University of Gdańsk

Subject card

Subject name and code	Landscape ecology, PG_00191733		
Field of study	Spatial Management		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2027/2028
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	3	ECTS credits	3.0
Learning profile	academic	Assessment form	credit
Conducting unit	Division of Landscape and Environmental Studies -> Institute of Socio-Economic Geography and Spatial Management -> Faculty of Social Sciences -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Barbara Korwel Lejkowska	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	20.0	0.0	0.0	50

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	50	0.0	25.0	75

Subject objectives

The aim of the course is to learn about:

- the principles of shaping and using space in conditions of sustainable development;
- the material-horizontal and vertical structure of the environment
- the processes of matter circulation - their significance for the human economy
- measures and methods of landscape structure analysis
- the functioning and dynamics of natural systems, conditions of habitat diversity and biodiversity

Learning outcomes

Course outcome	Subject outcome	Method of verification
[GPL3_U01] formulates and solves complex and unusual problems of spatial management in accordance with the principles of sustainable development and spatial order	the student should identify, evaluate and solve spatial management problems - including atypical and problematic situations and solutions - applying the principles of sustainable development	[SU2] presentation/project/paper/ report [SU5] implementation of a problem task
[GPL3_K03] is ready to identify and resolve cognitive problems related to the profession in accordance with the latest knowledge in the field of spatial management, including expert opinions	the student should identify situations and problems in spatial management, using professional and expert knowledge and tools of spatial management, spatial planning and environmental protection	[SK4] test/exam - oral or written [SK5] implementation of a problem task
[GPL3_K06] is ready to care for the achievements and traditions of the profession, and comply with the principles of professional ethics by themselves and to demand that from others	Students should be able to maintain the quality and impartiality of their studies - including assessments and opinions and professional ethics	[SK2] presentation/project/paper/ report
[GPL3_U04] makes the correct selection of basic quantitative methods (including field research), uses them in the analysis of spatial diversity of natural, social or economic phenomena and also makes a correct interpretation of the results on the basis of the specificity of selected methods	Students should be able to apply appropriate substantive solutions, using qualitative and quantitative methods - including spatial, environmental and landscape analyses and syntheses, and interpret the results of the work obtained	[SU2] presentation/project/paper/ report [SU5] implementation of a problem task
[GPL3_K01] is ready to make decisions independently and be responsible for the effects of their own actions and those of their team's	The student should be prepared substantively to make decisions independently and to take responsibility for the consequences of his/her own actions and those of his/her team	[SK2] presentation/project/paper/ report
[GPL3_K02] is ready to critically assess knowledge and obtained content with regard to methods and forms of spatial development, sustainable development and spatial order	Students should be able to critically evaluate their knowledge and be able to critically evaluate ways and forms of spatial development	[SK2] presentation/project/paper/ report [SK5] implementation of a problem task

Subject contents

- Landscape ecology as a scientific discipline history of development, links with other sciences
- Concepts and terminology, specific nature of landscape ecology research
- Main features of the natural environment and landscape research conducted within the field of landscape ecology
- Horizontal and vertical structure of the natural environment - changes over time, measures and methods of analysis
- Ecotones as a specific element of landscape structure
- Relationships between components of the natural environment
- Functional structure - links between natural components and landscape units, methods of analysis
- Fundamentals of ecology, conditions for the functioning of ecosystems and research methods
- Functioning of biotic landscape components - biogeographical theories, patch and corridor models in relation to the fundamentals presented in the first year
- Green and blue infrastructure
- Fundamentals of urban ecology
- Landscape physiognomy synthetic approach
- Landscape functioning and principles of spatial management summary/synthesis (shaping ecological living conditions)
- Familiarisation with the method of geocomplexes (determination of elementary landscapes from a topographic map, soil types from a soil-agricultural map) and preparation of a sample landscape map,
- Analysis of the landscape map (landscape contrast, selected indices of abundance, area, relationship),
- Familiarisation with the model of patches - matrix-corridors,
- Attempt at typology of patches and corridors, determination of their functions in the environment and indications for spatial management

Prerequisites and co-requisites

knowledge and skills acquired in the subjects included in the first year programme

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
exam	50.0%	50.0%
total points obtained for projects and tests	51.0%	50.0%

Recommended reading	Basic literature	• Balon J., Maciejowski W., 2012, Geoecology for Landscape Architects, PK Publishing, Kraków • Cieszewska A., 1998, Model of patches and corridors and its application, Warsaw. • Matuszkiewicz J.M., 2009, Forest complexes of Poland, PWN, Warsaw. • Matuszkiewicz W., 2011, Guide to the identification of plant communities in Poland, PWN, Warsaw. • Ostaszewska K., 2002, Landscape geography, PWN, Warsaw. • Pietrzak M., 2020, Fundamentals and Applications of Landscape Ecology, 2nd edition. PWSZ in Leszno, Leszno • Przewoźniak M., Czochański J.T., 2020, Natural Foundations of Spatial Management. A Pro-Ecological Approach. Bogucki Scientific Publishers, Poznań, pp. 416; • Przewoźniak M., 1987, Fundamentals of Comprehensive Physical Geography, University of Gdańsk Press, Gdańsk. • Richling A., 1992, Comprehensive physical geography, PWN, Warsaw. • Richling, Solon, 1998, Landscape Ecology, PWN, Warsaw. • Staszek W., 2005, Functional Structure of a Young Glacial Geosystem on the Example of the Borucinka River Basin. Works and Studies in Geography, University of Warsaw, pp. 79-95. • Staszek W., 2018, Influence of functional environmental processes on selected coastal ecosystems of the Gdańsk seashore, Ecological Questions 29 (2018) • Wiśniewski P., 2015: The anti-erosion function of soil protection forests. Gdańsk University Press, Gdańsk
	Supplementary literature	• Czochański J.T., Wiśniewski P., 2018: River valleys as ecological corridors: structure, function and importance in the conservation of natural resources. Ecological Questions, 29(1), 7787. • Korwel B., Kistowski M., 2004, Landscape structure of young glacial areas in terms of the concept of matrices, patches and corridors a methodological study based on the example of the central part of the Kashubian Lake District, Problems of Landscape Ecology, vol. XIV, pp. 93102. • Korwel-Lejkowska B., 2005, An attempt to assess changes in the landscape structure of the municipality of Pruszcz Gdański in 1985-2000 in the light of natural conditions, Problems of Landscape Ecology, vol. XVII, pp. 131-139. • Krzymowska Kostrowicka A., 1997, Geoecology of Tourism and Recreation, PWN, Warsaw. • Kurek R., 2010, Guide to the design of animal crossings and measures to reduce wildlife mortality on roads. • Pietrzak M., 1998, Landscape syntheses: assumptions, problems, applications, Bogucki Wyd. Naukowe, Poznań. • Richling A. (ed.), 2007, Geographical research of the natural environment, PWN, Warsaw. • Staszek W., 2007, Variability of plant landscapes in wet and marshy habitats as a result of hydrochemical diversity in a young glacial catchment area [in:] K. Ostaszewska, I. Szumacher, S. Kulczyk, E. Malinowska (eds), The importance of landscape research for sustainable development. University of Warsaw Press, Warsaw: 439-450.
	eResources addresses	
Example issues/ example questions/ tasks being completed	making a landscape map mapping of ecological patches and corridors	
Work placement	Not applicable	