

**Subject card**

<b>Subject name and code</b>	Environmental change reconstructions (Lecture), PG_00196128						
<b>Field of study</b>	Physical geography and geoinformation						
<b>Date of commencement of studies</b>	October 2026	<b>Academic year of realisation of subject</b>			2026/2027		
<b>Education level</b>	Master's studies	<b>Subject group</b>			Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>			at the university		
<b>Year of study</b>	1	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	1	<b>ECTS credits</b>			3.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>			exam		
<b>Conducting unit</b>	Laboratory of Geomorphological Reconstructions -> Department of Geomorphology and Quaternary Geology -> Faculty of Oceanography and Geography -> Rector						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr hab. Piotr Woźniak				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	30.0	0.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	<b>Number of study hours</b>	30		2.0		43.0	75
<b>Subject objectives</b>	<p>1. Presentation of the main methods used in palaeoenvironmental reconstructions.</p> <p>2. Explanation of the mechanisms conditioning long-term environmental changes.</p> <p>3. Presentation of indicator features of selected sedimentary environments.</p> <p>4. Presentation of the role of research on the past of the environment in the context of its current and future changes.</p>						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[GFGMU2_W02] knows and understands to a deepened extent issues in the field of exact sciences enabling the understanding of complex processes and phenomena occurring in the Earth's natural environment, and in their interpretations consistently rely on empirical foundations, using qualitative and quantitative methods	Knows and understands the interdisciplinary approach in Earth and environmental sciences, as well as qualitative and quantitative methods used in environmental reconstructions.	[SW4] test/exam - oral or written
	[GFGMU2_U03] is able to use academic literature in the fields of physical geography and geoinformation in Polish and English, selecting it appropriately for the research objective	Can choose the literature necessary to prepare for the exam.	[SU4] test/exam - oral or written
	[GFGMU2_W08] knows and understands in a deepened extent the most important contemporary problems in the field of contemporary climate change and environmental crises on a regional and global scale, their essence, genesis and possible consequences	Knows and understands the problem of anthropogenic changes in the natural environment on a regional and global scale, their essence, genesis and possible consequences.	[SW4] test/exam - oral or written
	[GFGMU2_K01] is ready to critically assess the knowledge obtained in the field of Earth and environmental sciences, particularly physical geography and geoinformation, its completion and verification through further critical analysis of scientific literature	Can prepare for the exam by critically reading the literature.	[SK4] test/exam - oral or written
	[GFGMU2_U02] is able to precisely and appropriately use terminology in the field of physical geography and geoinformation in oral statements and written works	Can properly apply terminology used in the reconstruction of sedimentary environments.	[SU4] test/exam - oral or written
	[GFGMU2_U05] is able to integrate knowledge from the discipline of Earth and environmental sciences, explaining and interpreting the interrelationships between environmental processes and phenomena in order to solve research problems in physical geography and geoinformation	Is able to integrate knowledge in the field of Earth and environmental sciences, correctly explaining and interpreting the mutual relations between processes and phenomena accompanying environmental changes at different time scales.	[SU4] test/exam - oral or written
	[GFGMU2_W01] knows and understands to a deepened extent the specificity of Earth sciences in the field of physical geography, its internal structure, research subject and main research directions, the methods applied, conceptual apparatus, as well as practical applications of scientific achievements	Knows and understands the interdisciplinary approach in Earth and environmental sciences, as well as qualitative and quantitative methods used in environmental reconstructions.	[SW4] test/exam - oral or written

Subject contents	<ol style="list-style-type: none"> <li>1. Natural environmental archives.</li> <li>2. Methods of sediment and natural processes dating.</li> <li>3. Mechanisms for controlling changes in the environment.</li> <li>4. The use of abiotic indicators in environmental reconstructions.</li> <li>5. The use of biotic indicators in environmental reconstructions.</li> <li>6. Reconstructions of fluvial and fluvio-glacial environments.</li> <li>7. Reconstructions of aeolian and periglacial environments.</li> <li>8. Reconstructions of mass movements and seismic phenomena.</li> <li>9. Reconstructions of the glacial environment.</li> <li>10. Ice cores as a source of information about the past of the environment.</li> <li>11. Oceanic and marine sediments as a source of information about the past of the environment.</li> <li>12. Lake sediments as a source of information about the past of the environment.</li> <li>13. Peat bogs as a source of information about the past of the environment.</li> <li>14. Fossil soils as a source of information about the past of the environment.</li> <li>15. Environmental reconstruction and forecasting future changes.</li> </ol>								
Prerequisites and co-requisites									
Assessment methods and criteria	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Subject passing criteria</th> <th style="text-align: center;">Passing threshold</th> <th style="text-align: center;">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">written exam</td> <td style="text-align: center;">51.0%</td> <td style="text-align: center;">100.0%</td> </tr> </tbody> </table>	Subject passing criteria	Passing threshold	Percentage of the final grade	written exam	51.0%	100.0%		
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written exam	51.0%	100.0%							
Recommended reading	Basic literature	<p>Allen P.A., 2000, Procesy kształtujące powierzchnię Ziemi. PWN, Warszawa.</p> <p>Bennet M.R., Glasser N.F., 2009, Glacial geology. Ice sheets and landforms. John Wiley &amp; Sons, Chichester.</p> <p>Mannion A.M., 2001, Zmiany środowiska Ziemi. PWN, Warszawa.</p> <p>Mycielska-Dowgiałło E., Rutkowski J. (red.), 2007, Badania cech teksturalnych osadów czwartorzędowych. SWPR, Warszawa.</p> <p>Smol J.P., 2008, Pollution of Lakes and Rivers. A Paleoenvironmental Perspective. Blackwell Publishing, Oxford.</p> <p>Weiner J., 2006, Życie i ewolucja biosfery. PWN, Warszawa.</p> <p>Zieliński T., 2014, Sedymentologia. Osady rzek i jezior. UAM, Poznań.</p>							

	Supplementary literature	<p>Mojski J. E., 2005, Ziemia polskie w czwartorzędzie, PIG, Warszawa.</p> <p>Renfrew C., Bahn P., 2002, Archeologia. Teorie, metody, praktyka. Prószyński i S-ka, Warszawa.</p> <p>Stanley S.M., 2005, Historia Ziemi. PWN, Warszawa.</p>
	eResources addresses	
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> <li>1. Link the research material to the method of its dating.</li> <li>2. List biotic indicators used in palaeoenvironmental research.</li> </ol>	
Work placement	Not applicable	

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