University of Gdańsk

Subject card

Subject name and code	Geographical information systems, PG_00198082		
Field of study	Natural Resources Conservation		
Date of commencement of studies	October 2026	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	1	Language of instruction	Polish
Semester of study	1	ECTS credits	1.0
Learning profile	academic	Assessment form	credit
Conducting unit	Department of Plant Taxonomy and Nature Conservation -> Faculty of Biology -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Magdalena Lazarus	
	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

Familiarization with Geographic Information Systems (GIS) and the possibilities of their practical use in the work of a naturalist.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OZPL3_W10] The graduate possesses a comprehensive understanding of current issues in protection of natural resources and related fields	The student presents and describes contemporary problems in biology and disciplines related such as cartography and computer science.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
[OZPL3_W12] The graduate possesses knowledge of statistical methods and IT tools relevant to the field of study.	The student has knowledge of the use of IT tools for introducing, collecting, processing and visualizing nature spatial data.	[SW4] test/exam - oral or written
[OZPL3_K01] The graduate is ready to recognise the limitations in his/her own knowledge and understands the need for continuous learning and development	The student knows the limits of their own knowledge and understands the need for constant learning and development.	[SK1] oral statement/conversation/ discussion
[OZPL3_U07] The graduate is able to draw correct conclusions on the basis of analysis and synthesis of data from various sources	The student analyzes and synthesizes data from various sources (botanical, zoological, habitat properties, distribution of protected areas data) and draws appropriate conclusions on this basis.	[SU1] oral statement/conversation/ discussion

Subject contents

Definition and properties of maps, including digital maps. Geographic coordinate systems and cartographic projections. Methods of preparing maps and presenting natural data. Spatial data models and sources of data acquisition. ArcGIS software modules and their use. Selection of visualization methods. Basic functions of vector and raster data analysis. The use of Landsat satellite images in nature work.

<table>
<tr><td>Prerequisites and co-requisites</td><td colspan="3"></td></tr>
<tr><td>Assessment methods and criteria</td><td colspan="3"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Written test</td><td>51.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td colspan="2">Urbański J. 2008. GIS w badaniach przyrodniczych. Wyd. UG. Gdańsk.</td></tr>
<tr><td>Supplementary literature</td><td colspan="2">Longley P.A., Goodchild M.F., Maguire D.J., Rhind D.W. 2008. GIS Teoria i praktyka. PWN, WarszawaManikowska-Ślepowrońska B., Lazarus M., Żółkoś K., Jakubas D. 2016. Influence of landscape features on the location of grey heron Ardea cinerea colonies in Poland. Comptes Rendus Biologies 339(11-12).Pasławski J. 2010. Wprowadzenie do kartografii i topografii. Wyd. Nowa Era, Warszawa.Urbański J. 1997. Zrozumieć GIS. Analiza informacji przestrzennej. PWN, Warszawa.</td></tr>
<tr><td>eResources addresses</td><td colspan="2"></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="3">1. Give the definition of cartographic projection.

2. What is the CORINE Land Cover project for?</td></tr>
<tr><td>Work placement</td><td colspan="3">Not applicable</td></tr>
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