University of Gdańsk

Subject card

Subject name and code	Aerobiology, PG_00154461		
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	2.0	8.0	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_W11] The graduate knows and understands at an advanced level the methods of statistical analysis and their importance in the interpretation of phenomena and processes	Has knowledge of 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
[BIOLL3_K02] The graduate is prepared to critically self-assess his/her own competences and to update and improve his/her knowledge and skills	can work effectively in a team	[SK8] observation of student's independent or team work
[BIOLL3_K07] The graduate is prepared to apply the principles of bioethics consciously	is responsible for the equipment and materials entrusted	[SK8] observation of student's independent or team work
[BIOLL3_U01] The graduate will be able to use basic apparatus and research tools and follow 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	[SU2] presentation/project/paper/ report [SU6] demonstration of practical skills
[BIOLL3_U06] The graduate can read with comprehension scientific biological texts in Polish and simple texts in English	makes microscopic observations and measures the concentration of pollen grains and spores in the atmosphere	[SU2] presentation/project/paper/ report [SU6] demonstration of practical skills
[BIOLL3_W01] The graduate identify the constituent elements and explain the differences in the structure and function of prokaryotic and eukaryotic cells	presents the structure of pollen grains	[SW4] test/exam - oral or written
[BIOLL3_W07] The graduate is conversant with the types of natural environments (habitats) from a structural and functional perspective, as well as the selected species of flora and fauna of coastal areas and the methods and forms of nature conservation	presents methods of aerobiological monitoring	[SW4] test/exam - oral or written

Subject contents

Theoretical and practical basis of aerobiology. Pollen grains - structure, function and importance in nature and for humans. Familiarizing studentswith 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 thehuman body. The use of aerobiological monitoring in the prevention and treatment of pollen allergies (pollen calendars, forecastingaerobiology, organization and role of aerobiological information network). Possibilities of using monitoring studies and research on modernpollen fallout in other fields of knowledge (urban greenery design, ecology, forensic science, agriculture, organization of the network of contemporarypollen fallout - Pollen Monitoring Program.).Practical partGetting 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
Practical recognition of pollen grains of different taxa	51.0%	50.0%
choice and completion test	51.0%	50.0%

Recommended reading	Basic literature	Weryszko-Chmielewska E. 2007. Aerobiologia. Wyd. AR w Lublinie, Lublin. DAmato G., Spieksma F. Th. M., Bonini S. (eds.). 1991. Allergenic Pollen and Pollinosis in Europe. Blackwell Sci. Publ., Oxford-Vienna.u 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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