University of Gdańsk

Subject card

Subject name and code	Long-term changes in the natural environment, PG_00198109		
Field of study	Natural Resources Conservation		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2027/2028
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study Subject group related to scientific research in the field of study
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	4	ECTS credits	1.0
Learning profile	academic	Assessment form	credit
Conducting unit			
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	3.0	7.0	25

Subject objectives

To provide a basic knowledge of long-term environmental change as a basis for assessing contemporary natural processes and possible future environmental change. To demonstrate the necessity of interdisciplinary research, taking into account the geological time scale, for understanding mechanisms of environmental change. To be introduced to the possibilities of using bioindicative properties of different groups of organisms for palaeoenvironmental reconstructions. To acquire the theoretical knowledge and practical skills needed to select palaeoecological methods and sites.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OZPL3_U04] The graduate is able to plan and carry out simple research tasks in the biological sciences under the guidance of a supervisor	performs simple research tasks under the guidance of a mentor in the area of palaeoecology	[SU5] implementation of a problem task
[OZPL3_U01] The graduate is able to use basic apparatus and research tools, maintains the correct sequence of operations in laboratory and field work and apply the principles of savoir-vivre in practice	uses basic research apparatus and tools and maintains the correct sequence of operations in laboratory and field work	[SU8] observation of student's independent or team work
[OZPL3_W11] The graduate have an advanced knowledge and 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	is familiar with basic palaeoecological concepts and terminology and is aware of their of their potential use in predicting future environmental change	[SW1] oral statement/ conversation/discussion [SW3] text preparation/written work [SW5] implementation of a problem task
[OZPL3_W05] The graduate understands the principles and mechanisms of life at the population, biocenosis, and ecosystem levels, as well as the temporal and spatial factors that influence biodiversity.	explain the basic principles and describe the mechanisms of ecosystem functioning and the temporal and spatial determinants of changes in the natural environment	[SW3] text preparation/written work
[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	demonstrates responsibility for his/her own and others' safe working conditions in the laboratory and in the field, and is able to recognise hazardous situations and take take appropriate action	[SK8] observation of student's independent or team work
[OZPL3_K08] The graduate is ready to systematically update his/her natural knowledge and to apply it in practice	systematically updates his/her knowledge of nature and knows its practical applications	[SK1] oral statement/conversation/ discussion
[OZPL3_W06] The graduate has an advanced understanding of the names and types of natural environments, including their structural and functional characteristics	names the types of palaeoecological sites and characterises the degree of of transformation of the natural environment	[SW3] text preparation/written work
[OZPL3_K01] The graduate is ready to recognise the limitations in his/her own knowledge and understands the need for continuous learning and development	knows the limitations of his/her own knowledge and understands the need for continuous learning and development	[SK1] oral statement/conversation/ discussion
[OZPL3_U06] The graduate is able to make observations and perform basic physical, biological and chemical measurements in the field or laboratory	makes observations of palaeoecological material and performs in the field and laboratory basic descriptions and analyses of the material	[SU3] text preparation/written work [SU6] demonstration of practical skills

Subject contents

basics of description and determination of palaeoecological sediments (lithological description by Troels-Smith method). Familiarisation with types ofFossil remains and proper methods of preservation. Basics of pollen and macroscopic plant remains analysis methodology.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
report II	51.0%	50.0%
report I	51.0%	50.0%

Recommended reading	Basic literature	Przewodnik do oznaczania torfów i osadów jeziornych. PWN, Warszawa. Berglund B.E. 1986. Handbook of Holocene Palaeoecology and Palaeohydrology. Wiley & Sons, Chichester-New York Moore, P.D., Webb, J.A. and Collinson, M.E. (1991) Pollen Analysis. 2nd Edition, Blackwell, Oxford, 1-216.
	Supplementary literature	Dybova-Jachowicz S., Sadowska A. (red.). 2003. Palinologia. Wyd. IB PAN, Kraków. Lityńska-Zając M., Wasylikowa K. 2005. Przewodnik do badań archeobotanicznych. Sorus, Poznań. Tobolski K. 2000.
	eResources addresses	
Example issues/ example questions/ tasks being completed	learning to determine pollen grains of basic tree speciespreparation of palynological samples for acetolysis.pollen analysis of palynological samples (basics)analysis of chironomideae (basics)	
Work placement	Not applicable	

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