

Subject card

Subject name and code	Introduced and invasive species for the environment, PG_00143498						
Field of study	Natural Resources Conservation						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2027/2028		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study Optional subject group 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	3		Language of instruction		Polish		
Semester of study	5		ECTS credits		2.0		
Learning profile	academic		Assessment form				
Conducting unit	Laboratory of Biosystematics and Ecology of Aquatic Invertebrates -> Department of Evolutionary Genetics and Biosystematics -> Faculty of Biology -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Agata Szwarc				
	Teachers						
Lesson types	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		2.0		8.0	25
Subject objectives	Deepening the knowledge of concepts related to alien and invasive organisms.						
	Presentation of the phenomenon of the natural environment of Poland against the background of similar climate regions with a much larger number of dangerous species, including parasites that are also dangerous to humans.						
	Presentation of the division of alien species based on their impact on the natural environment and the threat to native biodiversity, including humans.						
	Familiarization of students with possible migration paths of alien organisms.						
	Familiarization of students with the issues related to determining whether a given alien species can become an invasive or conflict organism in the system of Polish habitats and ecosystems.						
	Indication of the multiple effects of the appearance of alien species, including invasive ones, in Poland.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[OZPL3_K08] The graduate is ready to systematically update his/her natural knowledge and to apply it in practice	The student systematically updates his/her knowledge of nature and knows its practical applications	[SK1] oral statement/conversation/discussion
	[OZPL3_K01] The graduate is ready to recognise the limitations in his/her own knowledge and understands the need for continuous learning and development	The student knows the limitations of his/her own knowledge and understands the need for continuous learning and development	[SK1] oral statement/conversation/discussion
	[OZPL3_U03] The graduate is able to search for and use available sources of biological information, including electronic sources, and critically analyse them	The student searches for and uses available sources of biological information, including electronic sources, and critically analyzes them	[SU1] oral statement/conversation/discussion [SU3] text preparation/written work [SU4] test/exam - oral or written
	[OZPL3_W14] The graduate understands the relationship between the achievements of natural sciences and their potential applications in socio-economic contexts, while considering the sustainable use of biodiversity	The student explains the relationships between the achievements of natural sciences and the possibilities of their use in socio-economic life, taking into account the sustainable use of biodiversity	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion
	[OZPL3_U08] The graduate is able to use the scientific language typical of the biological sciences in discussions with specialists	In discussions with specialists, the student is able to use scientific language typical of biological sciences	[SU1] oral statement/conversation/discussion [SU4] test/exam - oral or written
	[OZPL3_W04] The graduate possesses advanced knowledge and understanding of the characteristics, systematics, and evolution of selected groups of organisms, as well as the basic concepts and mechanisms of evolution	The student presents the characteristics, taxonomy and evolution of selected groups of organisms, describes the basic concepts and mechanisms of evolution	[SW4] test/exam - oral or written
Subject contents	Explanation of the terms: alien species, invasive species. Discussion of the conditions of the natural environment of Poland in comparison to other regions with similar climatic conditions. Division of alien species in terms of their impact on the natural environment and on the safety of the population. Migration paths of alien species to Poland and paths of spread in the natural environment. Tolerance of habitat conditions and the possibility of settling areas outside the area of occurrence. Methods of diagnosing the potential possibility of settling the natural environment of Poland by various types of alien species from different zoogeographic areas. Characteristics card of an alien/invasive species. Personification of species dangerous (to the environment and humans) in the media and the fashion for owning and trading potentially invasive animals. The impact of civilization development and the possibility of spreading alien species. Protection of the natural environment and the spread of alien species. Education of society as an important factor in nature conservation and preventing the spread of alien species.		
Prerequisites and co-requisites	No requirements		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Presence	80.0%	0.0%
	Exam	51.0%	80.0%
	Essay	51.0%	20.0%
Recommended reading	Basic literature Krzysztofiak L., Krzysztofiak A. [red.]. 2015. Inwazyjne gatunki obcego pochodzenia zagrożeniem dla rodzimej przyrody. Stowarzyszenie Człowiek i Przyroda, Krzywe. Podbielkowski Z. 1995. Wędrowki roślin. Wyd. Szkolne i Pedagogiczne, Warszawa, ss. 239. Tokarska-Guzik B. 2005. The establishment and spread of alien plant species (kenophytes) in the flora of Poland. Wydawnictwo UŚ, Katowice, ss. 192.		

	Supplementary literature	Głowaciński Z., Okarma H., Pawłowski J., Solarz W. [red.] 2012. Gatunki obce w faunie Polski. Wyd. Internetowe. Instytutu Ochrony Przyrody PAN w Krakowie. http://www.iop.krakow.pl/gatunkiobce/ Sudnik-Wójcikowska B., Koźniewska B. 1988. Słownik z zakresu synantropizacji szaty roślinnej. Wydawnictwa Uniwersytetu Warszawskiego, Warszawa, ss. 93. Zajac M., Zajac A., Tokarska-Guzik B. 2009. Extinct and endangered archaeophytes and the dynamics of their diversity in Poland. Biodiv. Res. Conserv. 13: 17-24 Zajac M., Zajac A. 2009a. Apophytes as invasive plants in the vegetation of Poland. Biodiv. Res. Conserv. 15: 35-40.
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	Concepts: alien species, invasive species. Migration paths of alien species to Poland. Alien/invasive species data sheet.	
Work placement	Not applicable	

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