



Subject card

Subject name and code	Systems of Geographical Information in Electrical Power Engineering, PG_00069035						
Field of study	Electrical Engineering						
Date of commencement of studies	February 2026		Academic year of realisation of subject		2026/2027		
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	2		ECTS credits		1.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Electrical Power Engineering -> Faculty of Electrical and Control Engineering -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Andrzej Augusiak				
	Teachers		dr inż. Andrzej Augusiak				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	5.0	0.0	0.0	10.0	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	Acquisition of knowledge and skills in the methods and tools applied in Geographic Information Systems (GIS), in particular with reference to the power engineering sector						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_U11] is able to analyse the variability of electricity loads, calculate power and energy losses, can carry out cost accounting		develops a GIS project concerning a wind farm, using publicly available spatial data, acquired knowledge, and the methods and tools learned within the course		[SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information		
	[K7_W08] has an extended knowledge of power supply systems power supply and control systems including the use of computer networks and design of these systems in industrial facilities industrial facilities		is familiar with both technical and non-technical conditions of designing power supply systems		[SW3] Assessment of knowledge contained in written work and projects		
	[K7_W03] has an extended and deepened knowledge of the field related to electrical power systems and electrical equipment		understands the specifics of designing power supply systems related to renewable energy sources (RES).		[SW3] Assessment of knowledge contained in written work and projects		
Subject contents	Course content – lecture Map as a tool for spatial information management, the application of GIS systems including in the power industry, coordinates and cartographic projections in the practice of design engineers, the use of maps in the design process in accordance with the provisions of construction law in Poland						
	Course content – project Practical implementation of a simple GIS project using QGIS software (open source) using the example of a wind farm and associated power grids and substations, learning and implementing typical GIS design tasks encountered in the power industry, utilizing public spatial data useful in a designer's work (Geoportal, BDOT10K, WMS servers)						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Rating of final project		50.0%		100.0%		

Recommended reading	Basic literature	1. Szczepanek Robert: Systemy informacji przestrzennej z QGIS część I i II, podręcznik akademicki. Wydawnictwo PK 2017 https://repozytorium.biblos.pk.edu.pl/resources/25448 2. Geoinformacja zmienia nasz świat. Główny Urząd Geodezji i Kartografii 2018 http://www.gugik.gov.pl/_data/assets/pdf_file/0003/93234/Geoinformacja-zmienia-nasz-swiat.PDF 3. Iwańczak Bartłomiej: QGIS. Tworzenie i analiza map (ebook). Helion 2020 https://helion.pl/ksiazki/qgis-tworzenie-i-analiza-map-bartlomiej-iwanczak.qgista.htm
	Supplementary literature	QGIS system documentation http://www.qgis.org/pl/docs/index.html
	eResources addresses	
Example issues/ example questions/ tasks being completed	Concepts and definitions related to GIS The hardware and software of GIS systems Other technical systems working with GIS Spatial Analysis in GIS - be able to give an example Differences between raster and vector-layers in GIS Examples of graphical attributes and database layers vector Inquiries (query) SQL - be able to give an example Types of GIS software Examples of GIS software for the power sector.	
Practical activities within the subject	Not applicable	

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