

Subject card

Subject name and code	, PG_00179386						
Field of study	Geology						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2027/2028		
Education level	Bachelor's studies		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	5		ECTS credits		1.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Laboratory of Marine Geology -> Department of Chemical Oceanography and Marine Geology -> Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Michalina Dzwoniarek-Konieczna				
	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		0.0		0.0	15
Subject objectives	Aim of the course is to acquaint students with the methods of research on minerals and rocks used in the study of artifacts and their conservation.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[GEOLL3_K03] is willing to exercise caution and criticism in receiving information from scientific literature, the Internet and other media related to natural sciences	is prepared to exercise caution and criticism in accepting information from scientific literature, the Internet and other media relating to environmental and historical sciences	[SK1] oral statement/conversation/discussion
	[GEOLL3_W03] knows and identifies paleontological, mineralogical, petrographic and structural objects using appropriate methods	knows and identifies historical objects made of mineral resources and geological, chemical and physical research methods to their analysis	[SW4] 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 historical objects and connect them with geological and anthropogenic processes influencing their state of preservation	[SU4] test/exam - oral or written
	[GEOLL3_K01] is willing to plan and implement, individually or as a team, the next stages of the entrusted task, take responsibility for its results, effectively cooperate in the team by performing various roles in it	is aware of the need to protect cultural heritage and is ready to plan and carry out research on entrusted historical material, taking responsibility for its results	[SK4] 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	understands the working of basic measurement and analytical techniques used in specialist research on historic materials; plans to research program on historical objects	[SU4] test/exam - oral or written
	[GEOLL3_W02] knows and understands the terminology appropriate in science and natural sciences	knows and understands the basic terms and terminology related to the subject	[SW4] test/exam - oral or written
Subject contents	1. Basic terms related to the subject matter; introduction to the problems of archaeological and conservation research. 2. Review of the main mineral and rock raw materials used in the past: mineralogy, petrography, geochemistry and provenance of raw materials. 3. Use of mineral raw materials in ceramics, pigments and mortars. 4. Environmental and anthropogenic factors impact to the state of preservation of historic buildings and artifacts. 5. Presentation of selected research and measurement methods used in archaeology and conservation; methods of sampling from historical objects and buildings. 6. Presentation of selected methods of conservation of mineral and rock historical objects.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	final test	51.0%	100.0%

Recommended reading	Basic literature	Antonelli F., Lazzarini L. 2015. An updated petrographic and isotopic reference database for white marbles used in antiquity. Rendiconti Lincei volume 26, p. 399413 Bahn P.G., Renfrew C. 2002. Archeologia. Teorie, metody, praktyka. Prószyński i Spółka, Warszawa Barnett J.R. Miller S., Pearce E. 2006. Colour and art: A brief history of pigments. Optics & Laser Technology 38: 445-453 Doehne E., Price C.A. 2010. Stone Conservation. An Overview of Current Research. The Getty Conservation Institute. Los Angeles. Domasłowski W. (ed.) 2011. Zabytki kamienne i metalowe, ich niszczenie i konserwacja profilaktyczna. Wydawnictwo naukowe UMK. Toruń. Herz N., Garrison E.G. 1998. Geological Methods for Archaeology, Oxford. Michalska D., Szczepaniak M. (eds.) 2014. Geosciences in Archaeometry. Methods and case studies. Bogucki Wydawnictwo Naukowe, Poznań Quinn S.P. 2013. Ceramic Petrography: The Interpretation of Archaeological Pottery & Related Artefacts in Thin Section. Archaeopress Archaeology, Oxfordshire. Weiner S., 2010: Microarchaeology. Beyond the Visible Archaeological Record. Cambridge University Press.
	Supplementary literature	Publications from specialist journals, e.g. Archaeometry, Geochronometria, Journal of Archaeological Science, Journal of Conservation Science, Journal of Cultural Heritage, Radiocarbon
	eResources addresses	
	Example issues/ example questions/ tasks being completed	
Work placement	Not applicable	

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