GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Geospatial Data Processing Technologies, PG_00054226		
Field of study	Space and Satellite Technologies, Space and Satellite Technologies		
Date of commencement of studies	February 2023	Academic year of realisation of subject	2022/2023
Education level	second-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	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	1	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Department of Geoinformatics -> Faculty of Electronics, Telecommunications and Informatics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Zbigniew Łubniewski	
	Teachers	dr inż. Emilia Lubecka dr hab. inż. Zbigniew Łubniewski	

Lesson types and methods of instruction							
	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	30.0	0.0	0.0	45
	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	45	8.0	22.0	75

Subject objectives	Learning by students on knowledge and practical skills on technologies for spatial data acquisition, representation and processing

Learning outcomes

Course outcome	Subject outcome	Method of verification
K7_U12	Student is able to use various IT solutions, including software development by one-self, for processing and analysis of geospatial data.	[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 [SU1] Assessment of task fulfilment
K7_W12	Student has the knowledge on acquisition, representation, processing, analysis, presentation and sharing the geospatial data, especially satellite imagery.	[SW1] Assessment of factual knowledge
K7_W07	Student has the knowledge on building and maintenance of geopraphical information systems.	[SW1] Assessment of factual knowledge

Subject contents	Introduction to GIS, definitions, basic functionality, data types and sources, popular GIS software (Quantum GIS, GRASS, ArcGIS, ER Mapper, other), standards for spatial data representation: shapefile, GML, KML, WMS, WFS, WCS, CSW, satellite Earth observation data: Earth observating satellites (series, programs), data formats, processing methods, laser 3D scanning data and processing methods, review of open technologies for spatial data processing (GeoTools, Geoserver, OpenLayers, GeoEXT, Nominatim, Routino, Google Maps API, Cesium), raster and vector databases, SQL spatial extensions, vector data processing in PostGIS
Prerequisites and co-requisites	No requirements

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Written exam	50.0%	30.0%
	Midterm colloquium	50.0%	20.0%
	Practical exercise	50.0%	50.0%
Recommended reading	Basic literature	1. Longley P., Goodchild M., Maguire D., Rhind D. "Geographic Information Systems and Science", John Wiley & Sons Ltd., West Sussex 2005 2. Richards J. "Remote Sensing Digital Image Analysis", Springer-Vergal Berlin Heidelberg 1986 and 1993	
	Supplementary literature	No requirements	
	eResources addresses	Adresy na platformie eNauczanie: Technologie przetwarzania danych przestrzennych (TKIS) - 2023 - Moodle ID: 29849 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=29849	
Example issues/ example questions/ tasks being completed	Not provided.		
Work placement	Not applicable		