

Subject card

Subject name and code	, PG_00159344						
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		Optional subject group		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		English		
Semester of study	5		ECTS credits		3.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Laboratory of Palaeoenvironmental Research -> Department of Geomorphology and Quaternary Geology -> Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Maurycy Żarczyński				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	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	30		0.0		0.0	30
Subject objectives	Presentation of selected issues and research directions in contemporary physical geography, specifically: past and contemporary global environmental changes forcing factors, mechanisms, processes and future consequences.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[GEOLL3_W03] knows and identifies paleontological, mineralogical, petrographic and structural objects using appropriate methods		Knows the selected palaeontological and mineralogical objects used in palaeogeographical studies.		[SW4] test/exam - oral or written		
	[GEOLL3_U08] is able to write, report and properly illustrate scientific work in Polish and English on the basis of available sources on a selected topic in the field of geological issues		Can illustrate a planetary scale process.		[SU4] test/exam - oral or written		
	[GEOLL3_U02] has the skill of analytical and synthetic way of reasoning leading to correct inference based on the results obtained or the facts presented		Can identify the most substantial contemporary problems of the global environment.		[SU4] test/exam - oral or written		
Subject contents	1. Past global changes: international research programmes and scientific organizations; 2. Ocean scientific drilling: investigating the seafloor through scientific ocean drilling; 3. Geological and cryosphere archives: studying past global climate changes using ice cores; 4. Continental scientific drilling: examining environmental history recorded in terrestrial sediment archives; 5. Human-environment interactions in the past: addressing erosion, landscape evolution, and pollution; 6. Monitoring and Modeling the water cycle: assessing watershed resources and aquifer layers; 7. Addressing Water scarcity and quality: collecting and analyzing hydrological data; 8. Ecology and hydrology: balancing ecohydrological structure with sustainable development; 9. International climate dialogue: considering political, financial, and organizational aspects; 10. Climate Change and Natural/Anthropogenic Ecosystems: observing and forecasting changes and consequences; 11. Extreme climate, weather, and hydrologic events: implementing early warning systems; 12. Management efforts: developing mitigation and adaptation actions for natural and anthropogenic ecosystems.						

Prerequisites and co-requisites	B+ efficiency in English		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Written test	51.0%	100.0%
Recommended reading	Basic literature	- Fischer H., Kull C., Kiefer T., Ice core science, PAGES news, 14(1), 1-44, https://doi.org/10.22498/pages.14.1, 2006 - Intergovernmental Panel on Climate Change, Special Report: Global Warming of 1.5°C (Summary for Policymakers and chapters), www.ipcc.ch, 2018 - Intergovernmental Panel on Climate Change, Special Report: the Ocean and Cryosphere in a Changing Climate (Summary for Policymakers and chapters), www.ipcc.ch, 2019 - Intergovernmental Panel on Climate Change, Special Report: Climate Change and Land (Summary for Policymakers and chapters), www.ipcc.ch, 2019 - International Continental Scientific Drilling Program, ICDP Science Plan 2020-2030, https://www.icdp-online.org/media/icdp-science-plan, 2020 - Mann M.E., Nowa Wojna Klimatyczna - Jak ocalić naszą planetę?, Wydawnictwo Dolnośląskie, 2021 - Popkiewicz M., Kardaś A., Malinowski S., Nauka o klimacie, Wydawnictwo Sonia Draga, 2019 - Koppers A.A.P., Coggon R., ed., Exploring Earth by Scientific Ocean Drilling: 2050 Science Framework, 124 pp., https://doi.org/10.6075/J0W66J9H, 2020	
	Supplementary literature	- Intergovernmental Panel on Climate Change, Sixth Assessment Report (Summary for Policymakers and chapters), www.ipcc.ch, 2021 - Intergovernmental Panel on Climate Change, Special Report: Climate Change and Land (Summary for Policymakers and chapters), www.ipcc.ch, 2019 - Intergovernmental Panel on Climate Change, Sixth Assessment Report (Summary for Policymakers and chapters), www.ipcc.ch, 2021 - Intergovernmental Panel on Climate Change, Special Report: Climate Change and Land (Summary for Policymakers and chapters), www.ipcc.ch, 2019	
		eResources addresses	
Example issues/ example questions/ tasks being completed	1. Introduce and describe the contribution of the main geological process co-responsible for the exit of the Earth from the "Snowball Earth" era; 2. Outline, illustrate and describe the three main factors responsible for climate change in Milanković cycles.		
Work placement	Not applicable		

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