GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	UAV project, PG_00053259		
Field of study	Geodesy and Cartography		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2025/2026
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	3	Language of instruction	Polish
Semester of study	6	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Geodesy -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Paweł Burdziakowski	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	15.0	0.0	15.0	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	5.0	40.0	75

Subject objectives

The aim of the course is to teach practical implementation of measurement tasks in the field of photogrammetry with UAVs.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_K01] can think and act in a creative and enterprising way; is ready to define priorities for the implementation of an individual or group task; understands the need for continuous education and professional responsibility for his own and his teamt activities, and being ready to assess their own limitations, knows when to ask experts	Can identify the essential elements of photogrammetric data acquisition and correctly perform the task during field work with UAVs.	[SK5] Assessment of ability to solve problems that arise in practice
[K6_U14] can apply the necessary skills to conduct independent work in the field of topographic surveys along with the elaborating of results, geodetic investment service, surveying and inventory measurement, photogrammetry and remote sensing, and making the maps and elaborations for legal purposes including delimitation and subdivision of real estate	Can perform basic photogrammetric design	[SU4] Assessment of ability to use methods and tools
[K6_U08] can use modern measurement technologies to solve common tasks in 3D modeling	Can plan and execute a UAV measurement flight in AUTO mode	[SU4] Assessment of ability to use methods and tools
[K6_K02] is ready to solve problems related to the profession of geodesy and cartography engineer and to assess risks and effects of the performed activity	Can analyse the problem of performing BSP measurements and assess the risk of performing an aviation operation.	[SK3] Assessment of ability to organize work

<table>
<tr><td>Subject contents</td><td>Course content – exercises
Practical exercises according to the UAV flight programme on a simulator

Performing UAV field measurements according to the prepared documentation

Registered UAV pilot profile on the website drony.ulc.gov.pl

Completed course and examination for A1 and A3 licences

Valid A1 and A3 licences

Course content – project
Execution of a photogrammetric project in the assigned software

Analysis of the selected task and preparation of measurement assumptions

Technical analysis of the selected problem</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Project</td><td>70.0%</td><td>40.0%</td></tr>
<tr><td>Docks</td><td>70.0%</td><td>40.0%</td></tr>
<tr><td>Analysys</td><td>70.0%</td><td>20.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>• https://eurodron.com.pl/dronowskaz
• drony.ulc.gov.pl
• http://edziennik.ulc.gov.pl/legalact/2021/35/
• Drony Wiktor Wyszywacz
• Opracowania fotogrametryczne z niskiego pułapu / Michał Kędzierski (red. nauk.), Anna Fryśkowska, Damian Wierzbicki.</td></tr>
<tr><td>Supplementary literature</td><td>Rozporządzenie Komisji (UE) 2019/945 z dnia 12 marca 2019 r. w sprawie bezzałogowych systemów powietrznych oraz operatorów bezzałogowych systemów powietrznych z państw trzecich

Rozporządzenie Wykonawcze Komisji (UE) 2019/947 z dnia 24 maja 2019 r. w sprawie przepisów i procedur dotyczących eksploatacji bezzałogowych statków powietrznych.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>Perform practical tasks according to the BSP training programme on a simulator.

Perform a photogrammetric project.

Prepare preparatory documentation.

Develop a technical analysis and present it.</td></tr>
<tr><td>Practical activites within the subject</td><td>Field exercises</td></tr>
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