 14000 series standard</p> <p>List the motives and briefly describe the concepts of environmental protection</p>	
Work placement	Not applicable	