



Subject card

Subject name and code	Geographin Information System (GIS), PG_00042189						
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		2023/2024		
Education level	first-cycle studies		Subject group		Optional subject group Subject group related to scientific research in the field of study		
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	4		Language of instruction		Polish		
Semester of study	7		ECTS credits		3.0		
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	15.0	0.0	0.0	0.0	30
	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	30		3.0		42.0	75
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_W06		The student is able to correctly specify the components of GIS systems and discuss their use in energy companies.		[SW1] Assessment of factual knowledge		
	K6_U03		The student is able to make a simple project in the field of GIS geographic information systems. During the implementation of a GIS project, the student is able to use the methods and tools used in GIS systems. When creating elements of a GIS project, the student is able to apply technical knowledge from other education modules.		[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools		
Subject contents	LECTURE The map - history and its role in socio-economic development of the mankind, analog and digital maps - similarities and differences, 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. CLASSES Constructing raster and vector maps, registering raster maps in selected projection, constructing objects on vector maps and changing their graphical attributes, linking data attributes of map objects with external database system, organization of data storage and access, construction of simple SQL queries in GIS, construction of thematic maps and presentation of space analyses results in GIS.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	GIS project of a selected energy facility		50.0%		100.0%		

Recommended reading	Basic literature	<ol style="list-style-type: none"> 1. Iwańczak B.: QGIS 3.14. Tworzenie i analiza map. Wydawnictwo Helion 2020 2. Bielecka E.: Systemy Informacji Geograficznej - teoria i zastosowania. Wydawnictwo PJWSTK, Warszawa 2006. 3. Myrda G., Litwin L.: Systemy Informacji Geograficznej. Zarządzanie danymi przestrzennymi w GIS, SIP, SIT, LIS. wydawnictwo Helion, Gliwice 2005.
	Supplementary literature	QGIS software documentation. http://www.qgis.org/pl/docs/index.html
	eResources addresses	Adresy na platformie eNauczanie: Systemy informacji geograficznej GIS [2023/24] - Moodle ID: 33737 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=33737
Example issues/ example questions/ tasks being completed	<p>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</p>	
Work placement	Not applicable	