

**Subject card**

<b>Subject name and code</b>	Aerobiology, PG_00144111						
<b>Field of study</b>	Natural Resources Conservation						
<b>Date of commencement of studies</b>	October 2024	<b>Academic year of realisation of subject</b>			2026/2027		
<b>Education level</b>	undergraduate studies	<b>Subject group</b>			Optional subject group		
<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>	6	<b>ECTS credits</b>			1.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>					
<b>Conducting unit</b>	Pracownia Paleoeologii i Archeobotaniki -> Katedra Ekologii Roślin -> Faculty of Biology						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr Anna Pędziszewska				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	0.0	0.0	15.0	0.0	0.0	15
	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	SUM
	<b>Number of study hours</b>	15		3.0		7.0	25
<b>Subject objectives</b>	<p>1. to learn about research methods and the benefits of monitoring the concentration and precipitation of modern pollen in medicine, ecology, agriculture and the judiciary.2. To understand the epidemiological risks associated with the presence of pollen and fungal spores in the air.3. to acquire skills in planning and implementing aeropalinological monitoring.</p>						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[OZPL3_K07] The graduate is prepared to demonstrate responsibility for the equipment/ materials entrusted and respects the work of others	is responsible for the equipment and materials entrusted	[SK8] observation of student's independent or team work
	[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	uses basic research apparatus and tools and maintains the correct sequence of operations in laboratory and field work	[SU5] implementation of a problem task [SU6] demonstration of practical skills
	[OZPL3_W11] The graduate possesses a fundamental understanding of the concepts and terminology of natural science, as well as knowledge of the evolution of natural sciences and the research methods employed in them. They are also cognizant of the potential for practical application	Knows the basic concepts and terminology of aerobiology and has knowledge of the applied research methods, as well as the possibility of their translation into practical activities practical	[SW4] test/exam - oral or written
	[OZPL3_W01] The graduate possesses advanced knowledge and understanding of the structural and functional relationships at the cellular, tissue, organ, and body levels.	knows the structure of pollen grains	[SW4] test/exam - oral or written
	[OZPL3_U06] The graduate is able to make observations and perform basic physical, biological and chemical measurements in the field or laboratory	makes microscopic observations and measures the concentration of pollen grains and spores in the atmosphere	[SU2] presentation/project/paper/report [SU5] implementation of a problem task [SU6] demonstration of practical skills
	[OZPL3_W07] The graduate has an advanced understanding of the methods and means of nature and environmental protection, including nature monitoring	presents methods and methods of aerobiological monitoring	[SW2] presentation/project/paper/report [SW5] implementation of a problem task
[OZPL3_K02] The graduate is ready to work effectively in a team, taking on different roles within it	can work effectively in a team	[SK8] observation of student's independent or team work	
Subject contents	<p>Theoretical and practical basis of aerobiology. Pollen grains - structure, function and importance in nature and for humans. Methods of measuring of pollen content in the air (gravimetric, volumetric). Characteristics of pollen seasons of selected allergenic plants. Impact of pollen and spores on the human body. Application of aerobiological monitoring in the prevention and treatment of pollen allergies (calendar pollen calendars, aerobiological forecasting, organization and role of aerobiological information networks). Possibilities of using monitoring studies and research on modern pollen fallout in other fields of knowledge (urban greenery design, ecology, forensics, agriculture). Determination and reading of pollen concentrations in the atmosphere</p>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	A practical test in recognizing the basic taxa of pollen grains	51.0%	50.0%
	choice and completion test	51.0%	50.0%

Recommended reading	Basic literature	<p>DAmato G., Spieksma F. Th. M., Bonini S. (eds.). 1991. Allergenic Pollen and Pollinosis in Europe. Blackwell Sci. Publ., Oxford-Vienna.</p> <p>Faegri K., Iversen J. 1978. Podręcznik analizy pyłkowej. Wyd. Geol., Warszawa.</p> <p>Moor P. D., J. A. Webb, Collinson M. E. 1991. Pollen analysis. Blackwell Sci., London,</p> <p>Weryszko-Chmielewska E. 2007. Aerobiologia. Wyd. AR w Lublinie, Lublin.</p> <p>Latałowa M., Uruska A., Pędziszewska A., Góra M., Dawidowska A. 2005. Diurnal patterns of airborne pollen concentrations of the selected tree and herb taxa in Gdańsk (Northern Poland). Grana 44: 192-201</p>
	Supplementary literature	<p>Nowosad J., Stach A., Kasprzyk I., Chłopek K., Dąbrowska-Zapart K., Grewling L., Latałowa M., Pędziszewska A. et al. 2018. Statistical techniques for modeling of Corylus, Alnus, and Betula pollen concentration in the air. Aerobiologia 34, 301313.</p> <p>Nowosad J., Stach A., Kasprzyk I., Weryszko-Chmielewska E., Piotrowska-Weryszko K., Puc M., Grewling Ł., Pędziszewska A., Uruska A., Myszkowska D., Chłopek K., Majkowska-Wojciechowska B. 2016. Forecasting model of Corylus, Alnus, and Betula pollen concentration levels using spatiotemporal correlation properties of pollen count. Aerobiologia 32: 453-468.</p> <p>Latałowa M., Uruska A., Pędziszewska A., Góra M., Dawidowska A. 2005. Diurnal patterns of airborne pollen concentrations of the selected tree and herb taxa in Gdańsk (Northern Poland). Grana 44: 192-201</p>
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	Knowledge of seasonal changes in the composition of allergenic pollen grains and fungal spores in the ambient air. Practical learning to identify pollen grains of basic taxa. Independent aerobiological monitoring by gravimetric method. Practical basics of aerobiological monitoring by volumetric method; operation of apparatus, pollen analysis, methods of determining pollen seasons.	
Work placement	Not applicable	

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