GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Systems of Geographical Information in Electrical Power Engineering, PG_00069035		
Field of study	SYSTEMY INFORMACJI GEOGRAFICZNEJ W ELEKTROENERGETYCE		
Date of commencement of studies	February 2025	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	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 -> Wydziały Politechniki Gdańskiej		
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

eNauczanie source addresses:
Moodle ID: 907 SYSTEMY INFORMACJI GEOGRAFICZNEJ W ELEKTROENERGETYCE [ET][2025/26]
https://enauczanie.pg.edu.pl/2025/course/view.php?id=907

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_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] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym
[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] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym
[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	[SU2] Ocena umiejętności analizy informacji [SU3] Ocena umiejętności wykorzystania wiedzy uzyskanej w ramach przedmiotu [SU4] Ocena umiejętności korzystania z metod i narzędzi [SU5] Ocena umiejętności zaprezentowania wyników realizacji zadania

Subject contents

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

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

<table>
<tr><td>Assessment methods and criteria</td><td colspan="2"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Rating of final project</td><td>50.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>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</td></tr>
<tr><td>Supplementary literature</td><td>QGIS system documentation http://www.qgis.org/pl/docs/index.html</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2">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.</td></tr>
<tr><td>Practical activites within the subject</td><td colspan="2">Not applicable</td></tr>
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