University of Gdańsk

Subject card

Subject name and code	Geomorphology and science of soil, PG_00033326						
Field of study	Environmental Protection						
Date of commencement of studies	October 2025		Academic year of realisation of subject	2026/2027			
Education level	Bachelor's studies		Subject group	Obligatory subject group in the field of study Subject group related to scientific research in the field of study			
Mode of study	full-time studies		Mode of delivery	at the university			
Year of study	2		Language of instruction	Polish			
Semester of study	4		ECTS credits	1.0			
Learning profile	academic		Assessment form	credit			
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr Sambor Czerwiński				
	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		2.0		8.0	25
Subject objectives	1. To learn about the main research methods used in geomorphology and soil science. 2. To understand the general laws concerning the genesis and evolution of the forms of relief of the Earth's surface. 3. To know the main soil-forming processes and factors and their influence on the spatial distribution on the globe. 4. To know the determinants and negative transformations of anthropogenic transformation of the pedosphere.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[OŚL3_K06] Knows and appreciates the practical application of the acquired knowledge and skills in solving problems.	Demonstrates a willingness to take individual and social action, including to maintaining ecological balance and protecting the Earth's resources.	[SK4] test/exam - oral or written
	[OŚL3_K05] Identifies the level of her/his knowledge and skills, demonstrates the need to update knowledge about the environment and its protection, demonstrates the need for continuous professional training and personal development.	Demonstrates readiness for individual and social action, including for the preservation of ecological balance and protection of the Earth's resources. Uses theoretical knowledge of geomorphology and soil science to correctly interpret the distribution of crops on Earth.	[SK4] test/exam - oral or written
	[OŚL3_U09] Prepares in Polish/ English a short description of research, observation or problem task carried out during classes using appropriate scientific terminology.	Is able to use soil geomorphological terminology to the extent that he can use the literature on the subject in Polish and/or English.	[SU4] test/exam - oral or written
	[OŚL3_U04] Uses specialist language in the discussion and properly uses the nomenclature in the field of environmental protection and individual disciplines related to it.	Uses scientific language, speaks and discusses topics on geomorphological and soil science issues in Polish and/or a foreign language.	[SU4] test/exam - oral or written
	[OŚL3_U01] Performs tasks under supervision and independently in the field of analysis of the natural environment and the functioning of natural and man-made natural systems.	Can characterize the basic laboratory and field methods of geomorphology and soil science. Formulates basic problems concerning the causes of problems in meeting the nutritional needs of underdeveloped countries. Analyzes the causes and course of basic processes and phenomena occurring in the lithosphere under conditions of anthropopression. Characterizes the different areas of the globe, explaining the reasons for the variation in the conditions of plant cultivation and the associated different types of agricultural economy.	[SU4] test/exam - oral or written
	[OŚL3_W01] Discusses the basic concepts of mathematics, physics, chemistry and biology. Describes physical, chemical and biological phenomena occurring in nature as well as geological, geomorphological and climatic conditions of the functioning of nature.	Knows and classifies techniques to protect soils from degradation. Recognises the relationship of geomorphology and soil science with other scientific disciplines. Defines the basic concepts of geomorphology and soil science. Explains the physical and chemical determinants of the most important soil-forming processes. soil-forming processes. Characterises the basic geomorphological processes and factors and their influence on soil formation. Characterises the importance of geomorphological and palaeopedological studies in reconstructing changes in the natural environment. Characterises the multiplicity of anthropogenic impacts on soils in different climatic zones.	[SW4] test/exam - oral or written

<table>
<tr><td>Subject contents</td><td>1. Characteristics of factors shaping the Earth's surface forms (fluvial, glacial and periglacial forms and processes, aeolian processes and forms, sea shore processes and forms, lake and peat accumulation sediments and forms).2. Human influence on relief and geomorphological processes.3. Threats of geomorphological extreme events.4. Characteristics of soil-forming processes and factors and their influence on soil formation.5. Major types, subtypes and genera of soils of the world, their genesis, distribution, structure, agricultural suitability.6. Protection of the lithosphere, potential threats to the soil environment.7. The role of soil microorganisms.8. Basics of palaeoenvironmental reconstructions.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>test</td><td>51.0%</td><td>100.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>Huggett R. J. 2011, Fundamentals of Geomorphology. Routledge.</td></tr>
<tr><td>Supplementary literature</td><td>Davies T., Korup R., Clague J. (red), 2021. Geomorphology and Natural Hazards: Understanding Landscape Change for Disaster Mitigation, AGU Advanced Textbooks, John Wiley & Sons</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td>Characteristics of the upper, middle and lower course of the riverLateral erosionMajor threats to the functioning of river systemsMain soil componentsElementary soil-forming processes</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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