University of Gdańsk

Subject card

Subject name and code	Geological methods in archaeology, PG_00193051						
Field of study	Geology						
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	Department of Geophysics -> Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Leszek Łęczyński					
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	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		1.0		9.0	25
Subject objectives	Introduction to geological and geophysical survey methods used in terrestrial and underwater archaeology						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[GEOLL3_W03] knows and identifies paleontological, mineralogical, petrographic and structural objects using appropriate methods	Knows and identifies archaeological sites using appropriate geological and geophysical methods	[SW4] test/exam - oral or written
[GEOLL3_U01] is able to apply basic measurement and analytical techniques in the field and in the laboratory, plans to conduct research and measurements	is able to apply basic measuring and analytical techniques in the field of geophysics and geology, and to plan surveys and measurements	[SU4] test/exam - oral or written
[GEOLL3_W02] knows and understands the terminology appropriate in science and natural sciences	knows and understands terminology specific to archaeology and the natural sciences	[SW4] test/exam - oral or written
[GEOLL3_K04] is ready for self-criticism and drawing conclusions based on self-analysis; is willing to behave in compliance with professional ethics	Is willing to self-evaluate on the basis of Self-analysis and conduct in accordance with the ethics of the profession	[SK4] test/exam - oral or written
[GEOLL3_U06] is able to identify geological objects and combine them with geological processes and anthropogenic environmental transformations	Is able to identify archaeological sites and link them to anthropogenic transformations of the environment	[SU4] test/exam - oral or written
[GEOLL3_U05] can reconstruct the history of geological development of selected regions in Poland and in the world on the basis of maps, cross-sections and exposures in the field	can reconstruct the history of geological development of selected regions in Poland and in the world on the basis of maps, cross-sections and field exposures in relation to archaeological research	[SU4] test/exam - oral or written
[GEOLL3_K03] is willing to exercise caution and criticism in receiving information from scientific literature, the Internet and other media related to natural sciences	critically use source information, in Polish and English, including archival and electronic databases, on geological, geophysical and archaeological issues	[SK4] test/exam - oral or written

Subject contents

Introduction to the subject of archaeological and geoarchaeological research.
Methodology of field geological and geophysical investigations used in archaeology.
Laboratory geoarchaeological investigations.
Determination of the position of a given layer (unit) in the archaeological stratigraphy and simultaneous reconstruction of its sedimentation environment in the context of a given type of archaeological site.
Investigations of wrecks deposited on the seabed.
Low-level photogrammetry of the archaeological site.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
colloquium	51.0%	100.0%

Recommended reading

Basic literature	Herz N., Garrison E.G.1998. Geological Methods for Archaeology, Oxford. DEAGAN K A. 2008 Environmental archaeology and historical archaeology. [W:]: Reitz E.J., Scarry C.M. & Scudder S.J. (red.), Springer Science _ Business Media, LLC, New York: 2142. ENVIRONMENTAL ARCHAEOLOGY. 2002 A guide to the theory and practice of methods, from sampling and recovery to post-excavation. English Heritage Publications, Empress Litho, London: 148. Kędzierski M, i in. Opracowania fotogrametryczne niskiego pułapu. WAT. Warszawa 2014. Ławecka D. 2003. Wstęp do archeologii, Warszawa Kraków. Mycielska-Dowgiałło E., Rutkowski J. (red.), 1995. Badania osadów czwartorzędowych, wybrane metody i interpretacja wyników. Warszawa.
Supplementary literature	Mycielska-Dowgiałło E., Rutkowski J. (red.), 2009. Badania cech teksturalnych osadów czwartorzędowych i wybrane metody oznaczania ich wieku. Warszawa. Pelisiak A., Gębica P. 2007. Podstawy geomorfologii i gleboznawstwa dla archeologów. Rzeszów. Pollard A.M. 1999. Geoarchaeology: an introduction. W: A.M. Pollard (ed.), Geoarchaeology: explorations, environments, resources. Geological Society Special Publications 165. Renfrew A.C. 1976. Archaeology and the Earth Sciences. W: D.A. Davidson, M.L. Shackley (eds), Geoarchaeology: Earth Science and the past. London.
eResources addresses	

Example issues/ example questions/ tasks being completed

Methodology of field geological and geophysical investigations used in archaeology.

Work placement	Not applicable

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