



## Subject card

Subject name and code	Law and safety of flights, PG_00053256						
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		
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	3	Language of instruction			Polish		
Semester of study	5	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Transportation Engineering -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Marek Pszczoła					
	Teachers	dr hab. inż. Marek Pszczoła dr inż. Tadeusz Widerski dr inż. Karol Daliga dr inż. Karolina Makowska-Jarosik					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	15.0	0.0	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	4.0		51.0		100
Subject objectives	The purpose of the course is to provide students the knowledge of the legal basis of flights performed with unmanned aerial vehicles.						
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	The student is able to analyze the risk associated with the use of unmanned aerial vehicles in geodetic measurements.			[SK5] Assessment of ability to solve problems that arise in practice [SK2] Assessment of progress of work		
	[K6_W13] has basic knowledge and understands concepts in the field of non-technical conditions of engineering activities as well as occupational safety and health regulations in the profession of geodesy engineer	The student possess the knowledge and is able to apply the principles of safe surveying with the use of unmanned aerial vehicles.			[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects		
	[K6_W06] has a well-grounded knowledge and understands geodesy concepts including the main methods of obtaining data about space together with the surveying and computational methods, which from the one hand are compatible with the current legal status and from the other hand refer to measurements on the plane and cover the use of modern geodetic instruments, with taking into account the curvature of the Earth and the impact of gravity on the manner of measurements and results	Student possess the knowledge and uses the legal acts which regard carrying out the measurements through the use of unmanned aerial vehicles.			[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects		

Subject contents	<p>Lecture:</p> <ol style="list-style-type: none"> <li>1. Legal acts and Aviation Administration</li> <li>2. The unmanned flights in Polish airspace</li> <li>3. The human factor in aviation</li> <li>4. Separation the zone for BVLOS operations</li> <li>5. The structure of the airspace</li> <li>6. Counteracting threats that may affect flights safety</li> <li>7. Procedures performed in an emergency and dangerous situations</li> <li>8. Risk analysis</li> </ol> <p>Classes:</p> <ol style="list-style-type: none"> <li>1. Separating the zone for BVLOS operations</li> <li>2. Obtaining the information on airspace structures and their activities</li> <li>3. Obtaining the required approvals and contacting with air traffic services</li> </ol>											
Prerequisites and co-requisites												
Assessment methods and criteria	<table border="1" data-bbox="448 880 1497 1010"> <thead> <tr> <th data-bbox="448 880 796 913">Subject passing criteria</th> <th data-bbox="796 880 1141 913">Passing threshold</th> <th data-bbox="1141 880 1497 913">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="448 913 796 972">Getting the positive evaluation from classes</td> <td data-bbox="796 913 1141 972">50.0%</td> <td data-bbox="1141 913 1497 972">40.0%</td> </tr> <tr> <td data-bbox="448 972 796 1010">Test</td> <td data-bbox="796 972 1141 1010">50.0%</td> <td data-bbox="1141 972 1497 1010">60.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Getting the positive evaluation from classes	50.0%	40.0%	Test	50.0%	60.0%
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Recommended reading	<p>Basic literature</p> <p>Supplementary literature</p> <p>eResources addresses</p>	<p>1. The act of law: Ustawa z dnia 3 lipca 2002 r. Prawo lotnicze (Dz. U. 2002 Nr 130 poz 1112, with later amendments) (in Polish)</p> <p>2. The act of law: Obwieszczenie Ministra Infrastruktury z dnia 3 lipca 2019 r. w sprawie ogłoszenia jednolitego tekstu rozporządzenia Ministra Transportu, Budownictwa i Gospodarki Morskiej sprawie wyłączenia zastosowania niektórych przepisów ustawy - Prawo lotnicze do niektórych rodzajów statków powietrznych oraz określenia warunków i wymagań dotyczących używania tych statków. (in Polish)</p> <p>Literature recommended by a teacher during lectures.</p> <p>Adresy na platformie eNauczanie:</p>										
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> <li>1. Discuss the structure of the airspace.</li> <li>2. Discuss the SORA risk assessment.</li> <li>3. Discuss the role of air traffic services.</li> </ol>											
Work placement	Not applicable											