GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Fundamentals of Environmental Protection, PG_00054683		
Field of study	Biotechnology		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2024/2025
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
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	prof. dr hab. inż. Bożena Zabiegała	
	Teachers	prof. dr hab. inż. Bożena Zabiegała prof. dr hab. inż. Agata Kot-Wasik	

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

To familiarize students with the basics of the issues related to the protection of the environment. Increase of the level of awareness regarding the environment.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_K05	The student is aware of the importance of any activity taken to reduce emissions of pollutants into the environment and the improvement of the environmental status	[SK5] Assessment of ability to solve problems that arise in practice
K6_U12	The student can respond properly in the case of a threat in working environment and can apply safety rules, especially with regard to the risks associated with the direction of study.	[SU2] Assessment of ability to analyse information
K6_W12	The student knows and is able to describe the processes taking place in the troposphere and stratosphere. He is able to assess the impact of anthropogenic human activity on the elements of the environment. He understands the essence of climate change.	[SW1] Assessment of factual knowledge

Subject contents

Basic concepts and definitions of the wider knowledge of the environment. Circulation of matter in nature. Homeostasis. Classification of emission sources. Types of environmental pollution. Eutrophication of surface waters. The greenhouse effect. The ozone hole. Radioactive pollution. State of the environment in Poland - the level of air pollution, soil and foodstuffs. Toxicity and ecotoxicity of different groups of inorganic and organic pollutants. Methods of assessing the impact of ekotoksyn on living organisms and the abiotic part of the environment. Effect of the manufacturing processes of consumer goods on the quality of the environment. Sustainable development. Ways to prevent pollution of the environment: - restoring the natural balance of footing - the role of forests and protective garments; - closed water circuits. - The use of biotechnology in eliminating pollution of the environment. Environmental pollution monitoring systems. International conventions on environmental protection. Legislation and organization of environmental protection in Poland.

Prerequisites and co-requisites

<table>
<tr><td>Assessment methods and criteria</td><td colspan="2"><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Lecture - Credit based on the result of the test held during the last lecture</td><td>60.0%</td><td>100.0%</td></tr>
</table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>1. A. Siedlecki, L. Gorgoń: Podstawowe procesy przemysłu chemicznego, PWN, Warszawa, 1985, rozdz. V. 2. A. Głowiak, E. Kempa, T. Winnicki, Podstawy ochrony środowiska, PWN, Warszawa 1989. 3. M. Ryng, Bezpieczeństwo techniczne w przemyśle chemicznym, WNT, Warszawa 1985. 4. Z. Przeździecki, Biologiczne skutki chemizacji środowiska, PWN, Warszawa, 1984. 5. E.J. Jasińska-Zubielewicz, Ergonomia. Toksykologia przemysłowa i środowiskowa. Wydawnictwa Politechniki Warszawskiej, Warszawa, 1988. 6. W. Hermanowicz, Chemia sanitarna, Arkady, Warszawa, 1984. 7. H. Remmert, Ekologia, PWRL, Warszawa,1985.</td></tr>
<tr><td>Supplementary literature</td><td>1. R.F. Dasmann, J.P. Milton, P.H. Freeman, Ekologiczne podstawy rozwoju ekonomicznego. PWN, Warszawa, 1980. 2. J. Warych, Oczyszczanie przemysłowycy gazów odlotowych, WNT, Warszawa, 1988. 3. Environmental Science, praca zbiorowa (red. L. Ryden, P. Miguła, M. Andersson) The Baltic Sea University, Uppsala, 2003. 4. Zarys ekotoksykologii (praca zbiorowa pod redakcją J. Namieśnika i J. Jaśkowskiego) EKO-Pharma, Gdańsk, 1995. 5. Pestycydy. Występowanie, oznaczanie i unieszkodliwianie (praca zbiorowa pod redakcją prof. dr hab. inż. Marka Biziuka) Wydawnictwa Naukowo-Techniczne, Warszawa 2001.</td></tr>
<tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:
Podstawy Ochrony Środowiska_2024 - Moodle ID: 37247
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=37247</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2">Basic definitions related to environmental protection, e.g. sustainable development, ecosystem, biosphere, anthroposphere, anthropopressure.

Description of processes occurring in the environment, e.g. discussion of processes occurring in the stratosphere, troposphere, hydrosphere.

Explanation of the greenhouse effect phenomenon. Explanation of processes occurring in the atmosphere taking into account the scale: global, continental or local.</td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
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