



Subject card

Subject name and code	, PG_00059059							
Field of study	Environmental Engineering							
Date of commencement of studies	October 2024	Academic year of realisation of subject		2025/2026				
Education level	first-cycle 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	Part-time studies		Mode of delivery		at the university			
Year of study	2	Language of instruction		Polish				
Semester of study	4	ECTS credits		4.0				
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 Teachers		dr inż. Adam Inglot					
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM	
	Number of study hours	15.0	10.0	0.0	0.0	0.0	25	
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	25		6.0		70.0	101	
Subject objectives	Understanding the origins, evolution and development forecasts for GIS and GIS functions in decision-making, as well as the importance of standardization and sharing of data in the GIS.							
Learning outcomes	Course outcome		Subject outcome			Method of verification		
	[K6_W15] knows the rules of descriptive geometry and technical drawing regarding the recording and reading of architectural drawings, construction and surveying drawings, as well as their preparation with the use of CAD		Students can use the data exchange standards, understand and apply the concept of representation topology mapping.			[SW3] Assessment of knowledge contained in written work and projects		
	[K6_W16] has basic knowledge of geodesy in the range of applied measurement equipment and techniques, geodetic information systems and documentation necessary in the preparation process, investment implementation		The student understands the impact of the curvature of the Earth's surface for mapping of spatial phenomena.			[SW3] Assessment of knowledge contained in written work and projects		
[K6_U05] can apply in engineering practice the basic geodetic instruments and instruments, make measurement sketches and read information from the map and surveying documents		Students will be able to read information from topographic maps and the results of GIS analysis.			[SU4] Assessment of ability to use methods and tools			

Subject contents	<p>Course content – lecture</p> <p>The lecture covers the topics : genesis, evolution and forecast of the development of GIS as a definition and conceptual scope against the background of other information systems. GIS technologies in the decision-making process. Modeling, the concept of model. Data models: hierarchical, network, relational, object-oriented, object-relational. In the context of SIP. Data exchange (problem description, descriptive data exchange, spatial data exchange popular languages, formats and standards: XML, SGML, GML,DXF and their derivatives) in the context of SIP. Information on the relational data model extended by the structured query language SQL, along with its practical use, query optimization and construction of dedicated data structures. Basic problems and errors occurring during the process of vector model data acquisition.Exercises include: familiarization of students with GIS software, performance of basic spatial analysis and database queries. Execution of an assignment with analysis of zones permissible for the construction of wind farms and analysis of the possibility of obtaining solar energy.</p>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	raport	50.0%	50.0%
	Test	50.0%	50.0%
Recommended reading	<p>Basic literature</p> <p>1. DavidE.Davis Gis dla ka�dego</p> <p>2. Jerzy Ga�dzicki Systemy Informacji przestrzennej</p> <p>3. P.Longley, M.Goodchild, D.Maguire, D.Rhind GIS Teoria i praktyka</p> <p>4. Laska, M., Systemy informacji przestrzennej</p> <p>5. Litwin, L., Myrda, G., Systemy Informacji Geograficznej. Zar�adzanie danymi przestrzennymi w GIS, SIP, SIT, LIS.</p> <p>6. Urba�ski, J. Zrozumiecz GIS. Analiza informacji przestrzennej</p> <p>7. J.Pomyka�a, J.Pomyka�a Systemy informacyjne</p> <p>8. M.Kraak,F.Ormeling Kartografia wizualizacja danych przestrzennych</p> <p>9. A.Magnuszewski GIS w geografii fizycznej</p> <p>10. Gotlib D., Iwaniak A., Olszewski R.: GIS. Obszary zastosowa�. Wyd. Naukowe PWN. Warszawa. 2007</p> <p>11. Felcenloben D. Geoinformacja. Wprowadzenie do systemów organizacji danych i wiedzy. Gall 2020</p>		
	Supplementary literature	1. Paul DuBois MySQL	
	eResources addresses		
Example issues/ example questions/ tasks being completed	<p>1. Replace the components and functions of GIS</p> <p>2. Introduce the impact of the curvature of the Earth on engineering calculations.</p> <p>3. Describe principles of topology collection</p> <p>4. Characterize the importance of data exchange standards for engineering work</p> <p>5. Replace and present examples of cartographic representation and coordinate systems in force in Poland and in Europe generally.</p>		
Practical activites within the subject	Not applicable		

Document generated electronically. Does not require a seal or signature.