



Subject card

Subject name and code	Practical applications of photogrammetry and remote sensing (group project), PG_00045754						
Field of study	Geodesy and Cartography						
Date of commencement of studies	February 2024	Academic year of realisation of subject			2024/2025		
Education level	second-cycle studies	Subject group					
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			Polish		
Semester of study	3	ECTS credits			7.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Geodesy -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Paweł Tysiąc					
	Teachers	mgr inż. Małgorzata Andrzejewska dr inż. Paweł Tysiąc					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	5.0	0.0	0.0	50.0	0.0	55
	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	55		30.0		90.0	175
Subject objectives	Apply knowledge and acquired skills in photogrammetry and remote sensing to solve a practical problem within a team project						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K7_U03] can make the interpretation of aerial and satellite photos and develop products based on remote sensing data	Possesses analytical skills. Can analyse and interpret source data acquired from aerial and satellite ceiling and processed remote sensing data. Can analyse multi-temporal studies in the form of thematic maps, index maps for selected parameters (vegetation, soil, temperature, etc.) and extract and interpret information in the context of a given problem.	[SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment
	[K7_U16] can lead the team work	Has leadership skills, can plan work stages, assign tasks	[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject [SU5] Assessment of ability to present the results of task
	[K7_W01] has the knowledge of basic aerial and satellite photogrammetry and extensive knowledge of the application of photogrammetry, including knowledge of the usage of photogrammetric methods and technologies of data acquisition for the construction of topographic and thematic databases, has the knowledge of numerical terrain models (NMT) and numerical models of land cover (NMPT), as well as building models; knows and is able to apply in practice photogrammetric techniques and technologies, and in particular knows the principles of image mapping, vector maps and altitudinal models, has knowledge of existing sensors and their calibration, terratriangulation of models and 3D visualization	Knows and understands the principles involved in the acquisition, processing and analysis of remote sensing data	[SW1] Assessment of factual knowledge
	[K7_U01] can use in the practice photogrammetric techniques and technologies, and in particular creates graphic and vector maps, elevation models and knows how to perform photogrammetric engineering measurements	Has the ability to select and apply appropriate ways to solve selected computational and design problems in photogrammetry and remote sensing. Is able to prepare multi-temporal studies in the form of thematic maps (land cover/land use, changes in selected environmental factors), indicator maps for selected parameters (vegetation, soil, temperature, etc.) and to extract and analyse information on the basis of the prepared products.	[SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information
Subject contents	<ol style="list-style-type: none"> Literature review to select and apply appropriate approaches to solve selected computational and design problems in photogrammetry and remote sensing. Comparison of remote sensing data processing methods and attempt to assess their suitability for specific tasks aimed at solving a research/technological problem. Preparation of photogrammetric and remote sensing products in the form of thematic maps using methods and techniques selected on the basis of current literature data. Spatial-temporal analyses and interpretation of source and processed remote sensing data acquired from airborne and satellite imagery. Extraction of information and interpretation of analysis results from multispectral and multi-temporal remote sensing products. 		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Final Presentation	60.0%	50.0%
	Stage 1 report	60.0%	50.0%

Recommended reading	Basic literature	<p>Adamczyk J., Będkowski K.: Digital methods in remote sensing. SGGW Publishing House. Warszawa 2005.</p> <p>Kurczyński Z.: Aerial and Satellite Imaging of the Earth; Publishing House of the Warsaw University of Technology, Warsaw 2006.</p> <p>Sanecki J. (ed): Remote sensing: data acquisition. WNT, 2006</p> <p>Jensen J. R.: Remote Sensing of the Environment. An Earth Resource Perspective. Prentice Hall, 2000. Lillesand T.M., Kiefer R.W.: Remote Sensing and Image Interpretation. John Wiley & Sons, 2004</p> <p>Mularz S.: Basics of remote sensing. Introduction to GIS. PK Publishing House, 2004.</p> <p>Pirowski T.: Ranking of methods of integration of remote sensing images of different resolution - evaluation of photo-interpretation values of data integration LANDSAT TM and IRS-PAN, Archive of Photogrammetry, Cartography and Remote Sensing; 2010</p>
	Supplementary literature	A continuously updated list of the latest photogrammetry and remote sensing articles
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> 1. Genesis of the topic setting 2. Structure of the team working on the topic 3. Methods used to solve the problem set 	
Work placement	Not applicable	

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