

**Subject card**

<b>Subject name and code</b>	Anthropogenic transformation of ecosystems, PG_00103917						
<b>Field of study</b>	Natural Resources Conservation						
<b>Date of commencement of studies</b>	October 2023	<b>Academic year of realisation of subject</b>	2025/2026				
<b>Education level</b>	Bachelor's studies	<b>Subject group</b>	Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study				
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>	at the university				
<b>Year of study</b>	3	<b>Language of instruction</b>	Polish				
<b>Semester of study</b>	5	<b>ECTS credits</b>	1.0				
<b>Learning profile</b>	academic	<b>Assessment form</b>	credit				
<b>Conducting unit</b>							
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>	dr Renata Afranowicz-Cieślak					
	<b>Teachers</b>	dr Renata Afranowicz-Cieślak dr Anna Pędziszewska dr Rafał Chmara					
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	<b>SUM</b>
	<b>Number of study hours</b>	30.0	0.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	<b>SUM</b>		
	<b>Number of study hours</b>	30	0.0	0.0	30		
<b>Subject objectives</b>	1. Learning about the classification systems of synanthropic plants. 2. Knowledge of anthropopressure factors causing changes in nature and determining the causes and mechanisms of these changes. 3. Understanding the changes of phytocoenoses and their habitats under the influence of human influence. 4. Getting to know methods of research and description of changes in the structure and functions of ecosystems under the influence of human influence.						

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	- sees the need for continuous professional education, updating knowledge about the natural environment and its practical applications	[SK4] test/exam - oral or written
	[OZPL3_K06] The graduate is prepared to demonstrate responsibility for their own and others' safe working conditions in the laboratory and in the field, and is able to recognise hazardous situations and take appropriate action	- this learning outcome is realized during exercises	[SK6] demonstration of practical skills
	[OZPL3_U06] The graduate is able to make observations and perform basic physical, biological and chemical measurements in the field or laboratory	- determines and distinguishes the effects of various forms of anthropopressure on nature, identifies their causes based on the visible effects of changes	[SU4] test/exam - oral or written
	[OZPL3_U01] The graduate is able to use basic apparatus and research tools and maintains the correct sequence of operations in laboratory and field work	- this learning outcome is realized during exercises	[SU6] demonstration of practical skills
	[OZPL3_W06] The graduate has an advanced understanding of the names and types of natural environments, including their structural and functional characteristics	- knows the basics of the functioning of natural and humanmodified natural systems	[SW4] test/exam - oral or written
	[OZPL3_W05] The graduate understands the fundamental principles and mechanisms of life at the population, biocenosis, and ecosystem levels, as well as the temporal and spatial factors that influence biodiversity	- characterizes the levels of biological diversity and interactions between organisms and the environment, recognizes disturbances in these interactions due to anthropopressure - knows the relationship between the nature and intensity of changes in flora, fauna, ecosystems and landscapes and the forms of human activity in time and space - recognizes and explains the impact of anthropopressure on specific processes occurring in nature at various levels of its organization	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
Subject contents	Classifications of synanthropic plants. Indicators of anthropogenic changes in flora. Causes of ecosystem transformations. Dependence of the nature and intensity of changes in flora, fauna, biocenoses and habitats on the intensity of human activity. Changes in ecosystems at various stages of the development of human civilization. Methods of researching changes depending on the spatial and temporal scale. Changes in habitats, phytocoenoses and zoocenoses - their mutual connections; changes at the landscape level. Synanthropization causes, mechanism, effects. The degree of naturalness of ecosystems and their susceptibility to anthropopressure. Degeneration of plant communities. Natural and economic consequences of ecosystem changes. Potential natural vegetation research methodology and application. Forecasting ecosystem changes methodology and practical application.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	written assessment	51.0%	100.0%
Recommended reading	<p>Basic literature</p> <p>Fudali E. 2009. Anthropogenic changes in ecosystems. Ed. Univ. Przyr., Wrocław.</p> <p>Lampert W., Sommer U. 1996. Ecology of inland waters. Ed. PWN, Warsaw.</p> <p>Makohonienko M., Makowiecki D., Kurnatowska Z. (eds.), 2007. Interdisciplinary studies on the environment and culture in Poland. Environment - Man - Civilization, volume I. Bogucki Ed. Scientific, Poznań.</p> <p>Roo-Zielińska E., Solon J., Degórski M., 2007. Assessment of the state and transformation of the natural environment based on geobotanical, soil and landscape indicators. Theoretical foundations and examples of applications. Monographs IGIPZ PAN 9, Warsaw.</p> <p>Symonides E. 2007. Nature conservation. Ed. University of Warsaw, Warsaw.</p> <p>Szmeja J. 2005. Guide to research on aquatic vegetation. Ed. Univ. Gdańsk, Gdańsk.</p> <p>Roberts N. 2014. The Holocene. An Environmental History. Blackwell, Oxford.</p>		

	Supplementary literature	<p>Afranowicz-Cieślak R. 2011. Udział i rola antropofitów we florze zadrzewień w rolniczym krajobrazie Żuław Wiślanych. <i>Acta Botanica Silesiaca</i> 6: 153-166.</p> <p>Jackowiak B. 1990. Antropogeniczne przemiany flory roślin naczyniowych miasta Poznania. <i>Wyd. Nauk. UAM</i> 42, Poznań.</p> <p>Pędziszewska A., Tylmann W., Witak M., Piotrowska N., Maciejewska E., Latałowa M. 2015. Holocene environmental changes reflected by pollen, diatoms, and geochemistry of annually laminated sediments of Lake Suminko in the Kashubian Lake District (N Poland). <i>Review of Paleobotany and Palynology</i> 216: 55-75.</p> <p>Starkel L. (red.). 1999. <i>Geografia Polski środowisko przyrodnicze</i>. Wyd. Nauk. PWN, Warszawa.</p> <p>Sudnik-Wójcikowska B. 1998. Czasowe i przestrzenne aspekty procesu synantropizacji flory na przykładzie wybranych miast Europy Środkowej. <i>Wyd. UW</i>, Warszawa.</p>
Example issues/ example questions/ tasks being completed	eResources addresses	
Work placement	Not applicable	

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