



## Subject card

Subject name and code	Environmental management and ecology, PG_00039957						
Field of study	Management and Production Engineering, Management and Production Engineering						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2021/2022		
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	2	Language of instruction			Polish		
Semester of study	4	ECTS credits			2.0		
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	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	0.0	0.0	15.0	30
	E-learning hours included: 0.0						
	Adresy na platformie eNauczanie: Ekologia i zarządzanie środowiskiem, W, ZiP, sem.06, letni 21/22 (M:31821W0) - Moodle ID: 22682 <a href="https://enauzanie.pg.edu.pl/moodle/course/view.php?id=22682">https://enauzanie.pg.edu.pl/moodle/course/view.php?id=22682</a> Ekologia i zarządzanie środowiskiem, W, ZiP, sem.06, letni 21/22 (M:31821W0) - Moodle ID: 22682 <a href="https://enauzanie.pg.edu.pl/moodle/course/view.php?id=22682">https://enauzanie.pg.edu.pl/moodle/course/view.php?id=22682</a>						
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	17.0	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_K03	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		
	K6_W08	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 health and safety at work.			[SW3] Assessment of knowledge contained in written work and projects [SW2] Assessment of knowledge contained in presentation		
	K6_U06	The student knows the basic principles of environmental impact assessment and the elements of safety and industrial risk management.			[SU5] Assessment of ability to present the results of task [SU1] Assessment of task fulfilment		

Subject contents	Lecture: Causes and effects of environmental degradation. Methods of cleaning and restoring environmental resources. The concept of sustainable development. Principles and standards for environmental management. Technologies enabling the implementation of the strategy of sustainable development and clean manufacturing. Economic issues related to the valuation of the use of the environment. Best Available Technique (BAT). Integrated permits. Sources of industrial hazards. Activities in the field of environmental protection. Models and definitions of environmental management and environmental management systems. Seminar: Threats and the state of the environment, concepts of environmental protection, nature conservation movement, characteristics of factors causing depletion and degradation of natural lands, causes of the ecological crisis, basics of environmental management science, pro-ecological management systems in enterprises.		
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
	lecture	56.0%	50.0%
	seminary	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. Kietczewski, "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	<p>Ekologia i zarządzanie środowiskiem, W, ZiP, sem.06, letni 21/22 (M: 31821W0) - Moodle ID: 22682  <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=22682">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=22682</a></p> <p>Ekologia i zarządzanie środowiskiem, W, ZiP, sem.06, letni 21/22 (M: 31821W0) - Moodle ID: 22682  <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=22682">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=22682</a></p>	
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		