



## Subject card

Subject name and code	Environmental Protection, PG_00042797						
Field of study	Environmental Engineering						
Date of commencement of studies	October 2020		Academic year of realisation of subject		2020/2021		
Education level	first-cycle studies		Subject group		Obligatory subject group in the field of study 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	1		Language of instruction		Polish		
Semester of study	1		ECTS credits		3.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Environmental Engineering Technology -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Eliza Kulbat				
	Teachers		dr hab. inż. Eliza Kulbat  dr inż. Aleksandra Sokołowska				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	15.0	0.0	0.0	0.0	45
	E-learning hours included: 0.0						
	Address on the e-learning platform: <a href="https://enauczanie.pg.edu.pl/moodle/index.php?id=7870">https://enauczanie.pg.edu.pl/moodle/index.php?id=7870</a> Adresy na platformie eNauczanie:						
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	45		5.0		35.0	85
Subject objectives	Learning the basic issues of environmental protection in Poland and the world and the role of environmental engineering in shaping and protecting the environment.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U01] has the ability to self-education, can obtain information from literature, databases and other sources, uses information technology, Internet resources; can integrate the obtained information, make their interpretation, as well as draw conclusions and formulate and justify opinions		The student is able to obtain information from literature, databases and other sources, uses information technologies, Internet resources; can integrate the obtained information, make their interpretation, as well as draw conclusions and formulate and justify opinions.		[SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment		
	[K6_W04] possesses elementary knowledge in the field of land mechanics, ground science, land reclamation and geotechnics; has basic knowledge about the composition of air, water and soil, environmental pollution and processes responsible for their formation and ways to reduce them, knows the principles and organization of sustainable water management		the basic knowledge of the composition of air, water and soil, and pollution environment and processes responsible for their formation and ways to reduce them, knows the principles and organization of sustainable water management		[SK1] Assessment of group work skills [SK5] Assessment of ability to solve problems that arise in practice		

Subject contents	Definitions of basic concepts. Environmental protection against the backdrop of ecological sciences. Historical view of undertaken activities. International aspects of nature conservation: U-Thant report, Rio de Janeiro Earth Summit, international conventions and agreements. Forms of nature protection in Poland. Protected areas. Global and European networks of protected areas. Water protection and pollution. Basic concepts, sources and types of pollution. Protection zones of water intakes. Surface and groundwater monitoring systems. Legal bases for water protection. European Water Protection Charter. The Water Framework Directive. Legal acts in force in Poland. Protection and air pollution. Basic problems, sources and types of pollution. International legal regulations. Legal acts regulating air protection in the EU and in Poland. Air quality monitoring in Poland. Protection and contamination of soils. Basic concepts, sources and types of pollution. Land degradation and reclamation. Legal bases of soil protection in Poland. The impact of transport on the environment - comparison of the impact of various means of transport, assessment of the transport structure in Poland and the EU, assessment of threats to individual elements of the environment. The impact of energy on the environment, the structure of energy sources in Poland. Renewable energy. Noise and vibrations as environmental pollution. Light pollution.		
Prerequisites and co-requisites	Basic knowledge in the field of biology and chemistry.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	test	60.0%	50.0%
	exercises	60.0%	50.0%
Recommended reading	Basic literature	<ol style="list-style-type: none"><li>1. Symonides E.: Ochrona przyrody, Wydawnictwa Uniwersytetu Warszawskiego, 2007,</li><li>2. Dojlido J.R.: Chemia wód powierzchniowych, Wydawnictwo Ekonomia i Środowisko, Białystok, 1995.</li><li>3. Juda-Rezler K.: Oddziaływanie zanieczyszczeń powietrza na środowisko, Oficyna Wyd. Politechniki Warszawskiej, W-wa 2001.</li><li>4. Kowalik P.: Ochrona środowiska glebowego, Wydawnictwo Naukowe PWN, 2001 r.</li><li>5. Zadroga B., Olańczuk-Neyman K.: Ochrona i rekultywacja podłoża gruntowego, Wyd. PG, 2001.</li><li>6. KabataPendias A., Pendias H.: Biogeochemia pierwiastków śladowych, Wyd. Nauk. PWN, Warszawa 1993.</li><li>7. Dobrowolski Kazimierz A.: Polskie nauki ekologiczne wobec wyzwań globalnych i zadań praktycznych w kraju, Wydział Biologii Uniwersytetu Warszawskiego, wersja internetowa.</li></ol>	
	Supplementary literature	The current regulation concerning the protection of the environment.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Comparison of the state of air quality in different regions of Poland, based on actual measurement data from several measurement stations (Pomeranian: Gdańsk, Silesian voivodship: Sosnowiec or Gliwice, Warmian-Masurian Voivodeship: Puszcza Borecka).		
	Assessment of surface water quality based on actual measurement data and current regulations.		
	Analysis of the state of waste management in Poland based on Statistic Poland data.		
Work placement	Not applicable		