



## Subject card

Subject name and code	UAV project, PG_00053259						
Field of study	Geodesy and Cartography						
Date of commencement of studies	October 2020		Academic year of realisation of subject		2022/2023		
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						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Paweł Burdziakowski				
	Teachers		dr inż. Paweł Burdziakowski				
Lesson types and methods of instruction	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 operation and piloting of measurement BSPs, including the performance of measurement missions.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[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		Knows how to analyze the problem of performing a BSP measurement and how to estimate the risk of performing a flight operation		[SK5] Assessment of ability to solve problems that arise in practice		
	[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 team activities, and being ready to assess their own limitations, knows when to ask experts		Be able to identify and correctly perform a task during fieldwork with an UAV		[SK5] Assessment of ability to solve problems that arise in practice		
	[K6_U08] can use modern measurement technologies to solve common tasks in 3D modeling		Be able to identify any UAV and fly it		[SU4] Assessment of ability to use methods and tools		
	[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		Be able to perform basic UAV piloting tasks in ATTI mode		[SU4] Assessment of ability to use methods and tools		

Subject contents	<ul style="list-style-type: none"><li>Practical exercises according to the BSP flight program.</li><li>Performing field measurements of the BSP</li></ul>		
Prerequisites and co-requisites	Registered BSP pilot profile on the website <a href="https://drony.ulc.gov.pl">drony.ulc.gov.pl</a> Completed course and examination for A1 and A3 ratingsValid A1 and A3 ratings		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Flight practice simulator	80.0%	30.0%
	Flight practice UAV	80.0%	50.0%
	Field work	50.0%	20.0%
Recommended reading	Basic literature	<ul style="list-style-type: none"><li><a href="https://eurodron.com.pl/dronowskaz">https://eurodron.com.pl/dronowskaz</a></li><li><a href="https://drony.ulc.gov.pl">drony.ulc.gov.pl</a></li><li><a href="http://edziennik.ulc.gov.pl/legalact/2021/35/">http://edziennik.ulc.gov.pl/legalact/2021/35/</a></li><li>Drony Wiktor Wyszywacz</li><li>Opracowania fotogrametryczne z niskiego pułapu / Michał Kędzierski (red. nauk.), Anna Fryškowska, Damian Wierzbicki.</li></ul>	
	Supplementary literature	<ul style="list-style-type: none"><li><a href="https://eurodron.com.pl/dronowskaz">https://eurodron.com.pl/dronowskaz</a></li><li><a href="https://drony.ulc.gov.pl">drony.ulc.gov.pl</a></li><li><a href="http://edziennik.ulc.gov.pl/legalact/2021/35/">http://edziennik.ulc.gov.pl/legalact/2021/35/</a></li><li>Drony Wiktor Wyszywacz</li><li>Opracowania fotogrametryczne z niskiego pułapu / Michał Kędzierski (red. nauk.), Anna Fryškowska, Damian Wierzbicki.</li></ul>	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	Perform practical tasks according to the BSP training programPerform measurement of the UAV type DJI		
Work placement	Field exercises		