University of Gdańsk

Subject card

Subject name and code	Palaeoecology, PG_00197054		
Field of study	Biology		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	Master'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	1	Language of instruction	Polish
Semester of study	2	ECTS credits	1.0
Learning profile	academic	Assessment form	credit
Conducting unit	Department of Plant Ecology -> Faculty of Biology -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Joanna Święta-Musznicka	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	15.0	0.0	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 knowledge on research methods for reconstructing long-term changes in the natural environment, with particular emphasis on bio-indicative methods. Transfer of knowledge on climate and vegetation changes in the Quaternary period, with particular emphasis on the characteristics of the natural environment at the end of the last glaciation and in the Holocene, and the role of settlement. To provide knowledge on human use of plants in the past. To develop the ability to plan interdisciplinary research at palaeoecological sites.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BIOLMU2_W01] the graduate has a deep knowledge and understanding of natural phenomena and processes at various levels of complexity	understands the need for long-term research that takes into account the historical and geological time scale	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report [SW5] implementation of a problem task
[BIOLMU2_W05] The graduate has an in-depth knowledge and understanding of the dynamic development of the biological sciences and is well versed in new research trends and disciplines	learns about new directions and applications of new methods in environmental research	[SW4] test/exam - oral or written [SW3] text preparation/written work [SW5] implementation of a problem task
[BIOLMU2_U07] the graduate is able to critically compare biological information from various sources and draw justified conclusions on this basis	is able to formulate a research question in relation to the information that can be obtained from a particular palaeoecological site	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work [SU5] implementation of a problem task
[BIOLMU2_K07] the graduate is ready to systematically update biological knowledge and information on its practical applications	is open to interdisciplinary cooperation, valuing expertise	[SK5] implementation of a problem task [SK8] observation of student's independent or team work

Subject contents	Problems of Quaternary palaeoecology, including the late Pleistocene and Holocene; importance of studies of long-term environmental change for assessing present dynamics and future changes in abiotic and biotic components of the environment. Lithological classifications and absolute dating methods. Review of palaeobotanical, palaeozoological and geochemical methods; application of molecular biology in palaeoecology; use of bioindicative properties of organisms to reconstruct elements of terrestrial and aquatic environments. Outline of the Quaternary transformations of Europe's natural environment against the background of the theory of climatic-edaphic cycles. Hypotheses on the cyclicity of climate change. Extinction of large mammals at the end of the Pleistocene. Outline of the vegetation history of Poland after the last glaciation. The influence of prehistoric settlement and economy on the environment and the process of synanthropisation of vegetation. Auditing exercises are conducted in the form of block classes in the second half of the summer semester.
Prerequisites and co-requisites	basics of biology and ecology

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
worksheet I	51.0%	25.0%
colloquium	51.0%	25.0%
attendance	85.0%	0.0%
worksheet II	51.0%	25.0%
worksheet III	51.0%	25.0%

Recommended reading

Basic literature	Alverson K.D., Bradley R.S., Pedersen T.F. 2003. Paleoclimate, Global Change and the Future. Springer, Berlin-Heidelberg-New York. Berglund B.E. 1986. Handbook of Holocene Palaeoecology and Palaeohydrology. Wiley & Sons, Chichester-New York. Birks H.J.B., Birks H.H. 1980. Quaternary Palaeoecology. E. Arnold, London. Elias i in. 2005-2007. Encyclopedia of Quaternary Sciences. Elsevier. Mackay A., Battarbe R., Birks J., Oldfield F. 2003. Global change in the Holocene. Arnold, New York.
Supplementary literature	Gornitz V. (red.). 2009. Encyclopedia of Paleoclimatology and ancien Environments. Springer, Dordrecht, The Netherlands. Ralska-Jasiewiczowa M., Latałowa M., Wasylikowa K., Tobolski K., Madeyska E., Wright HE., Turner Ch. 2004. Late Glacial and Holocene vegetation in Poland based on isopollen maps. W. Szafer Institute of Botany, Polish Academy of Sciences, Kraków. Roberts N. 1998. The Holocene. An Environmental History. Blackwell, Oxford. Lindner L. 1992. Czwartorzęd. Osady, metody badań, stratygrafia. Wyd. PAE, Warszawa. Makohonienko M., Makowiecki D., Kurnatowska Z. (red.), 2007. Studia interdyscyplinarne nad środowiskiem i kul-turą w Polsce. ŚrodowiskoCzłowiek-Cywilizacja, tom I. Bogucki Wyd. Naukowe, Poznań.
eResources addresses	
Example issues/ example questions/ tasks being completed	Fossil sediments: description and classifications. Description of macroscopic remains. Selection of palaeoecological methods to study specific palaeoecosystems. Holocene as interglacial, climatic predictions. Main forms of human use of plants, development of agriculture.
Work placement	Not applicable

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