



Subject card

Subject name and code	Geographic information system (GIS), PG_00064987						
Field of study	Systemy informacji przestrzennej (GIS)						
Date of commencement of studies	February 2025		Academic year of realisation of subject		2025/2026		
Education level	second-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	1		Language of instruction		Polish		
Semester of study	2		ECTS credits		3.0		
Learning profile	general academic profile		Assessment form		exam		
Conducting unit	Division of Applied Computer Science -> Institute of Naval Architecture -> Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Aleksander Kniat				
	Teachers		dr inż. Aleksander Kniat				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	30.0	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		8.0		22.0	75
Subject objectives	Presentation of geographic information analysis and synthesis methods and its practical usage.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_W04] demonstrates knowledge encompassing selected issues in the field of advanced detailed knowledge, particularly in the scope of methods, techniques and tools specific to Transport and Logistics		Student understands how to apply tools and methods of GIS system to design a maritime transportation object or system.		[SW3] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym		
	[K7_U01] utilizes acquired methods, tools and mathematical models for analysis and evaluation of transport systems and processes		Student understands how to perform a spatial analysis using GIS system concerning exploitation of maritime transportation objects or systems.		[SU1] Ocena realizacji zadania		
	[K7_W03] demonstrates structured and theory supported knowledge encompassing key issues in the field of Transport and Logistics, enabling developement and synthesis of transport systems and processes		Student identifies where it is possible to apply GIS tools for maritime transportation.		[SW2] Ocena wiedzy zawartej w prezentacji		
Subject contents	Course content – lecture Definition and applications of Geographic Information Systems (GIS). Data in GIS system: spatial data and attributes. Storing and using data, data sources. Vector vs. raster objects. Coordinate's systems. Standard data formats. Vizualization: maps, layers, symbols, labels. Data classification. Data analysis and synthesis, processing data from different sources, marcos and programming langauges. Graphs and algorithms in spatial analysis (object location, shortest path) Spatial data analysis examples in QGIS.						

Prerequisites and co-requisites	Basic knowledge about operating system and file system usage.		
	Basic knowledge about programming.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	project	60.0%	100.0%
Recommended reading	Basic literature	Davis D. GIS dla każdego 2009 Gaździcki J. Systemy Informacji przestrzennej 1990 Kadaj R. "Polskie układy współrzędnych w geodezji" 2000	
	Supplementary literature	Litwin L., Myrda G., Systemy Informacji Geograficznej. Zarządzanie danymi przestrzennymi w GIS, SIP, SIT, LIS. 2005	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Practical activities within the subject	Not applicable		

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