GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00066185					
Field of study	Geodesy and Cartography					
Date of commencement of studies	February 2026		Academic year of realisation of subject		2025/2026	
Education level	second-cycle studies		Subject group			
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		3.0	
Learning profile	general academic profile		Assessment form		assessment	
Conducting unit	Department of Geodesy -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology					
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Adam Inglot				
	Teachers					

Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	15.0	0.0	45
	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	45	0.0	0.0	45

Subject objectives	Acquiring by the student the skill to create thematic maps on a selected topic using IT tools, using modernmethods of geo-visualization in selected GIS software.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K7_W05] has a well-established knowledge of analytical methods and surveying techniques necessary for creating and solving a variety of problems in geodesy and cartography	The student knows the basics of developing a geo questionnaire. He knows the latest methods of generalization of spatial database objects. The student knows standard cartographic studies.	[SW2] Assessment of knowledge contained in presentation
	[K7_U06] creates solutions to complex and unstructured problems taking into account the variability of the environment by synthesising information from different sources, using analytical and simulation methods	The student is able to develop a thematic map, an interactive map for entering data through a web portal. The student is able to draw up a choropleth map and a diagrams in the desktop software as well as on map portals.	[SU4] Assessment of ability to use methods and tools

Subject contents	Course content – lecture
	The lecture covers the following issues: Multi-resolution databases, building map portals, cartographiccompilations in the national geoportal, map creation process, minimum drawing size, generalizationoperators, data acquisition using map portals, development of a geo survey.Classes include: developing cartographic visualizations in ArcGIS Pro, publishing data in ArcGIS Online,creating a geo survey on the "Survey 123".

Prerequisites and co-requisites	

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Test	50.0%	50.0%
	Project	50.0%	50.0%

Recommended reading	Basic literature	
		1. P. A. Longley, M. F. Goodchild, D. J. Maguire, D. W. Rhind - GIS.Theory and practice.. Wydawnictwo Naukowe PWN, Warszawa, 20082. J. Urbański - GIS in natural research. Wydawnictwo UniwersytetuGdańskiego, Gdańsk, 20083. J. Adamczyk, K. Będkowski - Digital methods in remote sensing,Wydawnictwo SGGW, Warszawa, 20074. R. J. Wilson Introduction to graph theory, Wydawnictwo NaukowePWN, Warszawa 20125. J. Smith, P. Smith - Environmental modeling an introduction, OxfordUniversity Press, 2007
	Supplementary literature	
		1. P.M. Mather, M. Koch - Computer Processing of Remotely-SensedImages, Wiley, 20042. J. G. Liu, P. J. Mason - Computer Processing of Remotely-SensedImages, Wiley, 20093. J.R. Jensen - Introductory Digital Image Processing, Prentice Hall,20054. P.A. Zandbergen Python Scripting for ArcGIS, Esri Press, Redlands,20135. J. Lawhead Lerning Geospatial Analysis with Python, PacktPublishing, Birmingham, 2013
	eResources addresses	

Example issues/ example questions/ tasks being completed	1. The problem of data harmonization in multi-resolution databases.2. What is WMS and what is its use. 3.Present the operation of the Douglas-Peucker curve simplification operator.4. Present the way the operatorworks by simplifying buildings using the Sester method.
Practical activites within the subject	Not applicable

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