

**Subject card**

<b>Subject name and code</b>	Advanced GIS, PG_00201361						
<b>Field of study</b>	Spatial Management						
<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>	2	<b>ECTS credits</b>			2.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>			credit		
<b>Conducting unit</b>							
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr Grzegorz Masik				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	0.0	30.0	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		4.0		16.0	50
<b>Subject objectives</b>	Acquire skills in conducting socio-economic and environmental analyses using GIS software and IT tools. Properly present statistical data on thematic and physiogeographic maps.						
<b>Learning outcomes</b>	<b>Course outcome</b>		<b>Subject outcome</b>			<b>Method of verification</b>	
	[GPMU2_W04] lists in-depth methods and tools (quantitative, qualitative, cartographic) of research in spatial management		Has advanced knowledge of cartographic methods and GIS tools used in spatial analyses.			[SW5] implementation of a problem task	
	[GPMU2_U03] chooses and uses appropriate methods (including statistics) and research tools with particular emphasis on information technology and GIS software		Is able to proficiently select appropriate methods and tools to present quantitative and qualitative data in a spatial perspective, in particular is able to create extensive choropleth maps and cartodiagrams.			[SU5] implementation of a problem task	
	[GPMU2_K01] is ready to critically assess the possessed knowledge and received content		Possesses the ability to critically select and apply appropriate methods to analyze the effects of socio-economic and environmental phenomena occurring in space using GIS tools.			[SK5] implementation of a problem task	
<b>Subject contents</b>	Application of GIS methods and tools to present quantitative and qualitative data in a spatial manner and to conduct in-depth socio-economic and environmental analyses.						
<b>Prerequisites and co-requisites</b>	knowledge of the basics of cartographic data presentation						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Number of completed projects	51.0%	100.0%
Recommended reading	Basic literature	<p>Iwańczak B., 2020, QGIS 3.14. Map creation and analysis, Helion Publishing House.</p> <p>Statistical maps. Data studies and presentation, 2019, Central Statistical Office, Warsaw.</p> <p>Szczepanek R., 2017. Spatial information systems with QGIS. PK Publishing House, Kraków.</p> <p>Masik G., 2017. Differences in the standard of living in the Pomeranian Voivodeship (in.): The demographic situation of the Pomeranian Voivodeship as a challenge for social and economic policy / Hryniewicz Józefina, Potrykowska Alina (ed.), vol. 14, Warsaw, Government Population Council, p. 218-239, ISBN 978-83-7027-659-1</p> <p>Medyńska-Gulij B., 2017, Kartografia zasady i zastosowania geowizualizacji, Wydawnictwo Naukowe PWN, Warszawa.</p> <p>Rock A., Malhoski R., 2018, Mapping with ArcGIS Pro, Packt Publishing, Birmingham.</p> <p>Corbin T., 2018, ArcGIS Pro 2. x Cookbook: Create, Manage, and Share Geographic Maps, Data, and Analytical Models Using ArcGIS Pro, (1st ed.), Packt Publishing, Limited, Birmingham.</p> <p>Jażdżewska I., Lechowski Ł., 2018, Wstęp do geoinformacji z ArcGIS, Wydawnictwo Uniwersytetu Łódzkiego, Łódź.</p>	
	Supplementary literature	<p>Ballas, D., Clarke, G., Franklin, R., &amp; Newing, A. (2017). GIS and the Social Sciences. Taylor &amp; Francis</p> <p>Slocum, T. A., McMaster, R. B., Kessler, F. C., &amp; Howard, H. (2022). Thematic Cartography and Geovisualization (4th ed.). Taylor &amp; Francis.</p> <p>Peterson, G. N. (2020). GIS Cartography (3rd ed.). Taylor &amp; Francis.</p> <p>Iwaniak A., Olszewski R., Gotlib D., 2008. GIS. Areas of application. PWN Scientific Publishing House, Warsaw.</p> <p>Kunz M. (ed.), 2007. Geographic Information Systems in practice. Application study. Nicolaus Copernicus University Publishing House, Toruń.</p> <p>Graser A., 2018, QGIS: becoming a gis power user: Master data management, visualization, and spatial analysis techniques in QGIS and become a GIS power user, (1st edition), Packt Publishing, Birmingham.</p> <p>Medyńska-Gulij B., 2021, Kartografia i Geomedia, Wydawnictwo Naukowe PWN, Warszawa.</p>	
	eResources addresses		

Example issues/ example questions/ tasks being completed	Presentation of socio-economic phenomena using cartographic methods, including choropleth maps and cartograms. Analysis of the percentage of the urban population with the most favorable access to their chosen means of transportation. Conducting a spatial analysis of the diversity and structure of land cover.
Work placement	Not applicable

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