



Subject card

Subject name and code	Environmental principles of architectural and urban design, PG_00061518						
Field of study	Architecture						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2025/2026		
Education level	first-cycle studies		Subject group		Obligatory subject group in the field of study		
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		English		
Semester of study	3		ECTS credits		1.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department Of Urban Design And Regional Planning -> Faculty Of Architecture -> Wydziały Politechniki Gdańskiej						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Miłosz Marciniak				
	Teachers		dr Miłosz Marciniak				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	10.0	0.0	0.0	0.0	25
	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	25		0.0		5.0	30
Subject objectives	Developing the ability to use knowledge about the natural environment for spatial planning, urban and rural design						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W02] knows and understands the rules of gathering information and their interpretation as a part of project concept preparation; issues related to architecture and urban planning in the field of simple design problems solving		Student is able to assess the conditions and possibilities of the location of various objects		[SW1] Assessment of factual knowledge		
	[K6_W04] knows and understands relations between man and architecture and between architecture and the surrounding environment, and the need to adapt architecture to human needs and scale; problems of physics, technology and functions of buildings to the extent that ensures comfort of use and protection against the effects of weather; methods and means of implementing environmentally responsible sustainable design as well as protection and conservation of the surrounding environment		Student is able to describe the influence of environmental features on the possibility of land use and to define the features of the environment limiting the use of the area. Student is able to identify the limitations and the possibilities of the area (on the basis of the existing characteristics of the environment).		[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects		
	[K6_K03] is ready to take responsibility for architectural and urban values in environmental protection and cultural heritage		Student is able to assess the individual components of the natural environment for economic purposes, for the purposes of urban planning and spatial planning		[SK3] Assessment of ability to organize work		

Subject contents	<p>Lecture issues:1 Spatial and environmental information. Publicly available GIS platforms2 Landscape.3 Basic natural processes - functioning of the natural environment.4 Basic concepts of physical and geographical space.5 Dynamics and evolution of the natural environment.6 The main features of the geological structure of the Earth, the relationship between the bedrock and the topography.7 Assessment of ground and construction conditions.8 Assessment of the relief.9 Hydrological conditions of the area, analysis of inland and underground waters.10 Soil, soil conditions. Properties and natural conditions of the area determining the valuation class of arable soils.11 Vegetation as an important element of the terrain physiognomy.12 Forms of nature protection.13 Natural conditions in the legal systemexercises issues:1. Topographic maps and other thematic maps - sources, scales, contractual signs2. Landfall, inclination of the ground. Land development conditions3 Lines of equal slope, longitudinal profile, assessment of the suitability of the site for transport purposes4. Geology - Approximate usefulness of land for development5. Risk assessment of erosion processes (mass movements)6. Surface waters. Limits of local catchments (catchment area - natural and urbanized).7 Types of forests, their physiognomy and resistance to anthropogenic impact (ecological corridors)8 Assessment of conditions and possibilities of location of various objects9 Exposure and potential length of light by direct sunlight. Designation of sunlit and shaded areas10 Rose of the wind. Direction of cold air flow. Areas potentially exposed to the presence of cool air. Air flow - ventilation of the ground</p> <p>exercises issues:</p> <p>1. Topographic maps and other thematic maps - sources, scales, contractual signs</p> <p>2. Landfall, inclination of the ground. Land development conditions</p> <p>3 Lines of equal slope, longitudinal profile, assessment of the suitability of the site for transport purposes</p> <p>4. Geology - Approximate usefulness of land for development</p> <p>5. Risk assessment of erosion processes (mass movements)</p> <p>6. Surface waters. Limits of local catchments (catchment area - natural and urbanized).</p> <p>7 Types of forests, their physiognomy and resistance to anthropogenic impact (ecological corridors)</p> <p>8 Assessment of conditions and possibilities of location of various objects</p> <p>9 Exposure and potential length of light by direct sunlight. Designation of sunlit and shaded areas</p> <p>10 Rose of the wind. Direction of cold air flow. Areas potentially exposed to the presence of cool air. Air flow - ventilation of the ground</p>		
Prerequisites and co-requisites	Knowledge about the natural environment from the earlier stages of education		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	colloquium on the lecture content, execution of 10 exercises	60.0%	100.0%
Recommended reading	<p>Basic literature</p> <p>Oke T.R., Mills G., Christen A., Voogt J.A, Urban Climates, Cambridge University Press, 2017 (https://aerisfuturo.pl/projekt/urban-climates/)</p> <p>PHYSICAL GEOGRAPHY (An Open Educational Resources Publication by College of the Canyons) authored and compiled by Jeremy Patrich MA (2020)</p>		

	Supplementary literature	<p>Price, David George, Engineering Geology: Principles and Practice, Springer,</p> <p>D. Venkat Reddy, NIT-Karnataka, Engineering Geology, Vikas Publishers,</p> <p>Hollis, G.E., The effects of urbanization on floods of different recurrence intervals: Water Resources Research, v. 11, no. 3</p> <p>Price, David George, Engineering Geology: Principles and Practice, Springer,</p> <p>D. Venkat Reddy, NIT-Karnataka, Engineering Geology, Vikas Publishers,</p> <p>Hollis, G.E., The effects of urbanization on floods of different recurrence intervals: Water Resources Research, v. 11, no. 3</p>
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	<p>Assessment of land suitability for construction and agriculture based on the size of the land decline. The grade line of the road, the impact of the relief on the marking and implementation of a road and a railway line. The load-bearing capacity of the soil, the limit load of the land suitable for development without reservations. The occurrence of mass movements and their impact on buildings. Properties and natural conditions of the area determining the valuation class of arable soils. Assessment of the possibility of flooding in a given area. The impact of changes in the depth of the first groundwater horizon on construction and underground infrastructure. Factors influencing the city's climate. Areas potentially exposed to stagnation of cool air.</p>	
Work placement	Not applicable	

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