GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Ecological basis of environmental protection, PG_00057760						
Field of study	Green Technologies						
Date of commencement of studies	October 2026		Academic year of realisation of subject	2026/2027			
Education level	first-cycle studies		Subject group	Optional subject group			
Mode of study	Full-time studies		Mode of delivery	at the university			
Year of study	1		Language of instruction	English			
Semester of study	1		ECTS credits	2.0			
Learning profile	general academic profile		Assessment form	assessment			
Conducting unit	Laboratory of Bacterial Genetics -> Faculty of Chemistry -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Gracjana Klein-Raina					
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	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		1.0	19.0	50	
Subject objectives	Presentation of the relationship between organisms, organisms and the environment, presentation of the main problems of environmental protection and species on a global and local scale in relation to ecological issues, biodiversity in ecosystems, familiarization with the main protected species, characteristics of selected National Parks and Reserves in Poland, protected species occurring there, their ecological dependencies. The aim of the course will be not only to provide concise and legible information, but also to show how fascinating ecology and environmental protection are.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W04] is aware of the importance of environmental protection and has a basic knowledge of chemical and biological threats to the environment, with particular emphasis on anthropogenic factors, has a basic knowledge of knowledge of the principles of sustainable development as well as national and European environmental management conditions.	Students are able to assess and discuss priorities in the conservation of species and ecosystems. Students have a new approach to environmental protection in the XXI century.	[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation
[K6_K06] has awareness of the importance of non-technical aspects and effects of engineering activities, including its impact on the environment and the associated responsibility for decisions.	Students are able to evaluate and discuss key issues related to ecology and environmental protection.	[SK1] Assessment of group work skills [SK3] Assessment of ability to organize work [SK4] Assessment of communication skills, including language correctness [SK5] Assessment of ability to solve problems that arise in practice
[K6_W05] has an elementary knowledge of the fundamental concepts and problems of quality management, the general principles of creation and development of forms of individual entrepreneurship, application of the principles of work organization and integrated management, basic principles of quality control and analysis results; knowledge of basic legal aspects relating to the management of chemicals with particular emphasis on compounds polluting the environment and business, knows and understands the basic concepts and principles of the protection of industrial property and copyright and the need for management of intellectual property.	Students know the basic principles of environmental protection in connection with ecology and are able to manage and organize work aimed at environmental protection in accordance with applicable laws and regulations.	[SW2] Assessment of knowledge contained in presentation [SW1] Assessment of factual knowledge

Subject contents

Course content – lecture
the concept of species; mechanisms for the formation of new species; examples and protection of endangered species; competition between species and within species; predators and herbivores, parasitism; mutualism and commensalism; the basis of genetic diversity and its importance in environmental protection; use of molecular techniques in ecology; biodiversity - role and its protection; new technologies in environmental protection; national parks and reserves.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
passing lectures	60.0%	100.0%

Recommended reading

Basic literature	**Elements of Ecology** Thomas M. Smith and Robert Leo Smith (2012) 8 th Edition **Ecology** Michael L. Cain, Wiliam D. Bowman and Sally D. Hacker (2014) Third Edition **Environmental Biology** Mike Claver, Alan Lymbery, Jennifer McComb and Mike Bamford (2009)
Supplementary literature	**Essentials of Conservation Biology** Richard B. Primack (2006) Fourth Edition
eResources addresses	

Example issues/ example questions/ tasks being completed	**1.** How do species arise? **2.** Modern methods of protecting endangered species. **3.** The role of biodiversity.
Practical activites within the subject	Not applicable

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