

Subject card

Subject name and code	Aerobiology, PG_00207475						
Field of study	Biology						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2028/2029		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study 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	6		ECTS credits		1.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Laboratory of Paleoecology and Archaeobotany -> Department of Plant Ecology -> Faculty of Biology -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Anna Pędziszewska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	15.0	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		1.0		9.0	25
Subject objectives	1. To learn about the research methods and benefits of monitoring the concentration and precipitation of modern pollen in ecology, medicine, agriculture and 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 monitoring of concentration and precipitation of modern pollen.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BIOLL3_W01] The graduate knows and understands at an advanced level the structure and functioning of organisms at all levels of the organization of life - from the cell (prokaryotic and eukaryotic), through tissues, organs, to the organism - as well as the relationships between them and their adaptations to the environment	shows the structure of pollen grains	[SW4] test/exam - oral or written
	[BIOLL3_U03] The graduate is able to search for, select and critically analyze information from various sources, including scientific literature and electronic databases, as well as read and understand scientific texts in Polish and English	carries out microscopic observations and measures the concentration of pollen grains and spores in the atmosphere, using identification keys and atlases	[SU5] implementation of a problem task [SU6] demonstration of practical skills
	[BIOLL3_U01] The graduate is able to use basic research techniques and tools appropriate for the biological sciences and perform physical, chemical and biological observations and measurements in the laboratory and in the field, individually and in a team, while organizing her/his work appropriately and in a maintained way	uses basic equipment and research tools and follows the correct sequence of steps in laboratory and field work	[SU2] presentation/project/paper/report [SU6] demonstration of practical skills
	[BIOLL3_K04] The graduate is ready to apply the principles of bioethics, scientific integrity and honesty, including the proper handling of biological material and respect for intellectual property	is responsible for the equipment and materials entrusted to them	[SK8] observation of student's independent or team work
	[BIOLL3_K01] The graduate is ready to critically evaluate her/his biological knowledge and continuously update and develop it, taking into account scientific advances and the needs of practice	is able to work effectively as part of a team	[SK8] observation of student's independent or team work
	[BIOLL3_W04] The graduate knows and understands at an advanced level the experimental methods and techniques used in biological sciences, as well as the principles of evaluation and analysis of natural processes and phenomena using physical and chemical measurements and IT tools for data processing and interpretation	presents methods and techniques for aerobiological monitoring	[SW3] text preparation/written work
	[BIOLL3_W06] The graduate knows the types of natural habitats, selected species of flora and fauna (with particular emphasis on coastal environments) as well as methods of nature conservation and the principles of sustainable development	He is familiar with the morphology of highly allergenic pollen and the key taxa that make up Poland's plant communities	[SW4] test/exam - oral or written [SW5] implementation of a problem task

Subject contents	Theoretical and practical basis of aerobiology. Pollen grains - structure, function and importance in nature and for humans. Familiarizing students with the phenomena affecting the production and spread of pollen grains and spores. Methods of measuring pollen content in the air (gravimetric, volumetric). Characteristics of pollen seasons of selected allergenic plants. The effects of pollen and spores on the human body. The use of aerobiological monitoring in the prevention and treatment of pollen allergies (pollen calendars, forecasting aerobiology, organization and role of aerobiological information network). Possibilities of using monitoring studies and research on modern pollen fallout in other fields of knowledge (urban greenery design, ecology, forensic science, agriculture, organization of the network of contemporary pollen fallout - Pollen Monitoring Program.). Practical part Getting to know the morphology of grains of the most important taxa building plant communities of Poland and pollen of particularly allergenic effect. Examination of pollen content in moss samples and in the air (gravimetric method, volumetric method - operation of Burkard apparatus)		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	choice and completion test	51.0%	50.0%
	Practical recognition of pollen grains of different taxa	51.0%	50.0%
Recommended reading	Basic literature	Weryszko-Chmielewska E. 2007. Aerobiologia. Wyd. AR w Lublinie, Lublin. D'Amato G., Spieksma F. Th. M., Bonini S. (eds.). 1991. Allergenic Pollen and Pollinosis in Europe. Blackwell Sci. Publ., Oxford-Vienna. Faegri K., Iversen J. 1978. Podręcznik analizy pyłkowej. Wyd. Geol., Warszawa. Moor P. D., J. A. Webb, Collinson M. E. 1991. Pollen analysis. Blackwell Sci., London. 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	
	Supplementary literature	Nowosad J., Stach A., Kasprzyk I., Chłopek K., Dąbrowska-Zapart K., Grewling L., Latałowa M., Pędziszewska A., Majkowska-Wojciechowska M., Myszkowska D., Piotrowska-Weryszko K., Weryszko-Chmielewska E., Puc M., Rapiejko P., Stosik T. 2018. Statistical techniques for modeling of Corylus, Alnus and Betula pollen concentration in the air. Aerobiologia	
	eResources addresses		
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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