



Subject card

Subject name and code	Introduction to Environmental Science, PG_00060832						
Field of study	Chemical Technology						
Date of commencement of studies	October 2023	Academic year of realisation of subject			2023/2024		
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	1	Language of instruction			Polish brak		
Semester of study	1	ECTS credits			1.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Analytical Chemistry -> Faculty of Chemistry						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Paweł Kubica				
	Teachers		dr inż. Paweł Kubica				
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	0.0	15
	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	15		1.0		9.0	25
Subject objectives	Students are familiarized with the fundamentals about environmental issues.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_K02] understands the non-technical aspects and implications of the activities of a chemical engineer, including the impact on the environment, is aware of professional behaviour, observance of professional ethics and respect for diversity of views and cultures		Student understands the impact of undertaken technological activities on the environment. In addition, Student can use the principles of professional ethics.		[SK5] Assessment of ability to solve problems that arise in practice		
	[K6_W03] has knowledge of environmental protection in chemical technology, the classification of technological processes in terms of their environmental impact and how to eliminate the environmental impact of technological installations		The student knows the issues related to the impact of technological processes on the environment. Students can: - class technological solutions because of their environmental nuisance - to use in practice referred to technological solutions.		[SW1] Assessment of factual knowledge		
	[K6_U05] recognises and identifies the relationship between technological issues, implemented in industrial practice, and their impact on various elements of the environment, in the context of mechanisms and conditions of sustainable development, recognizes their systemic and non-technical aspects		Student is able to recognize dependencies between technological processes and understands its influence on the environment.		[SU2] Assessment of ability to analyse information		

Subject contents	Basic information about the environment and its components. Classifications sources of emissions to the environment due to: - Sources of emissions: - Nature of human activity - The range of the impact of emission sources. Classification of processes due to: - Degree of impact to the environment - How to eliminate the impact of technological systems on the environment. Basic information on how to waste gas, waste water treatment and utilization of by-products and waste. Presentation of the basic processes and responses, which are subject to contamination at the stage of environmental emissions. Discussion of the basic techniques of environmental protection against pollution (protection of restoration, remediation and prevention technologies, emissions). The importance of the various elements of the environment for technological processes.		
Prerequisites and co-requisites	Knowledge of the fundamentals of chemistry		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	final test	60.0%	100.0%
Recommended reading	Basic literature	Not included. The course is in polish.	
	Supplementary literature	Not included. The course is in polish.	
	eResources addresses	Adresy na platformie eNauczanie: Wstęp do Wiedzy o Środowisku TCh 2023/2024 - Moodle ID: 31674 https://enauzanie.pg.edu.pl/moodle/course/view.php?id=31674	
Example issues/ example questions/ tasks being completed	1. Atmospheric air: sources of pollution, transport routes of chemical and physical pollutants.2. The greenhouse effect and greenhouse gases, the potential to create the greenhouse effect.3. Water and water pollution.4. Pollution what is it? What could it be? How to avoid it and what are the sources of pollution (general division).5. Typical forms of organic contamination in the ground.		
Work placement	Not applicable		