University of Gdańsk

Subject card

Subject name and code	Remote sensing and photogrammetry, PG_00131495						
Field of study	Marine Hydrography						
Date of commencement of studies	October 2024		Academic year of realisation of subject	2025/2026			
Education level	Bachelor's studies		Subject group	Obligatory subject group in the field of study Subject group related to practical vocational preparation			
Mode of study	full-time studies		Mode of delivery	at the university			
Year of study	2		Language of instruction	Polish			
Semester of study	4		ECTS credits	1.0			
Learning profile	practical		Assessment form	credit			
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Krzysztof Naus				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	15.0	0.0	0.0	0.0	15
	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	15		1.0	13.0	29	
Subject objectives	1. Discussion of the Capabilities and Limitations of Using Photogrammetric Data, Multispectral and Hyperspectral Images, and LiDAR Data (Topographic and Bathymetric) in Hydrography, Acquired Remotely via Satellite, Aerial, and Unmanned Aerial Systems. 2. Introducing Students to Photogrammetry Methods, Satellite Data Correction, and LiDAR Data Processing. 3. Developing Skills in Creating Bathymetric Maps and Extracting Shorelines Based on Satellite Data and Photogrammetric Data.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[HML3-U11] use navigation devices, means of technical observation and communication as well as measuring instruments, as well as apply in practice various techniques of measurement and observation in the field of professional activity related to the field of study	Skills: - Use measurement instruments in the field of remote sensing and apply various measurement techniques in professional activities related to the field of study.	[SU8] observation of student's independent or team work
[HML3-K01] correctly identify and resolve professional dilemmas, especially in the aspects of security and entrusted property	Is Prepared to: - Correctly identify and resolve dilemmas related to professional practice, especially in aspects of safety and entrusted property.	[SK8] observation of student's independent or team work
[HML3-W08] principles of operation and use of measuring instruments used in professional activities related to the field of study, including principles for their calibration and accuracy assessment	Knowledge: - Principles of operation and utilization of measurement instruments used in professional activities related to the field of study, including principles of their calibration and accuracy assessment.	[SW3] text preparation/written work
[HML3-U07] effectively use information and communication techniques, including utility programs to solve professional problems	Skills: - Effectively use information and communication technologies, including software applications, to solve professional problems.	[SU8] observation of student's independent or team work
[HML3-U14] use the applicable terminology in presenting and discussing problems related to the field of study	Skills: - Use current terminology in presenting and discussing problems related to the field of study.	[SU8] observation of student's independent or team work
[HML3-K02] correctly determine the priorities in professional work for the implementation of a task specified by himself/ herself or others	Is Prepared to: - Correctly determine priorities in professional work to achieve tasks set by oneself or others.	[SK8] observation of student's independent or team work
[HML3-W05] map construction and its symbolism	Knowledge: - Map construction and its symbolism.	[SW3] text preparation/written work

Subject contents

Exercises: Preparation and execution of a high-precision photogrammetric flight over coastal areas. Processing of the measurement session obtained from the completed photogrammetric mission using aerial photogrammetry processing software. LiDAR.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Report	51.0%	100.0%

Recommended reading

Basic literature	1. KORCZYŃSKI Z.: Fundamentals of Photogrammetry. Publishing House of the Warsaw University of Technology, 2003. 2. KURCZYŃSKI Z.: Aerial and Satellite Imaging of the Earth. Volumes I and II. Publishing House of the Warsaw University of Technology, Warsaw 2006.
Supplementary literature	1. ADAMCZYK J., BĘDKOWSKI K.: Digital Methods in Remote Sensing. SGGW Publishing House, Warsaw 2007.
eResources addresses	

Example issues/ example questions/ tasks being completed

1. Overview of Remote Sensing Technologies in Hydrography.
2. Principles and Applications of Photogrammetry in Hydrography.

Work placement

Not applicable

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