



Subject card

Subject name and code	Geographical Information Systems GIS (WEiA), PG_00042093						
Field of study	Power Engineering, Power Engineering, Power Engineering, Power Engineering, Power Engineering						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2022/2023		
Education level	first-cycle studies	Subject group					
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	3	Language of instruction			Polish		
Semester of study	6	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Electrical Power Engineering -> Faculty of Electrical and Control Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Andrzej Augusiak				
	Teachers		dr inż. Andrzej Augusiak				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	15.0	30
	E-learning hours included: 0.0						
Address on the e-learning platform: http://							
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	30		5.0		65.0	100
Subject objectives	Learning the methods and tools used in geographical information systems especially in energy companies.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_U01		Student knows and is able to use internet portals publishing information on utilities and cadastral data (geoportal.gov.pl). He/she can acquire and integrate information about energy devices from various sources. He/she understands the importance and knows how to use technical data sheets, including those relating to wind turbines and power cables		[SU2] Assessment of ability to analyse information		
	K6_W05		Student is able to make a simple GIS project, using the QGIS software, regarding the location of a wind farm. As part of the project, student is able to correctly locate wind turbines, power lines and power stations. He/she can complete the project with technical data of power objects and display them on the map. He/she can perform simple spatial analyzes, such as the determination of the minimum required distances of power objects from one another or the determination of voltage drops on power lines.		[SW3] Assessment of knowledge contained in written work and projects		
	K6_U05		Student is able to use the knowledge in the field of electrical engineering, necessary for the correct mapping of energy objects in the GIS project. He/she can apply the formulas for calculating the flow of electrical currents and voltage drops in power grids.		[SU3] Assessment of ability to use knowledge gained from the subject		

Subject contents	GIS - definitions and components, raster and vector maps, objects on maps - graphical and data attributes, methods of storing data in GIS, database systems in GIS, methods of data presentation in GIS, constructing SQL queries and thematic maps, space analyses in GIS, specifics of GIS application in energy engineering companies.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Project evaluation	50.0%	100.0%
Recommended reading	Basic literature	1. GIS For Electric Utilities. https://www.giscloud.com/blog/gis-for-electric-utilities 2. GIS Solutions for Power Generation and Transmission Services. https://www.esri.com/library/brochures/pdfs/gis-sols-for-power-generation.pdf	
	Supplementary literature	1. QGIS User guide. https://docs.qgis.org/3.4/en/docs/user_manual 2. QGIS Training manual. https://docs.qgis.org/3.4/en/docs/training_manual/	
	eResources addresses	Adresy na platformie eNauczanie:	
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 vectorlayers 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		
Work placement	Not applicable		