

Subject card

Subject name and code	Introduced and invasive species for ecosystems, PG_00154447						
Field of study	Biology						
Date of commencement of studies	October 2024	Academic year of realisation of subject			2026/2027		
Education level	undergraduate studies	Subject group			Optional subject group		
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			1.0		
Learning profile	academic	Assessment form					
Conducting unit	Pracownia Geobotaniki i Ochrony Przyrody -> Katedra Taksonomii Roślin i Ochrony Przyrody -> Faculty of Biology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Piotr Rutkowski				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	15.0	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	• To deepen knowledge of concepts related to alien and invasive organisms. • To present the division of alien species with regard to their impact in the natural environment and their threat to native biodiversity, including humans. • To familiarise students with the possible migration routes of alien organisms. • To indicate the multiple effects of the appearance of alien species, including invasive species in Poland. • Presentation of an alien/invasive species data sheet.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BIOLL3_K08] The graduate is ready to be honest, reliable and apply the principles of savoir-vivre in academic and professional work	an understanding of the absolute need for scientific honesty and integrity in the work carried out	[SK1] oral statement/conversation/discussion [SK3] text preparation/written work [SK4] test/exam - oral or written [SK5] implementation of a problem task
	[BIOLL3_W06] The graduate will know the characteristics, systematics and understand the evolution of selected groups of organisms including molecular basis and basic concepts and mechanisms of evolution	ability to assess the risks associated with the appearance of alien species	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion [SW3] text preparation/written work [SW5] implementation of a problem task
	[BIOLL3_W02] The graduate knows the structure and properties of biological macromolecules, the molecular mechanisms of basal metabolic pathways and genetic information flow and the sources of variation in organisms; the rules of inheritance	understanding of issues related to alien and invasive fauna	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion [SW3] text preparation/written work [SW5] implementation of a problem task
	[BIOLL3_U05] The graduate will be able to synthesise data from a variety of sources and draw appropriate conclusions	ability to analyse and synthesise information relating to the assessment of the invasive potential of a species.	[SU1] oral statement/conversation/discussion [SU3] text preparation/written work [SU4] test/exam - oral or written [SU5] implementation of a problem task
	[BIOLL3_W10] The graduate is familiar with the development and current state of knowledge and the latest trends in biology, as well as their relationship with other natural disciplines	orientation on contemporary problems and research directions related to the spread of fauna alien to the natural environment of Poland	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion [SW3] text preparation/written work [SW5] implementation of a problem task
	[BIOLL3_U07] The graduate should be able to independently search for and use available sources of biological information, including electronic sources	ability to search independently for information that may facilitate action in relation to the correct assessment of threats associated with alien species	[SU1] oral statement/conversation/discussion [SU3] text preparation/written work [SU4] test/exam - oral or written [SU5] implementation of a problem task
	[BIOLL3_K01] The graduate is prepared to evaluate their own knowledge, understand the need for continuous learning and development, and is open to new ideas	openness to the issue of alien species	[SK1] oral statement/conversation/discussion [SK3] text preparation/written work [SK4] test/exam - oral or written [SK5] implementation of a problem task
Subject contents	Explain the terms: alien species, invasive species. Discuss the environmental conditions of Poland in comparison with other regions with similar climatic conditions. The division of alien species in terms of impact on the environment and on the safety of the population. Routes of migration of alien species to Poland and routes of spreading in the environment. Tolerance of habitat conditions and the possibility of colonisation of areas outside the area of occurrence. Methods of diagnosis of the potential possibility of colonisation of the Polish environment by different types of alien species from different zoogeographical areas. Alien/invasive species character sheet. Personification of threat species (to the environment and humans) in the media and the fashion of owning and trading in potentially invasive animals. The impact of the development of civilisation and the potential for the spread of alien species. Environmental protection and the spread of alien species. Education of the public as an important factor in nature conservation and the prevention of the spread of alien species.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	course credit with a grade	51.0%	100.0%

Recommended reading	Basic literature	Tokarska-Guzik B. 2005. The establishment and spread of alien plant species (kenophytes) in the flora of Poland. Wydawnictwo UŚ, Katowice, ss. 192. Zajac M., Zajac A., Tokarska-Guzik B. 2009. Extinct and endangered archaeophytes and the dynamics of their diversity in Poland. Biodiv. Res. Conserv. 13: 1724. Zajac M., Zajac A. 2009a. Apophytes as invasive plants in the vegetation of Poland. Biodiv. Res. Conserv. 15: 35-40. Zajac M., Zajac A. 2009b. Elementy geograficzne rodzimej flory Polski. Instytut Botaniki Uniwersytetu Jagiellońskiego, Kraków, ss. 94.
	Supplementary literature	Literature selected by the instructor and made available to students at the first lecture and related to individual topics.
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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